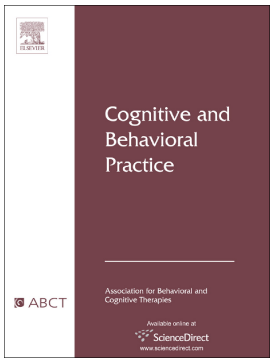

Intolerance of Uncertainty–Focused Treatment for Adolescents With Excessive Worry: A Pilot Feasibility Study

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Intolerance of Uncertainty–Focused Treatment for Adolescents With Excessive Worry: A Pilot Feasibility Study

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Abstract

Bouts of excessive worry are common across the lifespan, increasing in frequency and complexity during adolescence and adulthood, and are found in several psychiatric disorders, particularly the anxiety disorders. There are evidence-based treatments for adolescents with anxiety disorders but psychological treatments designed specifically to target excessive worrying in adolescents are rare. Intolerance of uncertainty (IU), a cognitive predisposition described as a fear of the unknown, is highly associated with worry among adolescents. This study investigated the feasibility, acceptability, and preliminary efficacy of IU-focused cognitive behavioral therapy (IU-CBT) for adolescents with excessive worry. Twelve participants (aged 13–17 years) with excessive worry, irrespective of psychiatric diagnosis, were provided weekly face-to-face sessions, primarily including therapist and self-guided exposure to situations involving uncertainty. Sessions were supplemented with an internet-delivered educational program for parents, designed to teach parents about worry, IU and helpful parental behaviors. The main outcome measure was the Penn-State Worry Questionnaire for Children (PSWQ-C). The treatment was well tolerated with no dropouts and families reporting being satisfied with the treatment. Participants were able to grasp the notion of IU and its relationship to worry and avoidance. Significant reductions were observed for self-reported worry, anxiety, depression, IU, and parent-reported worry, as were significant increases in global functioning. Based on a clinician rating, 58.3% were categorized as much or very much improved at posttreatment, rising to 66% at 3-month follow-up. Participants with generalized anxiety disorder (GAD) benefitted more from treatment than those with social anxiety disorder. The findings suggest that this IU-focused psychological intervention is acceptable and feasible to adolescents with excessive worry but may be most effective for those with GAD.

Keywords: worry; generalized anxiety disorder (GAD); adolescents; intolerance of uncertainty (IU); CBT

Worry, defined as anticipatory cognitions about potential future threats, is a prevalent phenomenon across the life span. Worry is common in early childhood and increases in frequency and complexity during later childhood and adolescence (Bell-Dolan, Last, & Strauss, 1990; Muris, Meesters, Merckelbach, Sermon, & Zwakhalen, 1998; Muris, Merckelbach, Meesters, & van den Brand, 2002; Orton, 1982). Although worries are common in individuals without psychiatric disorders and may help the individual prepare for future negative events, they can become frequent, difficult to control, highly distressing, and interfere with functioning (i.e., excessive). Excessive worry about two or more situations is the characteristic feature of generalized anxiety disorder (GAD) but situationally bound worry is also common in social anxiety disorder (SAD), separation anxiety disorder (SEP), panic disorder (PD), agoraphobia, obsessive-compulsive disorder (OCD) and posttraumatic stress disorder (PTSD) (American Psychiatric Association, 2013). Excessive worry, often as part of an anxiety disorder, is also extremely common in individuals with depressive disorders (Kessler, Sampson, Berglund, & Gruber, 2015; Merikangas et al., 2010). As excessive worry increases during adolescence and is a key component in many mental health conditions, effective early-life interventions that target this cognitive process are clearly needed.

The most commonly tested CBT program for child and adolescent anxiety is the Coping Cat (Kendall, 1994) and variations of this approach, which are aimed at youth with multiple anxiety disorders. Treatment is comprised of psychoeducation, followed by training in coping skills (e.g., relaxation and cognitive restructuring), exposure to feared situations, and includes parallel parent interventions. A primary focus of the program is to help the child to overcome avoidance of feared situations and to better regulate their own emotions. The primary outcome measures in studies of the Coping Cat are a composite index of diagnostic

severity/status and scores on child self-report measures of anxiety but not worry (James, James, Cowdrey, Soler, & Choke, 2015). While these programs are known to be of benefit to children and adolescents with anxiety disorders and to achieve a significant reduction in anxiety symptoms broadly, on average 40% of patients do not achieve remission from any anxiety disorder (James et al., 2015). A meta-analysis of treatment outcomes following group-based CBT similar to the Coping Cat for children and adolescents with anxiety disorders (Hudson et al., 2015) found that remission rates for these disorders vary and that many patients still meet criteria for their primary diagnosis after treatment (remission rates at posttreatment were 22% for SAD, 42% for SEP and specific phobias, 52% for GAD and 57% for OCD). Thus, there is room for improvement of treatment efficacy across the anxiety spectrum.

