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A randomized controlled trial of an audio-based treatment program for child anxiety disorders

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ABSTRACT

The aim of this study was to investigate the efficacy of an audio-based cognitive-behavioural therapy (CBT) program for child anxiety disorders. Twenty-four children aged 5–11 years were randomly allocated into either the audio-based CBT program condition (Audio, $n = 12$) or a waitlist control (WL; $n = 12$) group. Outcome measures included a clinical diagnostic interview, clinician-rated global assessment of functioning, and parent and child self-report ratings of anxiety and internalisation. Assessments were conducted prior to treatment, 12 weeks following treatment, and at 3-month follow-up. Results indicated that at post-assessment, 58.3% of children receiving treatment compared to 16.7% of waitlist children were free of their *primary* diagnosis, with this figure rising to 66.67% at the 3-month follow-up time point. Additionally, at post-assessment, 25.0% of children in the treatment condition compared to .0% of the waitlist condition were free of *all* anxiety diagnoses, with this figure rising to 41.67% for the treatment group at 3-month follow-up. Overall, the findings suggest that the audio program tested in this study has the potential to be an efficacious treatment alternative for anxious children.

The high prevalence rates and chronic course of youth anxiety disorders are alarming, particularly given the later mental health difficulties and myriad of negative consequences that occur when they are left untreated (Anderson, Williams, McGee, & Silva, 1987; Ferdinand & Verhulst, 1995; Kessler et al., 2011; Newman, Kenardy, Herman, & Taylor, 1996). Although a wealth of evidence lends support for cognitive behaviour therapy (CBT) in treating anxiety disorders in children and adolescents (Silverman, Pina, & Viswesvaran, 2008), the vast majority do not receive the treatment they need (Collins, Westra, Dozois, & Burns, 2004; Essau, 2005; Green, Hunt, & Stain, 2012; Merikangas, He, Brody, et al., 2010; Merikangas, He, Burstein et al., 2010; Sawyer et al., 2001).

So why do young people fail to receive assistance for their mental health concerns? It would seem that there are a variety of patient-level factors as well as organisational concerns. Fears about confidentiality, inadequate knowledge of services, discomfort in disclosing health concerns, high service costs, extensive waiting lists, limited mental health literacy, the stigma associated with receiving mental health care, family constraints (in terms of time, accessibility, and finance), additional parental responsibilities, single parenting, and parental unemployment have all been implicated (Booth et al., 2004; Boyd et al., 2007; Owens et al., 2002). Those living in rural areas have even higher levels of unmet need for treatment (Lin, Goering, Offord, Campbell, & Boyle, 1996; Parikh, Wasylenki, Goering, & Wong, 1996; Wang et al., 2005) and a longer delay in help-seeking (Boyd et al., 2007; Green et al., 2012) due to limited availability of specialist mental health services and distance between services and place of residence (Aisbett, Boyd, Francis, Newnham, & Newnham, 2007; Green et al., 2012).

Unfortunately, the delay between onset of psychological problems and receiving effective treatment is associated with poorer outcomes (Aisbett et al., 2007; Conus & McGorry, 2002). Consequently, creative and innovative approaches in the dissemination of CBT-based interventions are being explored and the current challenge facing researchers and practitioners is to develop, and subsequently employ, more accessible methods of psychological treatments for youth in need. Thus far, both bibliotherapy and computerised programs have been investigated as potential

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alternatives to face-to-face therapy within pediatric populations.

With respect to bibliotherapy, there is scant research conducted with children (Rapee, Abbott, & Lyneham, 2006). Rapee et al. (2006) investigated the impact of parents acting as therapists in a trial of bibliotherapy for child anxiety and found some evidence for its efficacy relative to a waitlist, but not when compared to a standard group CBT condition. A subsequent study investigated the same bibliotherapy program with the addition of telephone calls or emails from a therapist to the parent and found that it produced superior outcomes compared to no treatment, and equivalent outcomes to other studies using traditional face-to-face therapy (Lyneham & Rapee, 2006).

Other studies investigating bibliotherapy for youth anxiety disorders have produced similar results. Cobham (2012) compared children 7–14 years of age with an anxiety disorder receiving therapist-supported bibliotherapy, individual therapy, and a wait-list condition. Overall, children in the two active treatments demonstrated a significantly greater decrease in anxiety symptoms compared to those in the wait-list condition, with no significant differences between the two therapy conditions. A family centred study conducted on a bibliotherapy program called 'Strongest Families' that was designed to reduce symptoms of ODD, ADHD, and anxiety in children between the ages of 3–12 years (McGrath et al., 2011), found that although significant treatment effects were not found at post-treatment (120 days), the treatment group held significantly fewer anxiety diagnoses at follow-up (240 days) and at the 1-year assessment point compared to the waitlist group. Finally, a very recent pilot study investigated the efficacy of bibliotherapy in treating specific phobias in young children (Lewis, Amatya, Coffman, & Ollendick, 2015). Treatment involved parents reading a story about night-time fears and completing activities prescribed in the book. Assessments took place at baseline, post-treatment, and one-month follow-up, with results revealing that eight of the nine children demonstrated clinically significant improvements in anxiety at post- and follow-up assessment points.

