



# Acceptability and Feasibility of Stepped-Care for Anxious Adolescents in Community Mental Health Services: A Secondary Analysis

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## Abstract

Initial research suggests stepped-care approaches to therapy for youth anxiety is associated with reduced therapy time with similar therapeutic outcomes to treatment-as-usual in real-world settings. Research on the acceptability and feasibility of stepped-care approaches in routine practice is very limited. In a secondary analysis of a pilot randomised controlled trial that compared stepped-care to treatment-as-usual in adolescent mental health services, we examine acceptability and feasibility from consumer and clinician perspectives. Fifteen adolescents and ten clinicians provided brief quantitative and qualitative feedback. Some benefits were noted and these related to improved access to treatment; however, major barriers were also noted. Concerns related to the lack of consumer and clinician choice and flexibility in delivery of stepped interventions, challenges engaging adolescents with internet interventions and associated guided telephone calls, and workplace issues. Systemic changes to facilitate consumer preferences, clinician flexibility and staffing are needed for stepped-care to be feasible in routine care.

**Keywords** Anxiety · Youth · Stepped-care · Acceptability · Feasibility

## Introduction

Stepped-care is a health care model in which consumers first receive an evidence-based intervention requiring the least cost, often including less therapist time and specialisation (Step 1), followed, only if clinically indicated, by a more intensive intervention requiring greater cost, usually including increased therapist time and specialisation. In principle because early steps are less costly but still evidence-based, a large portion of consumers will recover with Step 1 interventions and will not need to move to Step 2 (and potentially further steps). Therefore stepped-care is predicted to result in lower cost and greater clinical effectiveness of services. Variations to stepped models include the number of steps, types of interventions, and specialisation of clinicians used

at each step. Stepped-care approaches has been rolled out in adult, and more recently child mental health services in the United Kingdom as part of the Improving Access to Psychological Therapies (IAPT) scheme, and similar stepped-care models have been recommended by the National Mental Health Commission in Australia. Although promising, the effectiveness of stepped models in real world settings has been minimally evaluated in scientific trials [1] with very limited evaluation of the acceptability and feasibility of stepped-care approaches when applied to these settings in which the benefits should be most apparent.

Anxiety disorders are common mental disorders that affect up to 10% of adolescents, are associated with poor academic, social and family outcomes, and the development of depression, substance use, and other mental health disorders [2]. Numerous randomised controlled trials (RCTs) demonstrate good efficacy for cognitive behavioural therapy (CBT) with 60% of children and adolescents free of their primary anxiety disorder post-CBT, and improvements are sustained or increase over time [3]. Computerised and internet CBT (iCBT) with guided therapist support have also been shown to be efficacious in treating child and adolescent anxiety disorders [4, 5], with similar efficacy to face-to-face

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CBT but lower resource requirements [6, 7]. iCBT generally requires less therapist time (around 2–3 h vs 12 h face-to-face) and are potentially more accessible as participants can complete therapy at home. Therefore, CBT approaches that utilise different levels of therapist involvement are ideal for application for treating anxiety disorders in real world settings.

Recently, a stepped-care model for treating child and adolescent anxiety was evaluated against a “gold standard” face-to-face CBT program (*Cool Kids*), among 280 anxious children and adolescents in a randomised controlled trial (RCT) in a University clinic [8]. Step 1 consisted of either internet or telephone-based CBT supported by four phone calls of 30 min duration delivered by 3rd year undergraduate psychology students trained in study procedures. At the end of step 1, 41% of participants did not require further treatment (i.e. after 2 h of low intensity treatment by junior therapists). Step 2 consisted of up to 10 weeks of 1 h manualised face-to-face CBT delivered by registered psychologists. At the end of step 2, 80% of the total sample were no longer in need of assistance. The third step consisted of up to 12 additional one-hour face-to-face CBT flexibility delivered to suit individual needs. By the end of step 3, 90% of the sample were no longer in need of assistance. Overall the findings indicated that at 12 month follow-up the two treatment models did not significantly differ in clinical effectiveness or total cost-effectiveness when three therapy steps were provided; however the stepped-care approach was associated with reduced costs from a societal perspective, meaning less commitments for families [9]. Post-hoc analyses showed that the third step was very costly but provided little additional clinical gains, such that if only the first two steps had been used, therapy would have been delivered requiring only about 2/3 the total therapist time than required by face-to-face CBT while maintaining similar clinical benefits [8]. Given these promising results, stepped-care needs to be evaluated in real world settings which often have long waiting lists as well as poor adherence to clinical guidelines for anxious youth [10, 11].

