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Is online treatment adherence affected by presentation and therapist support? A randomized controlled trial

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ABSTRACT

In both face to face and Internet based Cognitive Behavior Therapy, patients' adherence can be improved by different means such as by using motivational techniques or automatic reminders. The main aim of this study was to investigate whether enriched treatment material presentation and/or increased frequency and quality of support would increase participants' adherence to an online relaxation program.

One hundred and sixty-two participants with mild to moderate symptoms of stress or worry were included in this study. Participants were randomized to either Normal or Enhanced intervention presentation and Normal or Enhanced support in a full factorial design. Main outcome variables were progress through the online intervention and adherence to prescribed exercises.

Participants in the Enhanced support group progressed further through the program than participants in the Normal support group ($Z = 2.11$, $p = .035$, $r = .17$) but there were no significant differences found between the Normal and Enhanced presentation groups. Participants registered a mean of 60% of the prescribed exercises with no significant differences between groups.

This study shows that adherence to online interventions can be increased by increased frequency and quality of therapeutic contact. Future studies may investigate how to increase adherence to prescribed homework assignments and whether parts of the therapeutic support may be substituted with automatic systems with retained effects.

1. Introduction

1.1. Adherence in ICBT

It is well established that internet based Cognitive Behavior Therapy (ICBT) and other behavioral interventions can be effective in improving psychological symptoms and health (Griffiths, Farrer, & Christensen, 2010; Webb, Joseph, Yardley, & Michie, 2010). Not all Internet-based interventions are equally effective and pure self-help seems to be less effective than guided self-help where the clinical effects often are on par with face to face therapy (Cuijpers, Donker, van Straten, Li, & Andersson, 2010; van Ballegooijen et al., 2014). Still, many people are not helped by Internet interventions, and attrition rates are sometimes high (Christensen, Griffiths, & Farrer, 2009; Simco, McCusker, & Sewitch, 2014). While attrition should be an important topic in therapy research in general, it has received relatively little attention. Eysenbach (2005) suggests that attrition may be divided into drop out attrition and nonusage attrition. Nonusage attrition is equal to participants' nonadherence to the prescribed intervention while remaining in the study. The usage or nonusage of a prescribed intervention is arguably very important to assess when evaluating the internal validity of a study and the efficacy of an intervention.

Patients' adherence to the prescribed treatment program has been found to predict outcome in both ICBT and in CBT (Donkin et al., 2011; Taylor, Abramowitz, & McKay, 2012). Whether drop out is systematically higher in ICBT compared to face to face CBT is still unclear. Guided ICBT shows similar levels of drop out as face to face CBT while high dropout is generally a larger problem for unguided self-help (van Ballegooijen et al., 2014). In face to face CBT, therapist behaviors that increase therapeutic alliance, such as using motivational techniques and providing feedback and

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encouragement, may be used to improve adherence (Swanson, Pantalon, & Cohen, 1999; Taylor et al., 2012). However, less is known about how to affect adherence in internet based interventions.

Interventions with ICBT often contain a large amount of information or content such as written texts, audio files, and video presentations. These are used to substitute the information provided by the therapist in a live setting. The purpose of such psychoeducation is to inform the patient about the model behind the treatment and to motivate behavior change. Conveying this information should thus be important which calls for a clear and pedagogical presentation of the content (Aronson, Marsch, & Acosta, 2013; Clark & Mayer, 2011). While there are several models for conveying information effectively, research in this area of ICBT is scarce (Brouwer et al., 2008). Persuasive system design is a set of principles based on e-learning experiences that can be used encourage participants' use of internet based interventions (Oinas-Kukkonen & Harjumaa, 2009). Incorporation of such principles has shown to improve adherence in e-health interventions but has not been broadly applied to ICBT (Kelders, Kok, Ossebaard, & Van Gemert-Pijnen, 2012).

Patient adherence in ICBT, or treatment usage, can be operationalized in several ways including attending sessions or completing homework assignments (Cavanagh, 2010). Unfortunately, adherence is not universally defined and not always operationalized in detail in the literature. In CBT, the treatment can be seen as consisting of two parts: in-session work and ex-session work where ex-session work often corresponds to the completion of homework assignments. The use of homework assignments is a key component of CBT and associated with treatment outcome (Scheel, Hanson, & Razzhavaikina, 2004). Assignments have a similar place in ICBT while the in-session work may be translated to progress through the online intervention. An internet intervention typically comprises a number of items, such as texts or exercises, which the patient is prescribed to work with. Patient adherence in ICBT thus include working with the online material and completing homework assignments, both of which are associated with outcome (Donkin et al., 2011).

