

Abstract

Objective: To investigate the feasibility of implementing an existing empirically based acceptance and commitment therapy program for children with anxiety-"ProACTive"-tailored to school children. The purpose of the pilot study was to guide the planning of a larger scale more comprehensive investigation.



8. Mindfulness practice, assertive communication, in-session exposure related to fear ladders	Shorten activity 38 (worry wave). Activity 41 (becoming assertive) commence for 10 minutes and parents complete with child at home. Activity 42 (using "I" statements for assertiveness) by acting out each role play in one of the three ways (assertive, aggressive, passive) not all three for each example
9. Mindful breathing practice, coping with teasing, review of progress, in-session exposure	Activity 44 (dealing with teasing) just do one role play
10. Friendly wishes meditation, reviewing goals, focus on values and guiding action, planning for the future, dealing with setbacks and celebrating success	Activity 46 (friendly wishes meditation) shorten to a few minutes. Activity 49 (proud moments) ask parents to complete in advance and email to facilitator.

Modifications to program: Details of the original ProACTIVE program and the modifications made to it in order to accommodate school constraints (e.g. a 1 hour session, and that parents were not attending sessions) are shown in Table 1. Generally, modifications included reducing the length of mindfulness exercises, and starting children with activities in session and asking parents to assist their child complete them at home. In order to facilitate communication with parents, weekly letters were sent home *via* children and email. Content included a summary of the session that week as well, activities to assist their child complete that were commenced in session, and suggestions to assist their child consolidate their learning. Each week parents were reminded of the availability of the Chief Investigator and their facilitators to answer any queries.

Outcome measures

Feasibility and acceptability: We developed a questionnaire to be completed by school counselors online *via* Survey Monkey [19]. This survey (see Appendix 1) was adapted from a feasibility questionnaire used by other colleagues in our Department evaluating the feasibility of a social skills school program for autism [20]. We piloted this survey on school counselors who have previously undergone ProACTIVE training and implemented the program, and the survey answered our questions as well as not being burdensome on the counselors in terms of their time.

Mental health outcome measures: The Pediatric Anxiety Rating Scale (PARS) [21]: Is a clinician-administered instrument that assesses the frequency, severity, and impairment of common pediatric anxiety disorders and has been used as a primary outcome measure in several landmark treatment trials (see below for further information). It is used to rate the severity of anxiety in children and adolescents, ages 6 to 17 years. The clinician elicits information from both the child and parent, resulting in a child, parent and clinician rating. The PARS has two sections: The symptom checklist and the severity items. The symptom checklist is used to determine the child's repertoire of symptoms during the past week. The 7-severity item is used to determine severity of symptoms and the PARS total score. The PARS has been found to have high interrater reliability, adequate test-retest reliability, and fair internal consistency. Convergent and divergent validity are satisfactory [21]. Only five of the seven global items were used for the PARS in this study (PARS5). This is in keeping with most research studies that exclude the item assessing symptom count and the physiological symptom severity item given potential overlap with side effects from psychotropic pharmacotherapy (e.g. selective serotonin reuptake inhibitors) in children [22]. As a screening instrument, a cut-off score of 11.5 on the PARS5 has been found to effectively distinguish youth with an anxiety disorder and those without [22]). Optimum cut-off scores of 11.5 (5-item total score) and 17.5 (7-item total score) Based on the findings of Johnco et al. [23], our findings, a 15%-20% reduction in symptoms on the PARS5 optimally predicted treatment response [23]. Johnco et al. [23] found that optimal prediction of treatment response based on gold standard criteria was achieved at 15%-20% reduction in symptoms on the PARS5. A 25% reduction in symptoms on the PARS5 or a post treatment raw score cut-off of 9 optimally predicted remission status.

The Spence Children's Anxiety Scale (SCAS) [24] was used to assess child-and parent-reported anxiety symptoms. This measure contains 38 items that load on a single factor range from 0 to 114. Internal consistency and retest reliability are good [24]. The measure distinguishes anxious and nonclinical

children and has adequate convergent and discriminate validity.

The Child Anxiety Life Interference Scale (CALIS) [25]. The CALIS is a self-report measure that assesses life interference across school, family, peers/friendships, and physical health. Items are rated on a 5-point Likert scale from not at all to all the time. There is a child (CALIS-C) and parent form, the latter having two subscales of child (CALIS-P) and family (CALIS-F) interference. Test-retest reliability has been established as moderate ($r=.66-.87$) and intraclass correlations($r=.38-.74$) acceptable. Reliability estimates were found to be good at 0.80, and convergent validity has been established.