An initial test of stepped-care in a Child and Adolescent Mental Health Service in the United Kingdom was used to treat an adolescent girl with a primary anxiety problem [12]. The adolescent girl completed computerised CBT followed by face-to-face CBT (*Cool Kids*), and this stepped model was associated with positive feedback from the adolescent, clinician and service. Similarly, a recent naturalistic study conducted in a child mental health service in Sweden evaluated the efficacy of a stepped-care approach applied to non-remitters of internet CBT (iCBT) [13]. After the three-month follow-up evaluating the iCBT program, non-remitters were offered face-to-face treatment and the sample followed for 12 months post-baseline. Although face-to-face therapy post iCBT was associated with further improvements in initial

non-remitters, only 49% of non-remitters agreed to receive the second therapy step possibly demonstrating a limitation of this process in the real world. As this study did not randomise participants, the efficacy, acceptability and feasibility of stepped-care in child mental health services is unknown. Salloum et al. [14] conducted an RCT of a stepped-care CBT intervention for PTSD in children aged 3 to 7 years. Children were recruited from a community mental health agency but were not treated in the community setting. The results demonstrated similar clinical outcomes between conditions, but less therapy time and cost in the stepped-care intervention. Two recent papers examined stepped-care approaches in case studies of children with anxiety or depression in research settings and noted some therapeutic challenges with stepping up and down of cases [15, 16]. Therefore our understanding of the acceptability and feasibility of implementing stepped-care into community settings when run by community service staff is unknown. Given the challenges already noted in these case series and non-randomised studies, and evidence that the uptake of evidence-based practices in community care is slow, further evaluation of the acceptability and feasibility of stepped-care approaches that implement evidence-based interventions in public mental health settings is needed before wide scale implementation.

In Australia, free mental health services are available to all youth aged 12 to 25 years via Headspace centers. In the period July 2013 to June 2014, Headspace centres in Australia provided services to 45,195 young people, of which 18% reported accessing the service due to primary difficulties with anxiety [17]. Waiting times for services vary according to the complaint, but average waiting times to see clinicians for treatment of anxiety is approximately 19 days, although waiting times over four weeks are also noted [17]. As such, implementing stepped-care approaches to treat anxiety in these services has the potential to reduce waiting times as well as increase clinical and cost-effectiveness of services. A recent pilot RCT (n=53), examined the initial clinical and cost effectiveness of a stepped-care approach for treating adolescent anxiety in Headspace centres compared to treatment as usual (TAU) [18]. In consultation with the clinical managers in the adolescent community mental health services in which the stepped-care model would be applied, it was decided to use two therapy steps of CBT based interventions. The first step utilised internet CBT (iCBT) previously shown to be efficacious [5], and the second step utilised an evidence-based face-to-face CBT program [19]. This pilot study found stepped-care was associated with reduced therapist time required to deliver services, with similar clinical and cost benefits. Whilst promising, there were also significant barriers to engagement with iCBT offered in Step 1 by adolescents, and limited uptake of Step 2 face-to-face CBT. Despite enrolling in the trial knowing that they would receive iCBT, four participants refused

to use the iCBT and expressed the desire to wait approximately 10 weeks for the face-to-face component in Step 2, in addition another three adolescents dropped out of iCBT giving the reason that they wanted face-to-face therapy, and engagement with the guided therapy calls that were part of iCBT were low (46% only complied with these calls). Therefore before widespread roll out of stepped-care models into public health services, careful examination of the acceptability and feasibility of stepped-care from the perspectives of adolescents and clinicians are needed to understand barriers to engagement. As such this study reports a secondary analysis of the Wuthrich et al. [18] pilot effectiveness study and focuses on the acceptability and feasibility of the stepped-care approach by examining quantitative and qualitative feedback from clinicians and young people involved in the trial.

## Methods

### Participants

Participants were the adolescents and clinicians who participated in the Wuthrich et al. pilot RCT [18]. In summary, all adolescents who presented to two Sydney-based Headspace centres who were determined at the intake assessment to have anxiety as their main interfering problem were invited to participate. Exclusion criteria included: significant suicidal intent, self-harm, bipolar disorder, psychosis, unsafe family, and illiteracy. Fifty-three adolescents participated in the trial and were randomly allocated to treatment (32 in stepped-care and 21 in TAU). All 53 participants were asked to provide feedback at one-month follow up, and this study reports on the 15 adolescents (9 = stepped-care, 6 = TAU) who provided data at that time. In this sub-sample adolescents (female = 11) were aged between 12 and 18 years old (mean age = 14.49 years, SD = 1.78 years, range = 12.25–17.75 years). Those adolescents that provided feedback did not differ from those that didn't on age, gender, treatment allocation, or baseline self-reported anxiety; however, they were significantly more likely to have received at least one treatment session ( $p < 0.05$ ).