1.2. Human support in ICBT

While it is clear that human support improves adherence to treatment substantially, the mechanisms for this effect are largely unknown (Baumeister, Reichler, Munzinger, & Lin, 2014). More detailed analyses suggest that the type of support may be of less importance and that even minimal human support is sufficient to achieve a positive therapist effect (Farrand & Woodford, 2013; Newman, Szkodny, Llera, & Przeworski, 2011). However, the impact of the quality and mode of support has only been investigated in a few studies and not in any detail (Titov et al., 2009). The use of specific therapeutic techniques and forms of feedback may have an impact on treatment adherence and outcome (Paxling et al., 2013; Schmidt et al., 2006). For example, motivational techniques have been shown to improve treatment outcomes but, unfortunately, no direct comparisons between different techniques has been conducted (Lancee, van den Bout, Sorbi, & van Straten, 2013). At the same time, other studies suggest that support can be provided by non-specialists without reducing the effect of the intervention (Johnston, Titov, Andrews, Spence, & Dear, 2011; Titov, Andrews, Davies, et al., 2010; Titov, Andrews, Schwencke, et al., 2010). However, many studies compare therapists that are highly trained practitioners or clinicians which may partly explain the lack of therapist effects (e.g., Shandley et al., 2008).

Given that even minimal support seems to be beneficiary and that trained therapist are used in many studies, it is not surprising that levels of working alliance have shown to be similar in ICBT compared to CBT (Andersson et al., 2012). Working alliance in ICBT does not on the other hand seem to be as strongly associated with outcome as in CBT (Preschl, Maercker, & Wagner, 2011) and specific therapist effects are probably small in ICBT (Almlöv et al., 2011). Regarding frequency and time investment, increased time and contact do not seem to affect treatment outcome (Berger et al., 2011; Klein et al., 2009). This suggests that human support is beneficial in ICBT but that the effect is robust and not sensitive to small differences in frequency and mode of delivery.

Ritterband, Thorndike, Cox, Kovatchev, and Gonder-Frederick (2009) suggest a model with key features in Internet-based interventions that can be used to facilitate behavior change. According to this model the appearance of the web page and the presentation of the treatment content may play an important role (Hurling, Fairley, & Dias, 2006; Ritterband et al., 2006). The importance of these factors has yet little empirical support and most design models for internet interventions include both support and rich presentation as integral parts (Kelders et al., 2012). In a previous study, the inclusion of specific motivational techniques in the presentation did improve treatment adherence but not treatment effect (Titov, Andrews, Davies, et al., 2010; Titov, Andrews, Schwencke, et al., 2010). Taken together there is a need to further evaluate the relative importance of rich web or media presentation in Internet interventions. Attrition from ICBT is common at the start of the intervention and early gains in treatment may predict participants treatment outcome (Schibbye et al., 2014). It is unclear whether increasing adherence would keep participants in the treatment and thus potentially improve outcomes. In a previous study, telephone support showed to improve patient adherence but was not associated with improved clinical outcome (Mohr et al., 2013).

1.3. Study aims

Whether enhanced therapist support may increase adherence to treatment in ICBT is still largely unclear. It is also unclear whether treatment material presented using enriched multimedia can increase participants' adherence. The primary aims of this study were to investigate whether treatment conditions with (1) frequent and high-quality support and (2) enriched treatment material presentation would increase participants' adherence to an internet based applied relaxation intervention. Secondary aims were to investigate whether different levels of presentation or support would result in different levels of treatment satisfaction, working alliance and improvements in psychological distress among participants.

2. Method

2.1. Participants and procedure

Participants were recruited by online and public advertisement. Interested persons were referred to a web page with information about the study and an online application form. Those who filled out the application received an informed consent form by mail and those who signed and returned it were included in the study. Participants were randomized to conditions according to a random number list but remained blind to their allocation throughout the study. The first time participants logged in to the secure treatment webpage they were asked to fill out the pre-measurement (see