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Research report

Effectiveness of transdiagnostic internet cognitive behavioural treatment for mixed anxiety and depression in primary care

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ABSTRACT

Background: Internet-delivered cognitive behavioural treatment (iCBT) has been shown to be effective for the combined treatment of depression and anxiety in randomised controlled trials. The degree to which these findings generalise to patients in primary care awaits further investigation.
Methods: Using an open-trial design, we investigated adherence to, and effectiveness of a 6-lesson therapist-assisted iCBT program for mixed anxiety and depression for patients ($n = 707$) who completed the program under the supervision of primary care clinicians (general practitioners, psychologists and other allied health professionals). Primary outcome measures were the PHQ-9 (depression), GAD-7 (generalised anxiety), K-10 (distress), WHODAS-II (disability), mini-SPIN (social anxiety) and panic disorder severity scale self-report version (PDSS).
Results: Adherence to the iCBT program was modest (47.3%), but within-subjects effect sizes ranged from medium (0.51 for PDSS) to large (1.20 for PHQ-9).
Limitations: The lack of control group, limited post-treatment data due to drop-out, and short follow-up period.
Conclusions: iCBT is an effective treatment for mixed depression and anxiety when delivered in primary care settings. Methods to increase adherence are needed to optimise the benefits to patients.

1. Introduction

Depressive and anxiety disorders remain a problem worldwide, accounting for over 7% of the overall burden of human disease (World Health Organization, 2008). Although there are effective psychological and pharmacological treatments for depression and anxiety (Stewart and Chambless, 2009; Cuijpers et al., 2008), many people do not seek treatment (Andrews et al., 2001; Gonzalez et al., 2010), or receive treatments that are suboptimal or not delivered competently (Shafran et al., 2009). To improve access to evidence-based psychological treatments for mental health problems and minimise health care costs and waiting times, internet-based treatments have been developed and evaluated (Andrews et al., 2010). Internet treatments have the potential to deliver effective mental health care interventions on a large scale to people in need (Williams and Andrews, 2013; Spek et al., 2007; Andersson et al., 2013a). Because they require less therapist time than face-to-face interventions, they offer a cost-effective and accessible treatment option to reduce the burden of depression and anxiety.

A large number of randomised controlled trials (RCTs) and recent meta-analyses of internet-delivered CBT (iCBT) programs demonstrate that they are feasible and effective for treating depression (Perini et al., 2009; Ruwaard et al., 2009), and a range of anxiety disorders. ICBT programs are available for panic disorder (Wims et al., 2010; Shandley et al., 2008), social phobia (Titov et al., 2008; Stott et al., 2013), generalised anxiety disorder (Robinson et al., 2010; Paxling et al., 2011), posttraumatic disorder (Spence et al., 2011; Klein et al., 2010), mixed anxiety disorders (Johnston et al., 2011; Carlbring et al., 2011) as well as comorbid anxiety and depression (Titov et al., 2011, Newby et al., 2013; Johansson et al., 2012). Adherence rates are high in clinical trials (70–90%: e.g., Titov et al., 2011) and clinically significant reductions are observed in symptoms, disability and distress, with medium to large effect sizes (0.88, NNT=2.13) (Spek et al., 2007; Andrews et al., 2010). ICBT appears to have enduring positive effects, with post-treatment gains maintained up to 5-year follow-up (Hedman et al., 2011b). Finally, growing evidence suggests that iCBT is equally effective as group- and individual- face-to-face CBT (Hedman et al., 2011a; Wagner et al., 2013; Andrews et al., 2011), and may even outperform group-based CBT for depression over the long-term (Andersson et al., 2013b). Together, the evidence from RCTs provides strong support for the use of iCBT programs in the treatment of depression and anxiety.

Randomised controlled trials are widely considered to be the gold-standard method to evaluate new psychological (and pharmacological)

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treatments. However, the strict inclusion criteria for entry into RCTs often limits the generalisability of the findings to routine clinical practice (Westen et al., 2004). Effectiveness studies that explore the impact of treatments in 'real-world' clinical settings are critical to further evaluate new treatments. To date, in the evaluation of iCBT, there have been relatively few effectiveness studies, and most have been conducted in specialist psychiatric settings not in primary care.

1.1. Effectiveness of iCBT in specialist psychiatric settings

A series of open trials have evaluated the effectiveness of iCBT programs when delivered as part of routine care in specialist psychiatric settings. Mirroring the findings from RCTs, these studies have shown that iCBT is effective in the treatment of panic disorder (Cohen's $d=1.07–2.5$) (Bergstrom et al., 2010, 2009; Hedman et al., 2013), PTSD, depression and burn-out (Cohen's *d's:* 1.2–1.9) (Ruwaard et al., 2012), and depression (Hedman et al., 2014), with good adherence (up to 71%) (Ruwaard et al., 2009). Although there are advantages to incorporating iCBT within specialist psychiatric settings (e.g., standardised psychoeducation can be delivered by the computer), it is unclear whether it provides the most effective way to disseminate iCBT on a large scale to people who suffer from anxiety and depression. The majority of people with anxiety and depressive disorders first seek help from their General Practitioner (GP) (Andrews et al., 2001). Therefore, disseminating iCBT programs within primary care settings provides an additional and promising avenue to reach people in need.