Twenty-five clinicians participated in the full trial at the two sites across time (19 female, 12 in stepped care condition). Of the 12 clinicians who delivered stepped-care, they had the following professions: clinical psychologists ( $n = 2$ ), registered psychologists ( $n = 3$ ), provisional psychologists ( $n = 2$ ), family therapist ( $n = 1$ ), and missing ( $n = 4$ ), and had between one to 14 years professional experience ( $M = 9$  years,  $SD = 8.29$ ). Quantitative data was reported by ten of the twelve clinicians who delivered stepped-care across the trial (83%). Some clinicians completed this survey before the study end as they were leaving the service. All

four clinicians at the stepped-care site available on the day of testing attended the focus group, excluding the managers who had also delivered treatment, noting that many of the twelve staff that had delivered stepped-care over time were no longer working at the service at the time the focus group was conducted.

## Measures

### Demographics

Demographic data for adolescent participants (age, gender, residential postcode, living situation, presenting diagnosis) was extracted from service records as previously reported [18]. In the current study, clinicians reported on gender, years of experience, professional qualifications and job role via an anonymous survey.

### Adolescent Acceptability

At one-month follow-up, all 53 adolescents were sent a text and asked to rate (on a scale of 0, not at all—10, very much) how much: (1) the service assisted them, (2) the service improved their symptoms, and (3) they would recommend the service to others. They were also asked to provide any other free response feedback. In addition, participants in the stepped-care condition rated how much they benefited from iCBT (0 = not at all helpful—10 = extremely helpful). See Table 1.

### Clinician Acceptability and Feasibility

Feedback from all stepped-care clinicians was obtained through an anonymous questionnaire (22 items) assessing potential barriers and benefits. Staff rated the 10 barriers and 9 benefit items on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). See Table 2. A higher score indicated more perceived benefits/barriers. There were 3 open response questions to capture additional barriers, benefits, or suggestions for improvement.

In addition, at the end of the study all clinicians still working at the service allocated to stepped-care were invited to attend a focus group to provide more in depth feedback. Clinical Leads (managers) who also delivered stepped-care did not attend the focus group to allow staff to provide open feedback about service level benefits and barriers. The focus group was audio recorded and themes were extracted independently by two authors (TJ, LM).

### Psychological Intervention

Both the stepped-care and TAU conditions were delivered by the clinicians employed at Headspace. As previously

**Table 1** Adolescent satisfaction with treatment received

Follow-up ratings (0–10)	Stepped-care (n=9)		Treatment as usual (n=6)		Between group differences F (p-value)
	Mean (SD)	range	Mean (SD)	range	
How much the service assisted?	5.56 (2.46)	2–10	6.17 (3.43)	0–10	0.16 (.693)
How much the service improved symptoms?	4.89 (2.37)	1–8	6.00 (3.35)	0–10	0.57 (.463)
How much would you recommend the service?	6.11 (2.42)	2–10	7.50 (2.35)	4–10	1.21 (.291)
How helpful was Chilled Out online?	6.80 (2.17)	5–10	N/A		-
<b>Free response</b>					
<i>Stepped-care (n=4)</i>					
Increased accountability (e.g. more frequent check-in calls) would have improved motivation to complete the program					
Appreciated being able to complete the program at own pace					
Examples were helpful (e.g. when designing personalised stepladders)					
Would have preferred a faster-pace and less manualised approach					
Disappointed with infrequent check-in calls					
<i>Treatment as usual (n=2)</i>					
Helpful for reflecting, recognising emotions, and thinking of helpful strategies					
Satisfied with treatment					

reported, the stepped-care condition involved two Steps. Adolescents first received Step 1, an iCBT program (*Chilled Out*) [20] consisting of eight modules. iCBT was supported by four brief phone calls from the Youth Access Clinicians (Mean duration = 22.94, SD = 7.23, range 8 to 45 min) scheduled to occur in weeks 1, 3, 5 and 8 of the program. At the end of iCBT, intake officers contacted adolescents to discuss their progress and desire to go on to receive face to face treatment (Step 2). Stepping up to Step 2 was a collaborative decision based on the remaining symptoms and participant preferences. Step 2 consisted of up to 10 sessions of face-to-face CBT (*Cool Kids* program) [19] delivered by trained private practitioners or Youth Access clinicians at the service. Parents were encouraged to attend parent sessions to learn skills to assist their adolescent. Clinicians were taught to deliver the Step 1 and 2 programs in a one-day training workshop (by author VW).

