



Review

A scoping review of human-support factors in the context of Internet-based psychological interventions (IPIs) for depression and anxiety disorders



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HIGHLIGHTS

- We examined the role of human-support in IPIs for depression and anxiety disorders.
- Nineteen RCTs were included and 7 types of human support factors were identified.
- Providing structured support in a fixed-interval schedule appears to have a significant effect on treatment outcomes.
- There were mixed findings regarding guided versus unguided interventions and human versus automated support.
- Level of therapist expertise may have little to no impact on treatment outcomes.

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ABSTRACT

Internet-based psychological interventions (IPIs) may provide a highly accessible alternative to in-person psychotherapy. However, little is known about the role of human-support in IPIs for depression and anxiety disorders.

The purpose of this study was to evaluate the evidence in the literature regarding the role of human-support in IPIs for depression and anxiety disorders; identify research gaps; and provide recommendations.

A scoping review of randomized controlled trials was conducted using seven databases. Two reviewers screened citations, selected studies, and extracted data. Data was analyzed and summarized by common human-support factors.

Seven categories for support factors were identified from 19 studies: guided versus unguided IPIs, level of therapist expertise, human versus automated support, scheduled versus unscheduled contact, mode of communication, synchronicity of communication, and intensity of support. Only one feature had a significant effect on treatment outcomes, with scheduled support resulting in better outcomes than unscheduled support. There were mixed findings regarding guided versus unguided interventions and human versus automated support.

Providing structured support in a fixed-interval schedule is recommended to enhance the utilization of IPIs for depression and anxiety disorders. Findings should be interpreted with caution due to the limited available research. Further research is needed to draw robust conclusions.

1. Introduction

Depression and anxiety disorders are the two most prevalent and disabling health conditions worldwide (Strine et al., 2008). In the United States, over 21% of adults (18–64 years) are affected by anxiety disorders and up to 8% of adults experience major depressive disorder each year. Lifetime prevalence is 29% for anxiety disorders and 17% for major depression (Kessler et al., 2012). Moreover, it is predicted that by the year 2020, depression will be the second leading cause of the global disease burden (WHO, 2012). Additionally, both depression and

anxiety disorders are associated with elevated risk for other physical health conditions (i.e., cardiovascular disease and diabetes) and other mental health disorders, impairment in health-related quality of life and social functioning, as well as excess disability (Anderson, Freedland, Clouse, & Lustman, 2001; Barger & Sydemann, 2005; Kawachi, Sparrow, Vokonas, & Weiss, 1994; Kessler et al., 2005). However, despite these risks, the majority of those suffering from these conditions do not seek treatment (Titov et al., 2013). Barriers to receiving treatment include clinician shortage, long wait times, appointment scheduling conflicts, social stigma, high treatment costs, and

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accessibility barriers such as transportation and childcare (Berger, Caspar, et al., 2011; Berger, Hämmerli, Gubser, Andersson, & Caspar, 2011; Renton et al., 2014; Spek et al., 2007). Consequently, there is a critical need for alternative treatment options that can help overcome these barriers and enable individuals to receive adequate mental health services.

Advances in digital information and communication technology offer a means of improving the accessibility to psychological interventions and mental health care (Lustria, Cortese, Noar, & Glueckauf, 2009). The wide use of electronic devices and increasing consumer comfort with technology have enabled the delivery of mental health care to those who were previously unwilling or unable to obtain such care (Hollis et al., 2015). In addition, electronic communication methods also have the potential to increase the range and quality of available mental health services, improve the cost-efficiency of care, and enable treatments to be more precisely tailored to individual patient needs (Shore, 2013). The delivery of health services via electronic means has been labeled with various terminologies including e-health, telehealth, telemedicine, m-health, and connected health. Terms are often used interchangeably and with little consistency (Hollis et al., 2015), creating possible confusion. To more closely capture a specific intervention type and delivery mode, we now operationalize a new term - Internet-based psychological interventions (IPIs). IPIs refer specifically to psychotherapeutic treatment delivered via the Internet. IPIs usually consist of a series of structured sessions that emulate face-to-face psychotherapy and are delivered via the Internet through web-based/online programs. For example, many IPIs utilize protocols based on structured short-term, interventions such as Cognitive Behavioral Therapy (CBT) (Christensen & Petrie, 2013).

There has been significant development and growth of IPIs for the treatment of common mental disorders such as depression and anxiety. In addition, IPIs have been researched extensively over the past two decades (Baumeister, Reichler, Munzinger, & Lin, 2014; Johansson & Andersson, 2012; Mewton, Smith, Rossouw, & Andrews, 2014) and studies have continuously demonstrated that IPIs are not only effective, but also have effect sizes equivalent to those observed in face-to-face psychotherapy and pharmacotherapy for depression and anxiety disorders (Cuijpers, Mark, & van Straten, 2009; Mewton et al., 2014; Newman, Erickson, Przeworski, & Dzus, 2003). Thus, IPIs may have great potential to provide evidence-based care without high accessibility barriers, personal costs and adverse side effects.

