

# Clinical and Cost-Effectiveness of Therapist-Guided Internet-Delivered Cognitive Behavior Therapy for Older Adults With Symptoms of Anxiety: A Randomized Controlled Trial

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## There is preliminary support for internet-delivered cognitive behaviour therapy (iCBT) as a way of improving access

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to treatment among older adults with anxiety. The aim of this randomized controlled trial (RCT) was to examine the efficacy, long-term outcomes, and cost-effectiveness of an iCBT program for adults over 60 years of age with anxiety. Successful applicants were randomly allocated to either the treatment group ( $n = 35$ ) or the waitlist control group ( $n = 37$ ). The online treatment course was delivered over 8 weeks and provided with brief weekly contact with a clinical psychologist via telephone or secure email. Eighty-four percent of participants completed the iCBT course within the 8 weeks and 90% provided data at posttreatment. Significantly lower scores on measures of anxiety (Cohen's  $d = 1.43$ ; 95% CI: 0.89 – 1.93) and depression (Cohen's  $d = 1.79$ ; 95% CI: 1.21 – 2.32) were found among the treatment group compared to the control group at posttreatment. These lower scores were maintained at

3-month and 12-month follow-up and the treatment group rated the iCBT treatment as acceptable. The treatment group had slightly higher costs (\$92.2; 95% CI: \$38.7 to \$149.2) and Quality-Adjusted Life-Years (QALYs = 0.010; 95% CI: 0.003 to 0.018) than the control group at post-treatment and the intervention was found to have a greater than 95% probability of being cost-effective. The results support iCBT as an efficacious and cost-effective treatment option for older adults with symptoms of anxiety.

Trial Registration: Australian and New Zealand Clinical Trials Registry: ACTRN12611000929909; <https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?ACTRN=12611000929909>.

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*Keywords:* anxiety; older adults; internet; cognitive behavior therapy (CBT); cost-effectiveness

ANXIETY AND ANXIETY DISORDERS are a significant public health problem among older adults. Approximately 8% of adults aged 65 and above meet formal diagnostic criteria for anxiety disorders (Byers, Yaffe, Covinsky, Friedman, & Bruce, 2010; Gum, King-Kallimanis, & Kohn, 2009), which are associated with increased risk of death, physical disability, and reduced quality of life (Andreescu et al., 2007; Brenes et al., 2008; Grek, 2007). There is considerable evidence for the efficacy of face-to-face psychological treatments, such as cognitive-behavior therapy (CBT), for older adults with anxiety and depression (Ayers, Sorrell, Thorp, & Wetherell, 2007; Gould, Coulson, & Howard, 2012; Nordhus & Pallesen, 2003; Scogin, Welsh, Hanson, Stump, & Coates, 2005; Wetherell, Lenze, & Stanley, 2005). However, while effective treatments exist, research indicates that less than 30% of older adults with a mental health disorder seek treatment (Troller, Anderson, Sachdev, Brodaty, & Andrews, 2007) due to barriers including stigma, mobility limitations, costs, and low mental-health literacy.

Internet-delivered cognitive behavior therapy (iCBT) is an approach that can increase access to treatment (Dear et al., 2013; Spek et al., 2007; Zou et al., 2012). iCBT treatments provide the same information and teach the same skills as traditional face-to-face CBT but do so via the internet using structured materials, often with therapist support via email and telephone. There is now strong meta-analytic evidence for the efficacy of iCBT for anxiety and depression when provided with therapist support (Andersson & Cuijpers, 2009; Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Cuijpers et al., 2009). There is also emerging evidence of the cost-effectiveness of iCBT for adults with anxiety and depression (Hedman, Ljotsson, & Lindfors, 2012).

To date, one randomized controlled trial (RCT) and two open trials have been conducted examining iCBT with older adults with symptoms of anxiety and depression (Dear et al., 2013; Spek et al., 2007; Zou et al., 2012). Importantly, while the RCT ( $n = 301$ ) produced encouraging results favoring clinician-guided iCBT, it focused on adults over the age of 50 (mean age = 55;  $SD = 4.6$ ) and only included adults with subclinical-level symptoms of depression, limiting the generalizability of the results to older adults (i.e., greater than 60 years of age) with clinical level symptoms or meeting diagnostic criteria for a disorder (Spek et al., 2007). In contrast, the two open trials examined iCBT programs for adults over the age of 60 and focused on older adults with clinical-level symptoms of anxiety and depression (Dear et al., 2013; Zou et al., 2012). Encouragingly these two trials found large within-group effect sizes (Cohen's  $d > 1.0$ ) among older adults with stress and anxiety (Zou et al., 2012) and low mood and depression (Dear et al., 2013). However, while encouraging, the findings of these studies are limited by their use of single group uncontrolled trial designs and no studies have examined the cost-effectiveness of iCBT for older adults. Thus, there is a need for RCTs of iCBT for older adults with anxiety and depression to inform the current literature.

The present study examined the efficacy, long-term outcomes, and cost-effectiveness of a new iCBT program, the Managing Stress and Anxiety Course, for adults aged 60 years and over who were experiencing symptoms of stress, anxiety, and worry. The course is a five-lesson iCBT program and is delivered over 8 weeks with regular support from a clinical psychologist via a secure email system and telephone. Using a two-group RCT design, it was hypothesised that: (a) the treatment group would report significantly reduced symptoms of anxiety at posttreatment compared with the waitlist control group, (b) symptom reductions of the treatment group would be sustained at 3-month and 12-month follow-up, and (c) iCBT would be cost-effective based on differences in costs and Quality-Adjusted Life-Years (QALYs).

## Method

### PARTICIPANTS

Applicants read about the study and applied to participate via the website of the eCentreClinic ([www.ecentreclinic.org](http://www.ecentreclinic.org)). The eCentreClinic website provides information about common mental health conditions and regularly offers free treatment via participation in clinical trials. Because of the information offered and the potential to participate in treatment, the eCentreClinic website can be located via online searches and is promoted on

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