Services allocated to TAU followed normal procedures which typically involved some brief consultations with the Youth Access clinicians while adolescents waited for an appointment slot with a private practitioner. Private practitioners saw adolescents for up to ten face-to-face sessions utilising a wide variety of psychological strategies of their choosing. Therapy session content was coded from clinical session notes by the research assistant in December 2019, according to commonly used psychotherapeutic approaches and techniques. Psychological interventions delivered in TAU were predominantly comprised of the following skills (with many sessions combining several skills): supportive counselling (29.1%), cognitive therapy (26.7%), psychoeducation (25.6%), mindfulness (17.4%), behavioural strategies (16.3%), assertive communication (12.8%), Acceptance and

Commitment therapy (11.6%), and parenting (11.6%) as the most common components.

## Procedure

Ethical approval was obtained through the Macquarie University Human Research Ethics Committee and the Northern Sydney Local Health District Human Research Ethics Committee. The trial was registered with the Australian and New Zealand Clinical Trials Registry (Registration number: ACTRN12620000653965). The study was conducted at two Headspace sites, with one site randomly allocated to each treatment condition by the study research assistant using a computer-generated randomisation schedule. Due to the nature of randomisation by site, clinicians and participants were not masked to condition. Clinicians at the stepped-care site were trained in the delivery of the stepped-care intervention. Intake officers notified adolescents who met eligibility criteria and their parent about the study and provided an information and consent form. Following verbal consent from both adolescent and parent, participants were enrolled in the study and received the treatment available at that site. Adolescents were invited to provide feedback via text messages at one-month follow up and were reimbursed \$AU50 via an electronic voucher for completion. At the study completion, clinicians provided feedback on the stepped-care approach via a survey, as well as through focus groups.

**Table 2** Clinicians' ratings on the benefits and barriers to the stepped-care approach including free response feedback

	M	SD	Range (1 = strongly disagree to 5 = strongly agree)
<i>Benefits</i>			
Aided professional development	3.56	1.01	2–5
Provided job variability	3.00	1.05	1–4
Saved time (online program)	2.78	1.30	1–4
Saved time (face-to-face program)	2.89	0.78	2–4
Effective and efficient	3.30	0.68	2–4
Liked by adolescents	2.70	0.68	2–4
Adolescents more engaged	1.90	0.74	1–3
Could be continued in this service	3.50	0.97	1–4
Improvement even for severe/complex cases	2.00	1.00	1–3
<i>Free response</i>			
Helpful CBT training for anxiety (n = 1)			
	M	SD	Range (1 = strongly disagree to 5 = strongly agree)
<i>Barriers</i>			
Required too much training	2.30	0.95	1–4
Difficult to understand	1.90	0.74	1–3
Supervisor did not provide support	2.70	1.49	1–5
Required too much time (online program)	2.89	1.17	1–4
Required too much time (face-to-face program)	2.33	0.71	2–4
Difficulty using a different intervention	2.30	1.06	1–4
Adolescent less engaged	3.40	0.70	2–4
Adolescent benefited less	3.10	0.57	2–4
Unhelpful in this service	2.80	1.03	2–5
Too simplistic for severe/complex cases	3.75	1.26	2–5
<i>Free response</i>			
Adolescents typically want and expect face-to-face treatment at this service not internet (n = 3)			
Limited assistance from management to implement and problem-solve service barriers (n = 2)			
Concerns about offering internet program to severe or complex cases (n = 1)			

## Results

The quantitative ratings provided by adolescents are shown Table 1. Noting the small sample size, preliminary parametric testing indicated no significant differences between groups regarding treatment satisfaction at one-month follow up for how much: (1) the service assisted them,  $F(1,14)=0.163$ ,  $p=0.693$ ; (2) the service improved their symptoms,  $F(1, 14)=0.573$ ,  $p=0.463$ ; and (3) they would recommend the service to a friend,  $F(1, 14)=1.214$ ,  $p=0.291$ , with all means falling in the “neutral” to “agree” satisfaction range (all means 4.89–7.5). For those adolescents who received stepped-care (n = 9), mean ratings suggested they were satisfied (“agree”) with iCBT,  $M = 6.80$ ,  $SD = 2.17$ . Additional free-text feedback outlined further benefits and barriers to stepped-care, including satisfaction

with the self-paced nature of iCBT, but also a desire for more frequent contact with clinicians.