One approach to supplementing the existing CBT protocols for pediatric anxiety could be to target specific psychological processes that are common in the anxiety disorders, such as excessive worry. Only a handful of studies have investigated treatment specifically targeting worry in youth. Of the worry-focused treatment approaches that have been successfully adapted for use with children and adolescents, several draw upon models where intolerance of uncertainty (IU) and worry-related appraisals are said to play a central role in the maintenance of excessive worry and GAD (Dugas, Gagnon, & Ladouceur, 1998; Wells, 1995). The first test of a treatment specifically designed to target excessive worry in adolescents was a case series involving seven older adolescents (aged 16–18 years) with a primary diagnosis of DSM-IV GAD (Léger, Ladouceur, Dugas, & Freeston, 2003). The treatment was based on the Dugas et al. (1998) model of excessive worry/GAD and used (primarily) worry awareness training, exposure to uncertainty and worry content, and cognitive restructuring to target four putative mediators of worry: intolerance of uncertainty (IU), cognitive avoidance (CA), positive beliefs about worry (PBW), and negative problem orientation (NPO). The treatment

was provided one-to-one with the adolescent with no separate interventions for parents. Six of the seven adolescents completed treatment with the average length of treatment being 13.2 sessions. Three of the participants (42.9%) entered remission from GAD by posttreatment and three (42.9%) were minimally to moderately improved.

The treatment approach based on the Dugas et al. (1998) model and described in their treatment manual for GAD (Dugas & Robichaud, 2007) was further modified for use with younger adolescents and children in a pilot study (Payne, Bolton, & Perrin, 2011). The authors minimized the more didactic components of the treatment and permitted the therapists to administer the interventions flexibly, provided the focus was maintained on the role of IU in bouts of excessive worry (Payne et al., 2011). The treatment was one-to-one with the child and additional parental sessions were available at the request of the therapist or parent. The authors administered the treatment to 16 youths (aged 7–17 years) seeking treatment for a primary diagnosis of DSM-IV GAD, all of whom completed the treatment in an average of 9.7 sessions. At posttreatment, 81% were free of their GAD diagnosis, and significant and large reductions were found for self-reported worry and anxiety (Cohen's d = 2.0 and 1.4 respectively). Ten of the included youths met criteria for a secondary diagnosis pretreatment. Of the 10, only 2 retained the secondary diagnosis posttreatment. Two adolescents were included in the trial and both were free from GAD posttreatment with similar improvements for self-reported worry.

In the only randomized controlled trial specifically for youth with GAD to date (Holmes, Donovan, Farrell, & March, 2014), several elements from the Dugas et al. (1998) model for excessive worry/GAD were used and a component focusing on perfectionism was added. Children aged 7–12 years (N = 42) with a primary diagnosis of DSM-IV GAD were randomized to treatment or a wait-list control group. The treatment was group-administered with 12 sessions for the youth and 9 sessions for parents; one session involved both the

children and parents. Treatment for the youth involved psychoeducation, training in breathing and muscle relaxation, skills training, cognitive restructuring to address the putative mediators of excessive worry from the Dugas et al. (1998) model (i.e., IU, CA, PBW, and NPO), and interventions aimed at identifying and reducing the impact of perfectionism on worry. Parent sessions focused on psychoeducation about worry, the Dugas model and perfectionism, and developing effective parenting strategies to help their child reduce worry. Of the 20 participants randomized to treatment, 17 (85%) completed treatment and 15 (75%) completed the 3-month follow-up assessment. For all participants randomized to treatment, 45% experienced remission from their GAD at posttreatment, rising to 80% at follow-up. By the 3-months follow-up, half the sample was free of all diagnoses. Significant and large reductions were found for child-reported worry and anxiety but not on the measures of IU, CA, PBW, NPO or perfectionism.

