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Exploring blended group interventions for depression: Randomised controlled feasibility study of a blended computer- and multimedia-supported psychoeducational group intervention for adults with depressive symptoms

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ABSTRACT

Background: Blended interventions aim to capitalise on the strengths of both computer-based and face-to-face therapy. Studies on this innovative treatment format remain scare. This especially accounts for the group treatment of depression.

Method: The present study applied eclectic psychotherapy methods to an adult sample exhibiting a variety of depressive symptoms (N = 46). Participants were recruited by a newspaper inlet and randomised either to a treatment or a waiting list condition. Computer supported components were multimedia group sessions, e-learning, online videos and worksheets, remote therapist-patient communication and online pre-post-assessment.

Results: Large between-group effect sizes on primary outcome depressiveness (CES-D) ($F_{(1,44)} = 4.88$, $p = 0.032$; $d = 0.87$) and secondary outcome personal resources (resource scales) ($F_{(1,44)} = 9.04$, $p = 0.004$; $d = 0.73$ to $F_{(1,44)} = 8.82$ $p = 0.005$, $d = 1.15$) were found in the intention to treat analysis (ANOVA). Subjective evaluation of the intervention revealed high treatment adherence (91%) and high perceived relevance of supportive computer and multimedia components. Participants rated computer and multimedia components comparable to treatment elements such as group interaction or specific cognitive behavioural exercises, and 25% associated the utilisation of those components with treatment success. Depressiveness and age did not predict the utilisation and the appraisal of computer and multimedia components.

Discussion: Results provide preliminary support for the acceptability and feasibility of the investigated blended treatment in a group with non-specific depressive symptoms. However, small sample size and lack of diagnostics restrict generalizability. Additional research in clinical settings is needed.

1. Introduction

Mental disorders are highly prevalent and impose considerable suffering and a heavy burden on those they afflict and on society as a whole. They are also costly, and thereby affect both health systems and national economies (Vigo et al., 2016). Amongst others, major depressive disorder (MDD) is one of the leading contributors to, and a major risk factor for, somatic diseases (Lett et al., 2004), non-compliance in medical treatment (DiMatteo et al., 2000), mortality (Barth et al., 2004) and suicide (Brown et al., 2000). In Europe, about 14 million out of every 34 million depressed individuals go untreated on an annual basis (Kohn et al., 2004). Moreover, mental health care treatment gaps exist in many Western countries, such as Austria. Amongst others, fear of stigma, lack of trained professionals, long waiting lists (Emmelkamp et al., 2014) and high private treatment costs (Spitzbart, 2004; Ayanian et al., 2000) act as treatment barriers. According to mental health experts, current top research priorities include health policy and systems research on how to deliver cost-effective interventions in a low-resource context (Tomlinson et al., 2009).

Online interventions hold promise to constituting such a low-resource translational strategy for mental health care (Andersson et al., 2014). Solid evidence for the effectiveness and cost-efficiency of such remotely delivered interventions exists, especially in the treatment of mental disorders like depression (Cuijpers et al., 2015) or anxiety (Pasarelu et al., 2017). Therapist guidance and support often appear crucial in maximising treatment effects and reducing dropout

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from these interventions (Johansson and Andersson, 2012; Richards and Richardson, 2012).

Within online interventions, an additional branch of research has recently been developed, aiming to merge classical face-to-face therapies with online interventions into the hybrid treatment format of "blended therapy" (cf. Kooistra et al., 2016). The professed goal of blended therapy is to combine the advantages of classical psychotherapy (e.g. personal contact) and online interventions (Kemmeren et al., 2016). As blending depends on contextual aspects and the number of possible configurations is high, it remains difficult to define exactly what blended therapy constitutes (Krieger et al., 2014). Blended therapy might be considered as any combination of web-, mobile- or technology-based application with face-to-face therapy. van der Vaart et al. (2014) consider blended therapy as *"[…] a combination of online and face-to-face therapy, in which online sessions replace or substitute some (parts) of the sessions with a health professional […]."* In other studies (cf. Craske et al., 2009) computer provide in-session support for the therapist in order to improve the delivery of evidence-based therapy methods. Kooistra et al. (2014) add that the combination of online and face-to-face components should result in one integrated treatment. For our study's purpose we define blended therapy as an integrated combination of face-to-face sessions with in- and inter-session computer support, aiming at improving the delivery of evidence-based therapy. Usually, online components of blended treatments include psychoeducation, specific computer-adapted cognitive behavioural techniques as well as text- or video-based testimonials that guide participants through the intervention (Kooistra et al., 2016; Romijn et al., 2015). Content can be presented via e-learning, but there also exist simply structured applications for mobile phones (Ly et al., 2015). In many rationales, face-to-face sessions, online sessions and remote feedback on online sessions alternate every one or two weeks.