Clinicians provided quantitative data that indicated agreement that benefits of stepped-care included aiding staff development and potential for continuation in the service but disagreed that adolescents were more engaged and that it provided better clinical outcomes. The other potential benefits were listed as neutral. See Table 2. Free responses noted benefits of clinician training in CBT. In terms of barriers of stepped-care, overall clinicians disagreed that it was difficult to understand what to do, required too much training or too much time, with neutral responses for all other potential barriers noted. Free responses noted barriers related to adolescents wanting face-to-face services over iCBT, concerns about offering iCBT to severe cases, and difficulties with service implementation of the stepped-care approach.

**Table 3** Clinician feedback from the focus group conducted at the Stepped-care site

Issue	Comments
Difficulty conducting telephone sessions	<ul style="list-style-type: none"> <li>Difficulty making contact</li> <li>Clients often in public</li> <li>Clients less committed to keeping appointments</li> <li>Limited answers/responses from clients (dissatisfying for clinicians)</li> <li>Required significant administration time</li> <li>Concerns about not being able to build rapport with adolescents over the telephone</li> </ul>
Experiences with stepped-care approach	<ul style="list-style-type: none"> <li>Clinicians preferred to give clients a choice (uncomfortable forcing clients to start with online)</li> <li>Clinicians suspected that clients were not completing online modules</li> <li>Clinicians appreciated the flexibility of choosing content in step 2</li> <li>Believed clients preferred face-to-face treatment</li> <li>Difficulties engaging participants in stepped-care that were not self-motivated (i.e. referred by parents)</li> <li>Clients were often ahead or behind on modules</li> </ul>
Experiences with manualised program	<ul style="list-style-type: none"> <li>Clinicians mostly adhered to the program, but deviated in discussions to increase client engagement</li> <li>Clinicians felt restricted by manualised content</li> <li>Clinicians believed that implementing manualised program would eventually get boring</li> <li>Clinicians felt program did not always target underlying/core problems</li> <li>Clinicians believed the program was more suitable for specific phobias but less suitable for social anxiety</li> </ul>
Difficulties at a service level	<ul style="list-style-type: none"> <li>Required additional administration procedures</li> <li>Required more assigned time to deliver the program</li> <li>Required step 1 clients to be accounted for in caseload</li> </ul>
Suggestions for improvement	<ul style="list-style-type: none"> <li>Addressing service level difficulties first</li> <li>Video calls to increase accountability</li> <li>Dedicated clinician (or rotating roster) to implement the program</li> <li>Option for group delivery format</li> <li>Automated reminders for telephone appointments</li> <li>Longer calls to increase commitment</li> <li>Greater flexibility in program delivery</li> </ul>
Value of program and future use	<ul style="list-style-type: none"> <li>Additional option for clients</li> <li>Valuable for rural clients</li> <li>Useful for clients on waiting list</li> <li>Supplementary resource to treatment as usual</li> </ul>

*Note* The focus group was conducted in December 2019. There were 4 clinicians present

Feedback from the clinician focus group identified a limited number of benefits but many significant barriers. The benefits related to: being able to assist rural and remote adolescents who couldn't attend face-to-face therapy (through iCBT), the ability to offer the program to adolescents on waiting lists, and potential usefulness of iCBT as a supplement to face-to-face treatment (see Table 3). Clinicians also reported extensive barriers that can be summarised as relating to: a desire for face-to-face treatment options in Step 1, lack of treatment flexibility in stepped-care, and workplace issues. Firstly, they reported significant discomfort with using the stepped-care approach that required adolescents to complete iCBT before face-to-face therapy. Clinicians reported a strong preference that adolescents should be able to choose whether they wanted iCBT or face-to-face treatment. Clinicians reported a number of adolescents had refused to participate in iCBT or had dropped out of iCBT due to a preference for face-to-face. Clinicians also reported barriers related to the guided telephone calls component of iCBT as adolescents infrequently answered or returned calls,

difficulties building rapport with clients over the telephone, and that calls were too short to discuss client progress. Staff suggested improvements to stepped-care delivery that included options to use video calls for guided therapist calls or replacing iCBT with group face-to-face CBT at Step 1.

Secondly, clinicians reported difficulty using the structured CBT approach for stepped-care delivery and a concern that it would lead to clinician boredom. They also reported: a strong preference to deviate from the manuals to include other skills that they felt were more relevant for their clients, concerns that the CBT skills in Step 1 and Step 2 were not sufficient to address the underlying causes of the adolescent's anxiety, and that the focus on CBT would not lead to lasting therapeutic change.