Thus, there is a small body of evidence suggesting that CBT focused specifically on GAD can produce large reductions in self-reported worry and anxiety, moderate to high rates of diagnostic remission, and reductions in comorbid disorders. The treatments appear moderately effective whether delivered in individual or group formats and with or without separate formal interventions for parents. However, the applicability of these treatments to adolescents who experience excessive bouts of worry is less clear as relatively few adolescents have been included in the previous trials. We also note that the treatments tested to date vary in length between 10 and 18 hours of child-focused work, and up to 13 hours of separate sessions for the parents. This represents a significant investment of time on the part of the therapists and the families.

A research group led by the last author has developed and tested minimal therapist-contact, internet-delivered CBT programs with the purpose of increasing access to evidence-based treatments for pediatric anxiety (disorder and non-disorder specific) while at the same time

reducing the burden of treatment for the families (Jolstedt, Ljótsson, et al., 2018; Jolstedt, Wahlund, et al., 2018; Nordh et al., 2017; Vigerland et al., 2016; Vigerland et al., 2013). If the internet-delivered treatment is to be acceptable, adhered to, and completed by children and their families, our experience is that the interventions should be relatively few but well matched to the primary outcome. IU, in essence a fear of the unknown (Carleton, 2012), has been shown to play a significant role in children and adolescents with excessive worry (see Osmanagaoglu, Creswell, & Dodd, 2018, for a review). IU represents a strong candidate for targeting in a streamlined and worry-specific, internet-delivered treatment for excessive worry in youth (Fialko, Bolton, & Perrin, 2012; Kertz & Woodruff-Borden, 2012).

With the ultimate aim of testing an internet-delivered treatment for excessive worry in adolescents, our research group has developed a CBT intervention (IU-CBT) designed to specifically target behaviors related to worry and IU in adolescents with excessive worry. Consistent with our experience of developing feasible and effective, internet-delivered treatments for pediatric anxiety, we have scaled down the number of treatment components to focus primarily on self- and therapist-guided exposure to situations and thoughts involving uncertain outcomes. Exposure to uncertainty is hypothesized to alter the meaning and function of responses that would typically be deployed to reduce uncertainty and thereby decrease the frequency and negative impact of bouts of excessive worry. In this IU-CBT treatment, we do not focus on habituation or modification of uncertainty- or worry-specific appraisals. Instead, the patient is encouraged to detect and approach situations associated with uncertainty without any control behaviors. Such an approach has been suggested as a way of increasing the efficacy of exposure in CBT for children and adolescents (McGuire & Storch, 2018). Our clinical experience is that this strategy is easy for adolescents to understand and encourages greater willingness to approach, and a more flexible engagement with, situations associated with uncertainty.

As a first step in the development of an internet-delivered treatment, we undertook a small pilot feasibility study aimed to investigate whether IU-CBT in a face-to-face format combined with a parent program delivered through an internet platform, was acceptable and feasible for adolescents with excessive worry and their parents. Secondary research questions were if there would be changes in adolescent worry, anxiety, general functioning, and cognitive processes related to worry after treatment and if parental accommodation to the adolescents' anxiety would decrease.

Method

Participants

This pilot feasibility study included 12 adolescents (P1-P12) with excessive worry. Inclusion criteria were as follows: (a) ≥ 22 on the Penn State Worry Questionnaire for Children (PSWQ-C; Chorpita, Tracey, Brown, & Collica, 1997); (b) aged between 13 and 17 years; (c) the ability to read and write in the Swedish language; (d) having a parent or legal guardian able to co-participate in treatment; and (e) the ability to attend treatment sessions at the clinic in Stockholm. Since no normative data on the PSWQ-C for a Swedish adolescent population was published at the time of the study, we determined the cut-off based on international reports (Chorpita et al., 1997; Holmes et al., 2014; Payne et al., 2011). Exclusion criteria were: (a) diagnosis of autism spectrum disorder, psychosis, bipolar disorder or severe eating disorder; (b) risk of suicide; (c) ongoing substance use disorder; (d) occurrence of domestic violence; (e) CBT for any anxiety disorder within the last 6 months; and (f) changes of psychotropic medication within 6 weeks prior to inclusion. None of the participants had received CBT for depression prior to inclusion in the trial.