Concept studies on blended therapy indicate good acceptance of this new treatment format. For example, Craske et al. (2009) treated patients with anxiety disorders via a computer-assisted intervention and showed sustainable therapy outcomes and high participant satisfaction. A proof of concept study by Mansson et al. (2013) investigated the usefulness of an online support system for depression and anxiety, consisting of basic cognitive behavioural therapy (CBT) components and a library of internet cognitive behavioural therapy (iCBT) manuals. Involved therapists and patients evaluated the support system as beneficial in terms of providing structured therapy, facilitating communication and reducing therapist drift away from evidence-based treatment manuals. Moreover, blended treatment has the potential to reduce therapist time while maintaining efficacy. In an early comparative study (Wright et al., 2005), a computer-assisted short-term treatment for depression was found to be equally effective as an eight-session standard cognitive therapy. Currently, a European multicenter study is being undertaken in eight countries (E-Compared) with the aim of evaluating the cost-effectiveness of blended cognitive behavioural therapy (bCBT) on a large scale (Kleiboer et al., 2016). At same time, findings from naturalistic studies identify possible challenges that could arise from the integration of blended care into routine practice. Here, suboptimal implementation strategies might result in failures of expected time or cost savings (cf. Kenter et al., 2015).

While the blended treatment format has been investigated several times in individual therapy, little is known about its actual importance in group interventions. Psychological group interventions have a long history and a broad range of applications. They are well-suited to meeting patients' needs, and when it comes to social interaction and social learning (Haight and Gibson, 2005) they are almost as effective as individual therapy (Mcdermut et al., 2001; Cuijpers et al., 2008) while remaining reasonably inexpensive, costing just half of what individual therapy does (Vos et al., 2005). Thus, mental healthcare stakeholders in Germany (Weber and Strauss, 2015) and Austria (Riedel, 2015) are currently promoting group interventions to increase their uptake.

Utilisation of technology in group interventions has been investigated in various contexts, such as chat-based group therapy (Barak and Wander-Schwartz, 2000), online peer-to-peer support (Eysenbach et al., 2004; Hoey et al., 2008), chat groups for relapse prevention (Bauer et al., 2011) and as an adjunctive gamification tool (Miloff et al., 2015). However, only a few studies have integrated computer components more profoundly into the treatment rationale—as suggested by the above definition of blended therapy. Still, blended group intervention studies for some frequent disorders, such as generalised anxiety disorder (GAD) and social phobia, exist. Przeworski and Newman (2004) developed a group treatment for social phobia entailing Palmtop-supported relaxation, cognitive restructuring and self-control desensitisation modules. Findings suggest good acceptability of blended group treatments and possible savings of therapist time. A comparative study (Gruber et al., 2001) found equal effects in an 8-session blended group treatment for social phobia as a 12-session standard cognitive behavioural treatment. In a more recent controlled trial (Newman et al., 2014), comparable treatment outcomes were observed in a 6-session Palmtop computer-assisted group therapy for generalised anxiety disorders as a 12-session standard group therapy. However, literature on blended group interventions remains scarce and older studies do not adequately account for rapid changes modern technology and user behaviour have undergone in the last decade. Efforts to develop seamless software designs that better fit intuitive user behaviour are only one example. From a face validity standpoint, the lack of developed applications might be even more surprising, when considering that blended learning originates from group settings and is widely used — for example, as an integrative tool for teaching or cooperative training (Zumbach, 2010). Regarding the treatment of depression we have not been able to find any studies on acceptability and effects of blended group treatments.

2. Intervention

With respect to this situation, we merged both treatment strategies and created a blended psychoeducational group intervention for depression. Due to the demand for less stigmatising and more appealing treatments (Ellis et al., 2013), we designed an eclectic intervention with emphasis on positive and resource-oriented psychology. Resource-oriented psychotherapy focuses on current concerns and tries to build on personal skills in order to achieve set goals (cf. Grawe, 2004). The transtheoretical model of behaviour change (TTM; Prochaska and Diclemente, 1982) served as the underlying framework. TTM is a generic process model suggesting four common stages of change: contemplation (thinking about change), preparation (planning to change), action (adopting new habits) and maintenance (practising new behaviour). Course modules were aligned to the stages of the TTM (see Table 1). Here, psychoeducation, positive psychology as well as acceptance and mindfulness address more cognitive aspects of depression, while later stages (stress-, time and self-management) relate to behavioural treatment strategies.

The entire course included eight multimedia-supported group sessions (lasting 90 min), eight video-supported online homework modules (offered via an e-learning platform), a 180-slide handout, a semi-structured diary and daily brief relaxation in the first two weeks. Detailed information on the course modules is presented in Table 1. An unpublished one-arm pre-pilot study (student sample, N = 18) preceded the present trial to ensure its applicability and to adjust the intervention to participants' needs. Subsequent adjustments merely concerned minor changes, such as swaps of single tasks or the introduction of a mid-course break and a slight reduction in total workload. Observed within subjects effect sizes ranged from $d = 0.6$ to 1.0.