Finally, clinicians reported barriers related to service factors. This predominantly related to the work allocation structure that wasn't set up for stepped-care delivery, and that the repeated attempts to contact adolescents for scheduled telephone calls was time consuming and not part of their workload. Staff suggested that to enable sustained delivery

of stepped-care, services would need to employ dedicated clinicians allocated to stepped-care intervention delivery.

## Discussion

Stepped-care models of mental health service delivery have been shown to be clinically efficacious with some cost benefits when applied in controlled trials in university clinics [8]. The current study is a secondary analysis of a pilot study [18] that found initial evidence that stepped-care provided similar clinical effectiveness with some cost savings when applied to the treatment of adolescent anxiety in community mental health services. However, in that study, adolescent engagement with stepped-care was less than optimal. The current study therefore examined the feasibility and acceptability of stepped-care in these services with consideration of the likely ongoing implementation of stepped-care into routine practice. Overall feedback from adolescents and clinicians was mixed, with some benefits of the stepped-care approach reported; however, the majority of feedback identified significant barriers that will need careful consideration before stepped-care can be routinely applied in services.

Staff reported reservations about the structured nature of the stepped-care intervention that required adolescents to start with iCBT before face-to-face treatment. Staff reported a strong desire that clients should be able to *choose* the method of help they received, i.e. iCBT or face-to-face. This preference corroborates the finding in the main trial [18] that some participants refused iCBT and others dropped out of iCBT due to a desire for face-to-face therapy. Our findings also align with findings of broad public dissemination of iCBT (unguided) that found 22% did not open the first therapy module and 48% only completing the first one to two modules [21]. These findings suggest that engagement in iCBT in real-world settings might be better if low intensity face-to-face options are offered at Step 1 (e.g. group therapy), or if participants can choose between therapy modalities (iCBT or face-to-face), and if alternative treatment options are presented if participants don't clinically respond after initial sessions. Although this has not been tested empirically, it is possible that a lack of matching of treatments to patient preferences could increase disillusionment with therapy and this needs to be considered in future trials. Whilst clinical trials conducted in university clinics have reported few dropouts from iCBT [6–8], those participants consented to participate in a research trial knowing that iCBT was part of the treatment package and could have readily sought help elsewhere. In the settings used in the current study, all adolescents with anxiety who presented to the service received stepped-care (they consented to provide their data to the researchers or not but that did not change the treatment they were offered). As such although adolescents

were aware of the treatment package before enrolling in the trial, these participants were more vulnerable as they had limited options of where else they could seek assistance at no cost, and therefore had limited choice about engaging with iCBT. This suggests potential differences in acceptability and feasibility when stepped-care is routinely applied without consumer or clinician choice.

Both staff and adolescents reported dissatisfaction with the guided telephone calls aimed to support iCBT use, and this primarily related to lack of engagement by adolescents. Aligned with data from the main trial that indicated poor engagement with the guided telephone calls, clinicians reported adolescents frequently did not answer or return telephone calls, and that even when adolescents did answer calls, adolescents found the timing of calls was often inconvenient as they were reluctant to talk when out in public. This lack of engagement with guided telephone calls is problematic as evidence indicates greater clinical benefits for guided vs unguided iCBT [22]. Clinicians recommended alternative approaches to guided support might include scheduled “chat” via social media. Some free response feedback from adolescents also reported dissatisfaction with telephone calls, although their dissatisfaction related to a desire for more contact. It is not clear if social media chat would have been preferred. Together the results suggest routine delivery of iCBT in community settings as a forced alternative to face-to-face interventions may be more effective when alternative methods for providing guided support are used, or iCBT is used as an adjunct to face-to-face treatment.

Further barriers to acceptability related to clinician attitudes. Although staff received training and research evidence demonstrating the efficacy of the Step 1 and Step 2 CBT interventions with previously complex cases, some reservations remained. Despite evidence to the contrary, clinicians reported concerns that manualised interventions restricted the individualization needed with complex cases, as has been reported previously [23]. The wide range of treatment modalities utilised in the TAU condition highlights therapists' preferences for flexibility in choosing treatment components, as well as the lack of domination of CBT in this context. This may be related to the interdisciplinary nature of treatment delivery in these services, but still poses a significant problem with integrating evidence-based practice and highlights the importance of increasing training and engagement of participants and therapists in evidence-based practice using current clinical guidelines [10], before stepped-care of CBT can be broadly implemented.