While IPIs may be valuable as stand-alone treatments, the majority of IPI clinical trials for depression and anxiety disorders incorporate some form of therapist contact and support (either remotely or in person). In fact, a meta-analysis indicated that human-supported IPIs, performed better than IPIs without support in terms of treatment response and adherence (Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010). Researchers have also evaluated other human-support factors affecting treatment outcomes and adherence to IPIs for depression and anxiety disorders (Gellatly et al., 2007; Newman et al., 2003; Palmqvist, Carlbring, & Andersson, 2007). Understanding different human-support factors and their role in IPIs will help to determine the best ways to effectively implement IPIs and optimize patient outcomes (Newman, Szkodny, Llera, & Przeworski, 2011).

In just over a decade, the number of randomized studies examining the comparative effect of varying human-support factors has grown rapidly. Therefore, the objective of this scoping review was to evaluate the evidence in the literature regarding the role of human-support in IPIs for depression and anxiety disorders; identify major research gaps; and provide recommendations for future research.

2. Methods

A search of seven databases (PubMed, PsycINFO, Cochrane, EMBASE, CINAHL, Scopus and Web of Science) was conducted for studies published in peer-reviewed journals in the last 15 years

(January 2000–October 2016). This timeframe was selected to capture intervention development occurring simultaneously with the proliferation of hand-held technologies (e.g., smart phones), advanced multimedia and broadband Internet services. In addition, we conducted a reverse snowballing (i.e., scanned references from relevant articles) to identify other papers that may not have been identified. For the purpose of this study, human-support was operationalized as any supplementary provision of care delivered by a human therapist, case manager, or patient navigator in the context of the IPI.

An extensive search strategy was utilized and included various search terms related to IPIs including computer assisted therapy, online therapy, telepsychiatry, eHealth, cyber-intervention, remote consultation, guided self-help, and low intensity therapy (full search strategy is available upon request). Two reviewers independently screened titles and abstracts to determine preliminary inclusion status. A second screen of articles' full-text, again by two independent reviewers, ensured that the studies described human-support in the context of an IPI.

Inclusion criteria were: (1) published in a refereed journal in English, (2) participants 18+ years with depression or anxiety (including specific anxiety disorders), (3) intervention studied was an IPI for the treatment of depression or anxiety disorders, (4) treatment conditions included varying degree or modes of human-support in the context of an IPI, (5) included reliable and valid outcome measures for assessing depression or anxiety symptoms, (6) treatment effectiveness was investigated based on a randomized controlled trial (RCT) design, and (7) focused directly upon how different degree or mode of human-support affected the treatment response and acceptability in the context of an IPI.

Data extracted included: sample size and demographic characteristics, study design, type of therapeutic approach, specific IPI utilized, duration of intervention, type of treatment conditions, outcome measures, support features, support delivery mode, detailed description of the support, therapists' level of expertise, effect size, treatment satisfaction, and drop-out (discontinuing the study) and non-usage rates (treatment non-adherence).

Cochrane Risk of Bias tool (Higgins & Altman, 2008) was used to assess the methodological quality of the included studies including selection bias (e.g., random sequence generation and allocation concealment), performance and detection bias (e.g., blinding of participants and personnel), attrition bias (e.g., incomplete outcome data addressed), and reporting bias (e.g., selective reporting). Judgments for each bias (i.e., low risk, high risk, unclear risk) as well as the supporting quotes for the judgments were recorded. Results were analyzed by the subgroups of support factors that were identified during the data extraction process.

3. Results

3.1. Search flow

The comprehensive search terms across 7 databases resulted in 2475 papers-PubMed (n = 441), PsycINFO (n = 424), Cochrane (n = 35), EMBASE (n = 73), CINAHL (n = 305), Scopus (n = 574), and Web of Science (n = 623). Titles and abstracts of all papers were screened against the established inclusion criteria and relevant studies were reviewed, yielding 19 papers. (See Fig. 1 for the flow chart) The most common reasons for exclusion were: no condition including human support, no control condition(s), treatment targeting conditions other than anxiety and depression (e.g., insomnia, addiction), non-psychological interventions, and no IPI (e.g., national hotlines for depression).

3.2. Study samples

Most studies included participants with a diagnosable mood or anxiety disorder, however, 5 studies included individuals with sub-threshold clinical symptoms. Study samples included participants with

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