



# Prevention and early intervention of anxiety problems in young children: A pilot evaluation of Cool Little Kids Online



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## ABSTRACT

Anxiety disorders are common, debilitating, and begin early in life. Early intervention to prevent anxiety disorders in children who are at risk could have long-term impact. The 'Cool Little Kids' parenting group program has previously been shown to be efficacious in preventing anxiety disorders in temperamentally inhibited young children. Wider dissemination of the program could be achieved with an internet-based delivery platform, affording greater accessibility and convenience for parents. The aim of this study was to evaluate 'Cool Little Kids Online', a newly developed online version of the existing parenting group program. Fifty-one parents of children aged 3–6 years were recruited to evaluate the online program's acceptability and preliminary efficacy in reducing inhibited young children's anxiety problems. Parents were randomized to receive either a clinician-supported version or an unsupported version of the program. Parents had 10 weeks to access the program and completed questionnaires at baseline and post-intervention. Both groups showed medium-to-large reductions in children's anxiety symptoms, emotional symptoms, number of child anxiety diagnoses, and improvements in life interference from anxiety. The effect of clinician support was inconsistent and difficult to interpret. Parents reported high levels of satisfaction with the program. These encouraging results indicate that the online version is acceptable and useful for parents with temperamentally inhibited young children. Cool Little Kids Online may be a promising direction for improving access to an evidence-based prevention and early intervention program for child anxiety problems. A large randomized trial is warranted to further evaluate efficacy.

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## 1. Introduction

Anxiety is the most common mental health disorder in children and adolescents, with lifetime prevalence rates of 30% by age 18, and median age of onset of 6 years (Merikangas et al., 2010). Anxiety in childhood is a strong predictor of anxiety disorders during adolescence and early adulthood, as well as secondary problems such as depression (Rapee et al., 2009). There is also considerable stability in early childhood, as 50% of three year olds with an anxiety disorder also experience anxiety at six years of age (Bufferd et al., 2012). Childhood anxiety disorders cause substantial impairment in peer and family relationships and academic achievement (Drake and Ginsburg, 2012). Given anxiety's early onset and association with significant impairment, there is a clear rationale to intervene early with children at risk. Anxiety prevention programs for children and adolescents can be effective, especially when

programs are targeted towards children at greater risk (Teubert and Pinquart, 2011).

Both genetic and environmental risk factors for anxiety disorders in children have been identified (Drake and Ginsburg, 2012). A clear risk factor in early childhood is temperamental inhibition, which has a strong genetic basis and refers to fearfulness and withdrawal in response to novel stimuli (Fox et al., 2005). Parenting practices also have an important influence and include overinvolved or overprotective parenting and harsh or negative interactions (Drake and Ginsburg, 2012). An inhibited temperament is thought to interact with overprotective parenting practices to contribute to the development of child anxiety disorders (Rubin et al., 2009). This occurs when a child's inhibited temperament elicits parental overprotection from anxiety-provoking situations, which inadvertently reinforces child avoidance and fear, and reduces child mastery and confidence in dealing with new situations.

The 'Cool Little Kids' parenting group program aims to intervene early in life to protect children at known risk for anxiety disorders during development (Rapee et al., 2005). The program targets preschool-aged children with high levels of temperamental inhibition. It is

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delivered to small groups of parents and addresses key factors in the development of anxiety problems in young children, such as overprotective parenting, children's avoidant coping styles and parental anxiety. Two randomized controlled trials (RCTs) have demonstrated its efficacy (Rapee et al., 2005; Kennedy et al., 2009). In one study, significantly fewer anxiety diagnoses were detected among intervention than control children three years later (40% versus 69%) (Rapee et al., 2010), with some effects lasting into adolescence (Rapee, 2013). Anxiety symptoms also reduced significantly, with medium-sized between-group effects observed on child-report anxiety ( $d = 0.50$ ) and maternal-report anxiety ( $d = 0.46$ ) at the 3-year follow-up. A second study with a higher-risk sample and slightly more intensive intervention also found significantly fewer anxiety disorders in intervention children compared to controls at the 6-month follow-up (53% versus 93%) (Kennedy et al., 2009). These impressive results suggest that intervening early with a brief program could produce lasting mental health change in children.

A key issue for prevention programs is whether they can be sustainably delivered in the community. Programs should be easily accessible by participants to maximize uptake and retention, and be cost-effective in order to secure continual funding (Andrews and Erskine, 2001). An online version of the Cool Little Kids parenting group program was developed to widen and facilitate access for parents to the program's content. As 93% of Australian families with children have internet access at home (Australian Bureau of Statistics, 2011), the 'Cool Little Kids Online' program could afford greater accessibility and convenience for parents who find it difficult to travel from their homes to attend parenting groups for a variety of reasons (e.g., childcare arrangements and physical health/mobility issues). It could also be a helpful resource for parents who live in areas with limited access to mental health services. Whilst early intervention parenting programs for child externalizing problems have been successfully adapted to online formats (e.g., Sanders et al., 2012), the equivalent online parenting programs for internalizing problems in young children are still rare.