Whilst theoretically the stepped-care program employed in this study (using empirically validated iCBT, followed by face-to-face CBT) should have been acceptable to consumers and staff, the results clearly demonstrate that acceptability and feasibility was less than ideal. The results of this study

suggest acceptability might be increased by incorporating patient and staff preferences (and service level resources) enabling them to *choose* from a suite of evidence-based intervention. In order to get the cost benefits associated with stepped-care, any choice in interventions would need to be limited to choice within therapy steps, that is consumers would still need to access less costly therapy steps in the first instance. Given strong preferences for face-to-face alternatives to iCBT may be needed at Step 1, such as group CBT, or iCBT supplemented with limited face-to-face sessions to practice skills.

There are several study limitations that need to be considered. Most significantly only a limited number of adolescents provided data on acceptability and feasibility, despite a significant reimbursement for completion (\$50 AUD). As such the findings may not be generalisable. Participants who did not engage in therapy at all after study enrollment were significantly less likely to provide feedback and so barriers related to their engagement are missing and this is a significant gap. Future studies should seek feedback from all participants immediately after treatment ends or after dropout so that all perspectives are captured. Due to the small sample size this study was underpowered to detect significant differences in satisfaction between treatment groups. Further, qualitative feedback from adolescents was limited to free response options and focus groups might have been preferable (although the brief feedback option had been initially designed to increase engagement with feedback). Also the number of clinicians who attended the focus groups was limited, although this was due to some staff having left the service, some staff not working on the day of the focus group, and managers not attending to enable feedback to be given without fear of consequences. Despite the limitations and preliminary nature of the study, the results have implications for the implementation of stepped-care interventions for treating anxiety as well as related conditions that often overlap with anxiety.

## Summary

This study examined the acceptability and feasibility of implementing stepped-care treatment for adolescent anxiety in routine mental health care services in a secondary analysis of a pilot randomized controlled trial. Both adolescents and clinicians reported a strong desire for more flexible treatment approaches matched to adolescent presentations and preference, as well as better compatibility with existing service processes. Some of these barriers could be addressed by changes in staffing models, enabling choice of interventions used from a suite of evidence-based options in each therapy step, and allowing some flexibility in the modality that

treatment is presented. Barriers related to clinician attitudes and resistance to employing evidence-based and manualized interventions is more challenging and requires retraining across the sector. More research is needed to understand how to overcome barriers before broad implementation into services, with careful consideration of approaches to maximise treatment adherence to evidence-based practice.

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## Declarations

**Conflict of interests** Dr Wignall worked as the Service Manager of one of the Child & Youth Mental Health Services. She was not involved in treatment of participants. The other authors declare that they have no conflicts of interest.

## References

1. McLellan LF, Schniering C, Wuthrich V (2021) Service organizations: stepped-care. In: Bennet S, Myles-Hooton P, Schleider J (eds) *Low intensity interventions for children and adolescents*. Oxford University Press, Oxford
2. Rapee RM, Schniering CA, Hudson JL (2009) Anxiety disorders during childhood and adolescence: origins and treatment. *Annu Rev Clin Psychol* 5:311–341
3. Higa-McMillan CK, Francis SE, Rith-Najarian L, Chorpita BF (2016) Evidence base update: 50 years of research on treatment for child and adolescent anxiety. *J Clin Child Adolesc* 45(2):91–113. <https://doi.org/10.1080/15374416.2015.1046177>
4. Bennett SD, Cuijpers P, Ebert DD, McKenzie Smith M, Coughtrey AE, Heyman I, Manzotti G, Shafran R (2019) Practitioner review: unguided and guided self-help interventions for common mental health disorders in children and adolescents: a systematic review and meta-analysis. *J Child Psychol Psychiatry* 60:828–847. <https://doi.org/10.1111/jcpp.13010>
5. Wuthrich VM, Rapee RM, Cunningham MJ, Lyneham HJ, Hudson JL, Schniering CA (2012) A randomised controlled trial of the Cool Teens CD-ROM computerized program for adolescent anxiety. *J Am Acad Child Adolesc Psychiatry* 51:261–270
6. Rapee RM, Lyneham HJ, Wuthrich V, Chatterton M-L, Hudson JL, Kangas M, Mihalopoulos C (2020) Low intensity treatment for clinically anxious youth: a randomised controlled comparison against face-to-face intervention. *Eur Child Adolesc Psychiatry*. <https://doi.org/10.1007/s00787-020-01596-3>
7. Spence SH, Donovan CL, March S, Gamble A, Anderson RE, Prosser S, Kenardy J (2011) A randomized controlled trial of online versus clinic-based CBT for adolescent anxiety. *J Consult Clin Psychol* 79:629–642
8. Rapee RM, Lyneham HJ, Wuthrich VM, Chatterton M-L, Hudson JL, Kangas M, Mihalopoulos C (2017) Comparison of stepped-care delivery against a single, empirically validated CBT program for anxious youth: a randomized clinical trial. *J Am Acad Child Adolesc Psychiatry* 56:841–848
9. Chatterton M-L, Rapee RM, Catchpool M, Lyneham HJ, Wuthrich V, Kangas M, Mihalopoulos C (2019) Economic evaluation of stepped-care for the management of childhood anxiety disorders: results from a randomised trial. *Aust N Z J Psychiatry* 53:673–682