Procedure

The study protocol was approved by the regional ethics review board in Stockholm and registered on www.clinicaltrials.gov (NCT02978963). Recruitment to the study commenced in November 2016 and was completed by March 2017. All data were collected by September of 2017. Assessments and treatment were conducted at the clinical research unit of the Child and Adolescent Mental Health services in Stockholm, Sweden. Information about the study was distributed to general practitioners, child and adolescent mental health units, and through social media. Health care professionals could refer patients to the study and families could self-refer via a secure internet platform. In total, 21 adolescents showed interest in participating, two of whom were referred by health care professionals and 19 self-referred. All adolescents were screened using the PSWQ-C on the secure internet platform. After screening, parents were contacted by telephone and the remaining inclusion and exclusion criteria were assessed. Of the 21 interested adolescents, one was excluded because of a score below cut-off on the PSWQ-C (i.e., 22 points), one reported having Autism Spectrum Disorder, two declined participation, one lived too far from the clinic, one had worries that were assessed as normal given their circumstances, and one could not be reached by telephone.

The remaining 14 eligible families were invited to face-to-face interviews where they were informed about the study and gave their oral and written consent. The adolescents were interviewed using the *Mini International Neuropsychiatric Interview for Children and Adolescents* (MINI-KID; Sheehan, Lecrubier, & Sheehan, 1998). The first and third authors conducted all assessments; both have extensive experience and training in diagnostic assessments of adolescents. Two participants were excluded after the interview because of having problems other than excessive worry in need of more immediate treatment. The

remaining 12 participants met all inclusion and no exclusion criteria and were provided personal usernames and passwords (separate for the adolescent and the parent) to the secure internet platform used to collect self- and parent rated data. Adolescents and their parents were asked to log in and complete pretreatment self-assessments promptly. Table 1 presents information on the demographic and clinical characteristics of each participant separately and summary information for the entire sample.

Measures

Primary Outcome Measures

Feasibility was assessed by the number of dropouts from treatment, proportion of conducted homework done by adolescents, number of internet-delivered modules completed by parents, and proportion of sessions conducted in accordance with the treatment protocol. Acceptability was assessed using adolescent and parent report measures.

The *Client Satisfaction Scale – Child and Parent Versions* (CSS; Ollendick et al., 2009) is a 10-item measure of treatment satisfaction and effect of treatment. Items are rated on a 5-point scale (1 = *I don't agree at all/not at all/symptoms increased much*; 5 = *I agree very much/very much/symptoms decreased much*). A mean score over items is produced with higher mean scores indicating higher perceived effect of and satisfaction with treatment. Both the child and the parent versions of the CSS have shown acceptable internal consistency in a previous study (Vigerland, 2016). Cronbach's alpha for the CSS child and parent version in the current study were 0.93 and 0.95, respectively.

Unwanted treatment effects were reported by both adolescents and parents. Participants were asked whether they had experienced unwanted effects due to treatment (yes/no). In case they did report such events, they were asked to describe them and rate their immediate and

long-term negative effects on wellbeing on a 4-point rating-scale (0 = *did/does not affect me at all*; 3 = *did/does affect me very much*).

Secondary Outcome Measures

Previously translated (in both published and ongoing studies) Swedish-language versions of the following questionnaires and interviews were used in this study. The one exception was the measure of family accommodation, which was translated by members of the research group with permission from the authors.

The *Mini International Neuropsychiatric Interview for Children and Adolescents* (MINI-KID; Sheehan et al., 1998) is a semistructured diagnostic interview for DSM-IV and ICD-10 psychiatric disorders for use with children and adolescents. It has been shown to possess acceptable to excellent inter-rater and test-retest reliability (Sheehan et al., 2010).

The *Clinical Global Impression– Severity* and *Improvement* Scales (CGI-S/I; Guy, 1976) are commonly used brief clinician-rated scales of symptom severity and symptom change relative to baseline assessment. Scores on the CGI-S range from 1 (no symptoms) to 7 (extremely severe). Scores on the CGI-I range from 1 (very much improved) to 7 (very much worse). Although neither scale has been validated in adolescents, both have been used to measure symptom severity and improvement in randomized controlled trials involving children and adolescents with anxiety disorders (e.g., Creswell et al., 2017; Jolstedt et al., 2018; Walkup et al., 2008).

The *Children's Global Assessment Scale* (CGAS; Shaffer, Gould, & Brasic, 1983) is a clinician-rated scale of functioning for children and adolescents during a specified time period. The CGAS contains behaviorally oriented descriptors with corresponding ratings from 1 for the most functionally impaired child to 100 for the best functioning; with scores ≥ 70 indicating normal functioning. It has shown moderate to excellent inter-rater reliability, good

stability over time, and good concurrent and discriminant validity (Bird, Canino, Rubio-Stipec, & Ribera, 1987; Lundh, Kowalski, Sundberg, Gumpert, & Landén, 2010).