As noted above, computerised therapy has also been developed as an alternative to traditional face-to-face therapy, and there are an increasing number of programs being designed to target youth anxiety disorders. The first to translate CBT into an online format were Spence and colleagues (Donovan & March, 2014a, 2014b; March, Spence, & Donovan, 2009; Spence et al., 2006, 2011). Their BRAVE–ONLINE programs are Internet-based CBT treatment programs for pre-schoolers (3–6 years), children (7–12 years), and adolescents (13–17 years). There have now been four randomised controlled trials conducted with the BRAVE-ONLINE programs. The programs have been found to be significantly more efficacious than a waitlist control for pre-schoolers, children and adolescents (Donovan & March, 2014a, 2014b; March et al., 2009; Spence et al., 2006, 2011) and equally as effective as face-to-face therapy (Spence et al., 2011).

In addition to the BRAVE-ONLINE programs, a number of other computer-based programs have been developed for youth anxiety disorders. For example, Khanna and Kendall (2010) developed a CD-ROM program called Camp Cope-A-Lot, for children aged 7–13 years with anxiety. The program involves half of the sessions being conducted via computer and half with a face-to-face therapist. Findings support the program as being equally efficacious as clinic-based CBT, with high satisfaction reported by participants (Khanna & Kendall, 2010). Also using a CD-ROM delivery mode, is the Cool Teens Program (Cunningham, Rapee, & Lyneham, 2006). Early evidence of efficacy was supported through a case series of five adolescents (Cunningham et al., 2006), with a later randomised controlled trial of the program further demonstrating its effectiveness (Wuthrich et al., 2012). For a systematic review of computer-based programs for anxiety disorders, please see Donovan and March (2014a, 2014b).

Bibliotherapy and computer-based alternatives to the more traditional face-to-face delivery of CBT for youth anxiety disorders have a number of advantages and disadvantages. Bibliotherapy is able to reach large numbers of people, is highly cost-effective, can facilitate autonomy and individuality by decreasing reliance on mental health professionals, and can serve educative and preventative functions (Rosen, 1987). Additionally, bibliotherapy for child anxiety is typically implemented at home with a caregiver and can therefore be incorporated into the child's daily routine under the guidance of a parent (Rapee et al., 2006). The advantages of using parents as therapists include: parental knowledge of their child's functioning, fears, and areas of concern; the trust and rapport that children already have with their parent and; the frequency with which the parent is present in a child's life. Similarly, computer-based interventions offer a number of advantages. They are more cost-effective, accessible, anonymous, and families are able to complete treatment anywhere where they have access to a computer and at their own pace. Computerised interventions are appealing to young people and may also provide new treatment opportunities for physically disabled patients who are unable to travel for mental health treatment (Rochlen, Zack, & Speyer, 2004). Thus, both bibliotherapy and computer-based therapy alternatives circumvent many of the barriers that traditional clinic-based therapies face.

Despite the advantages of bibliotherapy and computer-based therapies however, there are also disadvantages associated with these approaches. With respect to bibliotherapy, dropout appears to be a problem. Indeed, Rapee et al.'s (2006) investigation indicated greater dropout rates compared to traditional group therapy and the waitlist group. Specifically, 12 (13.8%) participants dropped out from the waitlist condition, 29 participants (32.2%) from the bibliotherapy condition, and 14 participants (15.6%) from the group treatment. This is an important point, as bibliotherapy is not suitable for every family. It requires a degree of independence and may not be effective for those expecting and requiring active guidance and advice from an expert.

Computerised treatments pose a number of disadvantages as well. First, there is need for a computer and fast Internet connectivity. Although a large percentage of households have computer and Internet access, there remain a proportion of individuals who do not, or for whom Internet speed is below acceptable levels, particularly in rural areas. For example in Australia, a country with vast rural and remote areas, 21% of households located outside the major cities do not have Internet access. Thus, it may well be that those most in need of computer-based therapies (i.e., those in rural and remote areas who have less access to traditional face-to-face therapy), may not be able to access them.

As is evident from the above discussion, although bibliotherapy and computer-based therapies have many benefits, they are not without their limitations and there remains a need for additional alternative treatment delivery methods to provide efficacious CBT programs for youth anxiety disorders (Calear & Christensen, 2010). This study sought to explore the efficacy of one such alternative, an audio-based program developed for the treatment of child anxiety disorders. It would seem that there has been little if any prior research conducted on audio programs for any type of disorder with any age population. Indeed, the authors were only able to find two papers in which an audio mode of treatment delivery was employed. Both studies were published prior to 1975 and involved systematic desensitisation for adult phobias (Baker, Cohen & Saunders, 1973; Kahn & Baker, 1968). Indeed, more current audio-based approaches, delivered through either CDs or mobile applications (Apps) tend to be adjuncts to therapy rather than complete CBT programs. For example, the BRAVE program (March et al.,