The present study is a pilot evaluation of the Cool Little Kids Online parenting program, which aimed to explore its acceptability to parents and potential efficacy in reducing inhibited young children's anxiety problems. The study also tested two potential program formats (supported and unsupported) and the feasibility of online data collection. It was hypothesized that the program would be rated as useful by parents and associated with significant reductions in child anxiety and emotional symptoms, and improvements in life interference from anxiety.

## 2. Method

### 2.1. Design

This pilot study was an uncontrolled pre-post trial with random allocation to two active intervention arms: clinician support versus no clinician support. At the end of the baseline questionnaire a computer script randomly allocated parents to study arms in a 1:1 allocation (simple randomization). Participants were given 10 weeks to access the Cool Little Kids Online program, after which they were invited to complete the post-questionnaire online. The study was approved by the La Trobe University Human Ethics Committee (14-021) and was registered with the Australian and New Zealand Clinical Trials Registry (ACTRN12614000659606).

### 2.2. Participants and recruitment

Participants were eligible to take part in the study if they were a parent of a child between the ages of 3 and 6 years who was highly inhibited (see Section 2.4.1). Participants were excluded if they were not a resident of Australia or they reported that their child had cerebral palsy, an intellectual disability, or severe autism. Participants without

access to a printer were also excluded, because we believed that program benefits would only be possible if participants could print out the program worksheets that are used in-between modules.

Participants were recruited from preschool services and advertisements on Facebook, Google, and parenting forums. Preschools within three local government areas in the state of Victoria, Australia (selected for a mix of socioeconomic disadvantage level) were asked to help distribute a study flyer to parents of children aged 3 to 6 years at their service. Interested participants visited the study website ([www.coollittlekids.org.au](http://www.coollittlekids.org.au)) for more information about the program and how to join the study. Parents were screened online for eligibility, and if eligible were invited to participate. Parents who gave informed consent continued with the baseline questionnaire. Parents were able to access the Cool Little Kids Online program immediately after completing the baseline questionnaire by creating their own account with a unique username and password.

We aimed to recruit 40 participants (20 per condition) as this would reliably indicate the acceptability of the program and to what degree it is used by participants. This would also give adequate power to detect an effect size of  $d = 0.5$  pre- to post-intervention on anxiety symptoms. Prior studies of group-based programs for parents of anxious young children show within-group effects of this size or greater over a similar time period (e.g., van der Sluis et al., 2012). Fig. 1 shows the flow of participants through the study. During the two month recruitment period, 171 parents were screened for eligibility, with 75 deemed ineligible, primarily due to low child inhibition scores. Eighty-five parents gave consent to participate (88.5%), but only 51 parents completed the baseline questionnaire and hence were fully enrolled in the study (20 randomly allocated to the clinician support condition and 31 to the unsupported condition). Participant characteristics were generally well balanced across the two groups (see Table 1).

The mean age of parents in the sample was 36.0 years ( $SD = 4.7$ ) and the majority were birth mothers (94.1%). The target children ranged in age from 3.5 to 6.8 ( $M = 4.7$ ,  $SD = 0.8$ ), 26 were boys and 25 were girls. The majority (92.2%) lived with both parents and four lived with their birth mother only. This is slightly higher than the Australian average where 84.9% of children aged 0 to 9 years live in two-parent families (Australian Bureau of Statistics, 2011). Of the 51 parents, 2% had a grade 10 education, 12% had a year 12 qualification, 27% had a technical diploma or certificate, 33% had a tertiary degree, and 25% had a postgraduate degree. The majority (98%) spoke mainly English at home. Twenty-one percent reported a household income less than the Australian median of AUD \$75,000 (Australian Bureau of Statistics, 2013). A significant minority (14%) reported possessing a 'Health Care Card', indicating financial difficulty. Sixteen parents (31%) scored moderate or above on any subscale of the Depression Anxiety Stress Scales-21 (Lovibond and Lovibond, 1995). More than half (52.9%) used the internet for 10 or more hours a week.

### 2.3. Program description and development

Cool Little Kids Online contains the same anxiety prevention content as in the 6-session Cool Little Kids parenting group program developed by Rapee et al. (2005), but reorganized to suit an online format. There are 8 interactive online modules that contain a mix of written information, videos, audio narration, interactive worksheets and activities, and parent experiential stories (see Table 2 for a content overview of each module). Development of the online format was informed by formative research with clients of the Emotional Health Clinic, Macquarie University and feedback from participants in the population trial of Cool Little Kids conducted in Melbourne, Australia (Bayer et al., 2011). Online program development was also guided by research on persuasive design elements that maximize adherence (Fogg, 2003; Oinas-Kukkonen and Harjumaa, 2009) and the therapeutic alliance in internet-based interventions (Barazzone et al., 2012).

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