The *Penn State Worry Questionnaire for Children* (PSWQ-C; Chorpita et al., 1997) is a self-rated 14-item measure of the frequency of worry among children and adolescents aged 7–17 years. Items are rated on a 4-point scale (0 = *never true*, 3 = *always true*). The measure possesses excellent psychometric properties and good convergent validity with other indices of anxiety (Chorpita et al., 1997; Pestle, Chorpita, & Schiffman, 2008). Cronbach's alpha for PSWQ-C in the current study was 0.87.

The *Penn State Worry Questionnaire for Children–Parent Report Version* (PSWQ-P; Chorpita et al., 1997) has the same 14 items and the same response scale (0–3) as the child version. In a randomized controlled trial (Vigerland et al., 2016) it was found to have excellent reliability in a Swedish-language version. Cronbach's alpha for PSWQ-P in the current study was 0.90.

The *Revised Children´s Anxiety and Depression Scale, Child and Parent-Report Versions* (RCADS-C/P; Chorpita, Yim, Moffitt, & Umemoto, 2000) are 47-item, child and parent-report questionnaires assessing symptoms of DSM-IV anxiety disorders (SEP, SAD, GAD, PD, and OCD) and major depressive disorder. Items are rated on a 4-point frequency scale (0 = *never*, 3 = *always*). In this study we omitted the depression subscale and calculated the results using the anxiety subscales (termed RCADS Anxiety), which consist of 37 items. The RCADS has high internal consistency for the total score and subscales, satisfactory test-retest reliability, and good criterion validity in both the child and parent-report versions (Chorpita et al., 2000; Ebesutani, Bernstein, Nakamura, Chorpita, & Weisz, 2010; Spence, 1998). Cronbach's alpha was 0.93 for the RCADS-C Anxiety and 0.84 for the RCADS-P Anxiety in the current study.

The *Family Accommodation Scale–Anxiety* (FASA; Lebowitz et al., 2013), is a 13-item adaptation of the 19-item, parent-report version of the Family Accommodation Scale (FAS-SR; Pinto, Van Noppen, & Calvocoressi, 2013). The original FAS-SR was designed to assess family accommodation of youth with OCD; the FASA assesses it to pediatric anxiety disorders more broadly. The first five items assess the extent to which family members were engaged in the child's anxious behaviors over the past month on a 5-point scale (0 = *never*; 4 = *daily*). The next four items assess the degree to which the family had modified their routines because of their child's anxiety on the same 5-point scale. The last four items assess the levels of emotional distress caused to the child and parent, and any worsening of the child's anxiety, owing to the family's accommodation of the child's anxiety, again rated on a 5-point scale (0 = *No*; 4 = *Extreme*). A total score is generated along with two subscale scores reflecting items involving participation in and modification related to the child's anxiety. In the present study, only the total score was used. The FASA has shown good internal consistency as well as convergent and divergent validity (Lebowitz et al., 2013). Cronbach's alpha for FASA in the current study was 0.91.

The *Work and Social Adjustment Scale–Youth version, child and parent versions* (WSAS-Y-C/P; Mundt, Marks, Shear, & Greist, 2002) assesses impaired functioning in five different domains (school and work, everyday situations, social activities, spare time, and family relationships). It is a 5-item, 9-point rating scale (0 = *my problem does not affect this at all*; 8 = *my problem affects this very seriously*), adapted for children from the adult version, and has shown good psychometric properties (Jassi et al., 2018). Cronbach's alpha for WSAS-Y child and parent versions were 0.66 and 0.78 respectively.