10. Creswell C, Waite P, Cooper PJ (2014) Assessment and management of anxiety disorders in children and adolescents. *Arch Dis Child* 99:674–678. <https://doi.org/10.1136/archdischild-2013-303768>
11. Whiteside SPH, Deacon BJ, Benito K, Stewart E (2016) Factors associated with practitioners' use of exposure therapy for childhood anxiety disorders. *J Anxiety Disord* 40:29–36. <https://doi.org/10.1016/j.janxdis.2016.04.001>
12. Wuthrich VM, McLaughlin N (2015) Application of the cool teens computerized CBT program with an anxious adolescent in a community mental health center. *Contemp Behav Health Care* 1:28–32
13. Jolstedt M, Vigerland S, Mataix-Cols D, Ljótsson B, Wahlund T, Nord M, Högström J, Öst L-G, Serlachius E (2020) Long-term outcomes of internet-delivered cognitive behaviour therapy for paediatric anxiety disorders: towards a stepped-care model of health care delivery. *Eur Child Adolesc Psychiatry*. <https://doi.org/10.1007/s00787-020-01645-x>
14. Salloum A, Wang W, Robst J, Murphy TK, Scheeringa MS, Cohen JA, Storch EA (2016) Stepped care versus standard trauma-focused cognitive behavioral therapy for young children. *J Child Psychol Psychiatry* 57:614–622. <https://doi.org/10.1111/jcpp.12471>
15. March S, Donovan CL, Baldwin S, Ford M, Spence SM (2019) Using stepped-care approaches within internet-based interventions for youth anxiety: three case studies. *Internet Interv* 18:100281. <https://doi.org/10.1016/j.invent.2019.100281>
16. Kennedy SM, Lanier H, Salloum A, Ennenreich-May J, Storch EA (2021) Development and implementation of a transdiagnostic, stepped-care approach to treating emotional disorders in children via telehealth. *Cogn Behav Pract* 28:350–363. <https://doi.org/10.1016/j.cbpra.2020.06.001>
17. Hilferty F, Cassells R, Muir K, Duncan A, Christensen D, Mitrou F, Gao G, Mavisakalyan A, Hafekost K, Tarverdi Y, Nguyen H, Wingrove C, Katz I (2015) Is headspace making a difference to young people's lives? Final Report of the independent evaluation of the headspace program (SPRC Report 08/2015). Social Policy Research Centre, UNSW Australia, Sydney
18. Wuthrich VM, Rapee RM, McLellan L, Wignall A, Jagiello T, Norberg M, Belcher J (2021) Psychological stepped care for anxious adolescents in community mental health services: a pilot effectiveness trial. *Psychiatry Res*. <https://doi.org/10.1016/j.psychres.2021.114066>
19. Rapee RM, Lyneham HJ, Schniering CA, Wuthrich V, Abbott MJ, Hudson JL, Wignall A (2006) The Cool Kids® child and adolescent anxiety program therapist manual. Centre for Emotional Health, Macquarie University, Sydney
20. Lyneham HJ, McLellan LF, Cunningham M, Wuthrich V, Schniering C, Hudson JL, Rapee RM (2014) ChilledOut online program. Centre for Emotional Health, Macquarie University, Sydney
21. March S, Spence SH, Donovan CL, Kenardy JA (2018) Large-scale dissemination of internet-based cognitive behavioral therapy for youth anxiety: feasibility and acceptability study. *J Med Internet Res* 20(7):e234
22. Baumeister H, Reichler L, Munzinger M, Lin J (2014) The impact of guidance on Internet-based mental health interventions: A systematic review. *Internet Interv* 1:205–215. <https://doi.org/10.1016/j.invent.2014.08.003>
23. Evans-Lacko S, Jarrett M, McCrone P, Thornicroft G (2010) Facilitators and barriers to implementing clinical care pathways. *BMC Health Serv Res* 10:182. <https://doi.org/10.1186/1472-6963-10-182>

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