1.2. Effectiveness and clinical utility of iCBT in primary care settings

Effectiveness research has shown that rates of adherence are lower when iCBT is completed under the supervision of primary care practitioners compared to when it is completed within RCTs (55% for depression, Williams and Andrews, 2013; Shandley et al., 2008; 54% for GAD, Mewton et al., 2012). However, outcomes are good (medium to large effect sizes) for those who do complete iCBT programs for GAD (Mewton et al., 2012) and depression (Watts et al., 2012; Williams and Andrews, 2013) in primary care (see also Sunderland et al., 2012; Hilvert-Bruce et al., 2012). Recent (albeit preliminary) findings from our own research team also suggest that iCBT for depression may be effective in reducing the frequency of suicidal thoughts in those who complete treatment (Watts et al., 2012; Williams and Andrews, 2013). Disorder-specific iCBT programs are therefore useful and highly effective in primary care. In addition, although these results await further testing and replication in additional samples, they suggest that iCBT may provide one method to reduce suicidal ideation, and possibly, suicide risk in depressed samples. However, mixed anxiety and depression is more common than 'pure diagnoses' in the community (Brown et al., 2001) and is a frequent presentation in primary care (Zinbarg et al., 1994). Effective treatments for mixed anxiety and depression are needed in primary care because anxiety/depression comorbidity is associated with more severe impairment, increased risk for suicide, and worse outcome (Hofmeijer-Sevink et al., 2012; Tyrer, 2001).

One approach to treating mixed anxiety and depression is to deliver disorder-specific programs sequentially; that is, treat the patient's primary disorder first, and then subsequently treat remaining symptoms using evidence-based programs. An alternative approach is to use "transdiagnostic" interventions that incorporate techniques to target both depressive and anxiety symptoms within the one program. Transdiagnostic treatments aim to target shared symptoms and maintaining factors across anxiety and depressive disorders (e.g., Barlow et al., 2004), and have received growing support in various treatment delivery modalities including via the internet (Titov et al., 2011; Carlbring et al., 2011). Although it is currently unclear whether the disorder-specific or transdiagnostic approach to treatment is more acceptable, effective, pragmatic, and cost-effective in alleviating mixed anxiety and depression (Norton and Barrera, 2012), further clinical research is needed to evaluate the effectiveness of transdiagnostic programs in primary care settings.

To address the need to target mixed anxiety and depression, and provide primary care clinicians and their patients with a program that targets both types of symptoms, we developed a transdiagnostic iCBT program called the *Depression and Anxiety Program* and evaluated the program in a RCT comparing this program with wait-list control (Newby et al., 2013). In a RCT, we found 89% adherence and clinically significant reductions in generalised anxiety, depression, and functional impairment. We also conducted a preliminary exploration of effectiveness of the *Depression and Anxiety program* in primary care over a 3-month period and found large effect sizes for the reduction of generalised anxiety and depression symptoms (>0.8), but modest adherence (41%).

We now extend the preliminary findings in Newby et al. (2013) by evaluating the adherence and effectiveness of our iCBT program for mixed depression and anxiety in a cohort of 707 patients who have been prescribed the program by their primary care clinician between August 2011 and May 2013. We aimed to evaluate the impact of the program on depression and generalised anxiety, as well as a wider range of comorbid symptoms (e.g., panic disorder and social anxiety) and suicidal ideation. Finally, we aimed to explore the predictors of adherence and effectiveness of the iCBT program in primary care. We hypothesised that adherence rates would be modest (40–50%), but effect sizes would be large (0.8–1.0). We also expected on the basis of Watts et al. who showed suicidal ideation reduced following iCBT for depression, that suicidal ideation would reduce over the course of this transdiagnostic program. Finally, based on evidence of predictors of outcome in iCBT, we expected people with higher baseline severity would demonstrate greater improvements (Bower et al., 2013). To our knowledge, this is the largest effectiveness study of iCBT for mixed anxiety and depression in primary care settings, and is the first to evaluate the impact of transdiagnostic iCBT on suicidal ideation.

2. Methods

2.1. Setting

ThisWayUp Clinic (www.thiswayup.org.au/clinic) is an online treatment clinic for depression and anxiety. There are currently six validated online six-lesson CBT programs available on the website: depression, GAD, social phobia, panic disorder, obsessive compulsive disorder, and mixed anxiety and depression (the *Depression and Anxiety program*). At the end of the program evaluation period in this study (May, 2013), there were 3632 clinicians who were registered to the use the website, and the majority are in primary care (93.7%, with medical specialist comprising the remaining 6.3%). Of these clinicians, 1000 are active users of the service. Registered clinicians provide their patient with a written prescription for an iCBT program that tells the patient how to enrol, and provides a secure passcode linking the patient to the supervising clinician. Patients complete a K-10, a diagnosis-independent measure of psychological distress (Kessler et al., 2002), prior to the commencement of each lesson. Automated emails are sent to the patient's supervising clinician once (a) the patient has completed a lesson (the email includes a lesson-by-lesson summary of the K-10 scores) (b) if the patient's score on the K-10 rises 0.5SD between