Process Measures

The four cognitive processes specified in the Dugas et al. (1998) model of excessive worry/GAD were assessed using the Brief Intolerance of Uncertainty Scale (Brief IUS), the Brief Why-Worry 2 (Brief WW2), Brief Cognitive Avoidance Questionnaire (Brief CAQ) and the Negative Problem Orientation Questionnaire (NPOQ). The four brief scales are five-item, child-friendly versions of measures originally developed for adults; The Intolerance of Uncertainty Scale (IUS; Buhr & Dugas, 2002); the Cognitive Avoidance Questionnaire (CAQ; Sexton & Dugas, 2008); the Why Worry-II (WW2; Hebert, Dugas, Tulloch, & Holowka, 2014), and the Negative Problem Orientation Questionnaire (NPOQ; Robichaud & Dugas, 2005). The five items on each of the measures are scored on a 1–5 scale (1 = *not at all like me/not at all true/never*; 5 = *extremely like me/completely true/always*) with a total score computed for each measure. Higher scores on the measures indicate higher levels of IU, CA, PBW, and NPO. The development and validation of the Brief IUS, Brief WW2, and Brief CAQ with children and adolescents is detailed in Fialko et al. (2012), and the development and validation of the Brief NPOQ in Fialko (2009). The four scales were found to possess high levels of internal consistency, good convergent validity, and similar factor structures to their full-length originals (Fialko, 2009; Fialko et al., 2012). In addition, these four scales have been found to correlate significantly with anxiety and worry in youth seeking treatment for GAD and to be sensitive to the effects of GAD-specific treatment based on the Dugas model of GAD (Perrin, Bevan, Payne & Bolton, 2018). In addition, the short version of NPOQ has been shown to be sensitive to the effects of a coping-skills/problem-solving approach treatment for adolescents with suicidal behavior (Hetrick et al., 2014). In the present study, Cronbach's alpha for the brief measures were 0.88 for the Brief IUS, 0.68 for the Brief WW2, 0.85 for the Brief CAQ, and 0.92 for the Brief NPOQ. These values were comparable to those reported in the original validation studies (Fialko, 2009; Fialko et al., 2011).

Assessment Points

The adolescents and their parents completed the primary and secondary outcome measures prior to treatment, at posttreatment, and again at a 3-month follow-up. In addition, weekly ratings on the main outcome measure (PSWQ-C) and the process measures (Brief IUS, Brief WW2, Brief CAQ and short NPOQ) were reported by adolescents during a baseline phase (number of baseline ratings prior to treatment, M = 1.7; range = 1-3 weeks) and again weekly during the 12-week treatment. Feasibility, adherence, unwanted treatment effects and adverse events, and treatment satisfaction were assessed posttreatment. All adolescent- and parent-rated measures were administered via the secure internet platform. Posttreatment and follow-up interviews with the participants were conducted by the same therapists who had provided their treatment.

Planned Analytic Strategy

As the main aim of the study was exploring acceptability and feasibility, no power-analysis was performed. Effects on the primary and secondary outcomes were analyzed via one-way repeated measures analysis of variance (ANOVA) with three time points (pretreatment, posttreatment, and 3-month follow-up) and post-hoc comparisons between time points. The effect-sizes of change on the adolescent-, parent- and clinician-rated measures were estimated using Cohen's d computed as pre/posttreatment mean difference divided by pretreatment SD (Cohen, 1988).

To assess clinical improvement, the Reliable Change Index (RCI) and clinically significant change were calculated. A participant's reliable change (RC) coefficient ≥1.96 indicates that it is likely ($P < .05$) that the changes in a self-report measure are reliable and that the participant has responded to treatment. We calculated an RC coefficient on self-rated worry

(PSWQ-C) for each participant using the formula as proposed by Jacobson & Truax (1991): $RC = X_1 - X_2/S_{diff}$ where $S_{diff} = \sqrt{2}(S_E)^2$ and S_E = SD at pretreatment × $\sqrt{(1 - r)}$. As suggested by Martinovich, Saunders, and Howard (1996) and Tingey, Lambert, Burlingame, and Hansen (2010), we used data from the current study in calculating the RC, (pretreatment *SD* = 6.0; Cronbach's alpha = 0.83 as measure of reliability pretreatment), thus $S_E = 2.47$ and $S_{diff} = 3.49$. In this sample the RC coefficient was 7 points. Clinically significant change was defined as the posttreatment score falling below two standard deviations from the mean pretreatment score, i.e. $M_{pre} - 2 \times SD_{pre}$ (Jacobson & Truax, 1991), in this study 21 points on the PSWQ-C. Version 24 of SPSS (IBM, 2016) was used for all statistical analyses.