Screening only: The Child Depression Inventory Short-Form (CDI-S) [26] is a 10 item self-rated scale suitable for youths aged 7 to 17. The CDI:S was developed to provide a psychometrically sound way to quickly screen children for depressive symptoms. The CDI:S can be used when a quick screening measure is desired, when the examiner's time with the child is limited, or other similar situations. It has well established validity and reliability. CDI-S: Child Depression inventory (brief). This tool was only used as a screening tool to indicate if severe depressive symptoms were present. Children with major depression and active suicidality would then be referred to another program.

Quantitative results of pilot program: As seen in Table 2, all outcome scores showed improvements according to child and parent scores. No child in the pilot study had CDI scores indicative of severe depressive symptoms.

CALIS

Of particular note is improved quality of life as evidenced by reduced interference by anxiety in the child and family's life (CALIS) scores. Child self-reported CALIS scores reduced by 50% from a mean score of 11.2 to 5.1, indicating movements from clinically significant anxiety life interference to only mild levels of life interference, with improvements maintained at the 6-month follow up. Parent reports of anxiety-related life interference for their child indicated reduction of 37% (15.8 down to 10), whilst the family impact score indicated reductions in interference by 56%, moving from a mean of 9.6 to 4.8, maintained at the 6 month follow-up with a slightly lower reduction in interference, meaning the child's anxiety interfered at low levels on the family's quality of life post and 6 months post (mean 3.3).

SCAS

The mean pre SCAS scores of 34.9 represents a borderline clinical cut-off of 35 (SD 12.87) for both girls and boys combined [27]. Post mean scores of approximately 23 indicated anxiety symptom scores within the normal range, representing a 33% symptom reduction. Further reductions occurred at the 6 month follow up, with scores reduced by almost 50% compared with pre-scores. Table 1 shows similar results for the SCAS parent report, with mean scores reducing from 30.3 to 20.1, representing a one third reduction, with a slight increase to 24 at 6 months post-treatment. This increase at 6 months post is not a clinically meaningful difference.

PARS

Regarding the PARS, measures were only available pre and post, as a decision was made further down the study that the PARS was too burdensome and therefore not feasible as an outcome measure for school counselors. PARS pre to post means indicated reductions in scores, with child self-reports moving from a mean of 9.9 to 6.9, parents 10.3 to 7.1 and composite 10.3 to

7.5. All mean PARS scores indicate a movement from the clinical to non-clinical cut-off of 9; in addition, they represent a reduction of 33%, 31% and 27%, which according to Johnco et al. [23] represent a positive treatment response.

Feasibility and acceptability outcomes

Facilitator feedback: The responses from the three school counselors regarding piloting the program were highly positive overall, with only a few recommended changes.

All counselors indicated that participants and their families were all willing to participate, with numbers filling up very quickly once invitations were made. Counselors were also very willing, so much so, that limits needed to be placed on schools as the study was not able to cater for all schools in the larger study at the same time. All counselors felt the size of the groups (6-8) and length of session (1 hr.) were “just right” for the program. They were satisfied with the amount of support received from both the school and the research team. They found the activities engaging, refreshing, and fun for the children. They thought the children’s group dynamic worked well, but it needed a co-facilitator (2 therapists per group) to facilitate it effectively. One counselor recommended that teachers also be trained in ProACTIVE to facilitate the children using some of the skills in the classroom. Another counselor’s perception was that some of the activities were too long; in particular, some of the mindfulness activities and session on fear ladders. All three counselors saw ProACTIVE as potentially being an effective preventative program for students without an anxiety disorder diagnosis.

Regarding challenges, all counselors reported that running the program in the final term of the year was challenging, due to the multiple activities occurring in the school curriculum at that time of year. It was also difficult to fit the 10 week program into the school term. However, allowing an extra two weeks towards the end of the term to practice the skills and then complete the program at the start of the next term was also seen as a potential positive. All counselors reported it was difficult to adequately cover fear ladders for each child as parents were not present and there were only two school counselors at each session. It was suggested that parents actively be encouraged to assist out of session prior to the first fear ladder session by working with their child to create scaffolding for a fear ladder, or at least have specific anxieties in mind to work on.

Parent feedback: Parent responses from the 16 parent representatives were overwhelmingly positive. Common themes were that the children learned helpful strategies to manage their anxiety, “My child tends to be difficult when bothered by something. Now he has more constructive ways to express and control how he feels” (P1).