Therapists, Competence and Adherence

Therapists were the first and third authors, both clinical psychologists and Ph.D. students with extensive training in CBT and 5–8 years of clinical experience. The therapists had regular discussions to ensure adherence to the treatment protocol. All sessions were video recorded with a random selection (20%, *N* = 25) rated for competence and adherence by an independent expert clinician using the *Cognitive Therapy Adherence and Competence Scale* (CTACS; Barber, 2003). The CTACS is a 24-item, 6-point rating scale that assesses therapist competence. Higher mean rating (range 0–6) indicates higher competence. The CTACS has been found to have acceptable inter-rater reliability and criterion validity (Barber, 2003). In this study, the mean general therapist quality was 5.45 (*SD* = 0.37), indicating high competence. The independent clinician also assessed number of deviations from the treatment protocol. These deviations were: analysis of avoidance of emotions for P5, assessment of medical history and autistic symptoms for P6, and discussion of the interaction between worry behaviors and abdominal pain, and positive beliefs about worry for P9. In summary, only 2%

of all delivered interventions within the twenty-five rated sessions deviated from the treatment protocol.

Treatment Protocol

The treatment protocol has similarities with previous worry/GAD specific treatments that target IU in adults (Dugas & Robichaud, 2007) and youth (i.e., the ones summarized in the introduction), especially regarding the focus on worry awareness training and the aim of increasing tolerance for uncertainty through experiential interventions. In the original IU-model (Dugas et al., 1998), IU is regarded as an overarching vulnerability factor for worry that leads to three types of malign cognitive processes: (a) positive beliefs about worry (PBW), (b) negative problem orientation (NPO), and (c) cognitive avoidance (CA). Studies have found IU to be strongly correlated with the severity of adolescent worry, with the remaining processes in the original IU-model being important but less so; particularly beliefs about worry (Fialko et al., 2012; Gillett, Bilek, Hanna, & Fitzgerald, 2018; Laugesen, Dugas, & Bukowski, 2003). This is in line with our clinical experience, which suggests that it is (primarily) an increased willingness to confront situations involving uncertainty and to reduce efforts to gain certainty through worrying, that leads to improvements in treatment of youth with excessive worry. To streamline the IU-CBT treatment, we have omitted interventions targeting cognitive processes related to worry, bearing in mind that according to the original IU model (Dugas et al., 1998), interventions aimed at IU may also reduce these vulnerability factors. IU-CBT is also influenced by current approaches to exposure that are based on findings that habituation within and between sessions is not necessary in order to achieve functional improvement (Craske et al., 2008; Craske, Treanor, Conway, Zbozinek, & Vervliet, 2014; Jacoby & Abramowitz, 2016). Exposure exercises in IU-CBT were not described as behavioral experiments testing specific feared outcomes as in the original GAD

treatment for adults (Dugas & Robichaud, 2007), nor as exposure with the aim of achieving habituation of anxious arousal. Exposure exercises in IU-CBT were instead described as efforts to identify the links between IU and worry and to confront the uncertainty without any safety behaviors, which in turn would increase tolerance to uncertainty and diminish the need for worrying. Approaching feared situations without safety behaviors has shown promise in previous clinical trials (e.g., Weersing et al., 2017) and has been suggested as a way of creating more robust treatment outcomes for CBT for children and adolescents (McGuire & Storch, 2018).

The IU-CBT treatment lasted for 12 weeks and consisted of two modalities: weekly 45-minute face-to-face sessions for the adolescents and a parallel internet-delivered program for their parents. Adolescents and parents had contact with the same therapist.

The treatment followed a standardized outline but the order of content could be adapted to the adolescent's needs. The main interventions were (1) worry awareness training, (2) linking worry to IU, and (3) exposure to uncertainty. IU-CBT started with psychoeducation about the link between thoughts, emotions, and behaviors. Adolescents were encouraged to use a "worry diary" daily in order to become more aware of their worry process and worry behaviors. During worry awareness training, adolescents were taught to notice if they worried about problems or matters that they could not solve. Adolescents were then introduced to the link between IU and worry. In session, the adolescents were asked to recall situations involving excessive worry during the past week or situations about which they were currently worried. They were then asked to imagine these situations, describing aloud all aspects including those involving uncertainty as to outcomes. Adolescents were provided psychoeduation about common reactions to uncertainty (such as control and avoidance behaviors) and how they may reinforce worry and IU over time. They were then encouraged to identify their own strategies in relationship to uncertainty. In session 3, adolescents were

introduced to the idea of exposing oneself to uncertainty rather than to avoid it. If the adolescents in IU-CBT noticed that they worried about specific problems they were encouraged to try to solve the problem rather than to avoid it. If they worried about matters they could not solve, they were encouraged to let themselves think about the full range of feared outcomes rather than engaging in avoidance, distraction, or trying to gain certainty about any particular outcome through worrying or reassurance seeking. Both problem solving and exposure to thoughts/situations involving uncertainty and fear were framed as ways of confronting uncertainty. As homework exercises, participants were encouraged to intentionally face uncertainty-inducing situations while refraining from control and avoidance behaviors to increase tolerance for uncertainty.