Several parents also commented how their child seemed easily engaged and enjoyed the program, and reported having a great deal of fun. Parents also commonly reported that their child’s confidence and self-esteem were improved: “I enjoyed the confidence it gave my child to use the strategies” (P2). In addition to learning how to face and manage their fears, several parents noted that the mindfulness component assisted their child to regulate their emotion “my child responded very well to the mindfulness activities” (P3). Other noted how helpful the program was in encouraging their child to express their problems “She was comfortable to share her issues with another friend” (P4).

Another benefit of the program commonly reported was that their child no longer felt alone in their anxiety, and found it comforting that others had similar experiences and problems “The group being run at school helped my child realize that there were many other kids who struggled with anxiety” (P5). Whilst one parent reported it a concern that their child had become more aware of their worries, another reported it a benefit, as increased insight enabled them to learn how to manage their anxiety rather than being stuck in the experience. The positive aspect of integrating social skills and problem solving into an ACT program was also noted.

Regarding negatives, some practical issues included parents having to remember/remind their child to pack the child’s workbook each week and keep it clean. Often counselors had to photocopy pages in the workbook that day to compensate. Towards the end of the program leaving workbooks at school was trialed, but this meant limited opportunities for parents to assist child practice skills and know more about what had been covered in the program. Every attempt was made to keep parents informed, with letters sent home each week outlining what had been covered in session and practice tasks to complete in between sessions. One parent felt they should receive more updates-however, each week the coordinator sent out reminders to parents that they were welcome to contact the facilitator or the coordinator of the program for any queries. One parent noted they didn’t feel their child had her real concerns

addressed due to her shyness: " I think my child was still too shy to discuss things that she needed to work on i.e. talking to teachers..."(P6). Another parent commented that her child felt uncomfortable when other students asked her where she had been/was going to when the session were on: "It was challenging integrating back to normal day-explaining to others where she had been" (P7). The discomfort was also noted by another parent: "He actually felt embarrassed going" (P8).

validity is limited due to lack of random assignment of schools or students. Also, we selected schools interested in the program, that were also ready to participate in our study. To test the generalizability of the intervention larger scale studies should extend to a greater diversity of schools. Similarly, future research should extend to a broader set of school counselors/facilitators, assessing intervention fidelity. Our study also used a small set of self-report measures, and there were concerns about the feasibility of continuing the interview component of outcomes (PARS) due to the drain on resources it might pose for counselors in the future and well as pragmatic aspects of time to organise and conduct interviews. Findings are limited by the small sample size limiting generalizability to other settings.

Implications for research, policy and practice

To our knowledge this is the first study to test the feasibility of an ACT program for children and adolescents with anxiety disorder in schools. The next phase of work involves an appropriately designed, pragmatic randomised/quasi randomised controlled trial, with follow-ups, powered to examine key processes and outcomes that pay close attention to generalizability. Although schools-based interventions can sometimes be implemented as a result of short-term policy or "flavour of the month" innovations, interventions that demonstrate acceptability, efficacy, cost-effectiveness and potential for implementation are most likely to be sustainable. This feasibility study is the first step towards evaluating ProACTIVE in schools and provides preliminary evidence of acceptability and efficacy. Findings of the next phase will be reported when completed.

References

1. Fazel, Mina, Hoagwood Kimberly Eaton, Stephan Sharon and Ford Tamsin. "Mental Health Interventions in Schools in High-Income Countries". *Lancet Psychiat* 1(2014):377-387.
2. "Improving the Mental and Brain Health of Children and Adolescents". World Health Organization 2020.
3. Lawrence, David, Johnson Sarah, Hafekost Jennifer and Haan Katrian Boterhoven De, et al. "The Mental Health of Children and Adolescents". Report on the Second Australian Child and Adolescent Survey of Mental Health and Wellbeing. (2015).
4. Armbruster, Paula. "The Administration of School-Based Mental Health Services". *Child Adolesc Psychiatr Clin N Am* 11(2002):23-41.
5. Murphy, Michael J, Madelaine Abel, Hoover Sharon and Jellinek Michael, et al. "Scope, Scale, and Dose of the World's Largest School-Based Mental Health Programs". *Harv Rev Psychiatry* 25(2017):218-228.
6. Stallard Paul. "School-Based Interventions for Depression and Anxiety in Children and Adolescents". 16(2013):60-61.
- 7.