The internet-delivered program for the parents consisted of five modules. A new module was accessible to parents every other week. The modules contained texts, videos, and illustrations about anxiety and worry in general, the relationship between IU and excessive worry, the aims/interventions of IU-CBT and parental behaviors related to the adolescent's worry. The internet-delivered program was intended to involve the parents in treatment and to help them support their adolescents by engaging in behaviors meant to increase the child's tolerance for uncertainty, and to reduce excessive worry and reassurance-seeking. Parents accessed the program via an internet platform using encrypted traffic and could communicate with their designated therapist via the platform. Table 2 presents the treatment protocol for adolescents and their parents.

Results

Feasibility and Acceptability

All 12 participants completed the IU-CBT treatment and attended the post and 3-month follow-up clinician assessments. There was no data attrition on the self-rated questionnaires at pre- or posttreatment or at follow-up, and compliance with the weekly outcome- and process questionnaires ranged from 75% (at week 9) to 100%. The adolescents attended on average 10.5 sessions (*SD* = 1.2) over the 12-week treatment period. The adolescents conducted on average 76.4% (*SD* = 22.8) of agreed upon homework between sessions. Of the parents, eight (66.6%) completed all five internet-delivered modules while four (33.3%) completed four modules. The average therapist time spent writing to parents over the 12-week treatment was 11 minutes of per parent and week.

The mean satisfaction over items, as measured by the CSS-C/P was 3.9 (*SD* = 0.8) for adolescents and 3.7 (*SD* = 0.8) for parents. Six adolescents and four parents described that the adolescent had experienced temporary increases in stress, worry or sadness during treatment, but no long-term nor serious adverse events were reported.

Treatment Efficacy

As shown in Figure 1, the majority of adolescents had a decline in worry and reductions in intolerance of uncertainty, cognitive avoidance, negative problem orientation, and positive beliefs about worry.

As shown in Table 3, there was a significant effect of time on the primary outcome (PSWQ-C), on adolescent-rated anxiety (RCADS-C Anxiety) and functioning (WSAS-Y-C) as well as on the Brief IUS, Brief CAQ, and NPOQ (but not the Brief WW2). There were also

significant effects of time on parent-rated worry (PSWQ-P) and family accommodation (FASA), and on clinician-rated global functioning (CGAS). There were no significant effects of time on parent-rated anxiety (RCADS-P Anxiety) or functioning (WSAS-Y-P). Planned post hoc comparisons showed that all statistically significant changes occurred between pre- and posttreatment on all measures except the adolescent-rated impaired functioning (WSAS-Y-C) and parent-rated family accommodation to anxiety (FASA) which changed significantly between posttreatment and follow-up. Effect sizes (Cohen's *d*) were in the moderate to large range.

Of the participants, nine (75%; P1-P5, P7, P10-P12) achieved a reliable change in self-rated worry based on the pre-to-post difference on the PSWQ-C for each adolescent. Seven (58.3%; P1-P5, P7, P11) of them also scored below the cut-off point for clinically significant change. At 3-month follow-up, seven participants (58.3%; P1, P5, P7, P9-P12) showed both reliable and clinically significant change. Three participants had deteriorated between post and 3-month follow-up; P3 and P4 showed neither reliable nor clinically significant change at follow-up while P2 still demonstrated a clinically significant improvement compared to pretreatment.

According to the CGI-I, seven participants (58%; P1-P3, P5, P7, P10, P11) were assessed as much or very much improved at posttreatment. All of these seven, except P10, were in remission from their principal diagnosis (P1, who had subthreshold GAD pretreatment, was improved in terms of severity; CGI-S: 2). At 3-month follow-up, eight participants (67%; P1, P2, P5, P7, P9-P12) were rated as much or very much improved and all of them, except P12, were free of their principal diagnoses. Participants P6 and P8 showed no improvement at either time point.

Case Descriptions

The clinical impression from the current study was that participants who worked actively with homework assignments and applied what they learned in treatment in their daily lives made the biggest treatment gains. To illustrate, we provide an example of one participant who was improved after treatment (P5) and one who was not (P8).

Case P5

Case P5, a 15-year-old girl, presented with GAD as her principal diagnosis. She had frequent bouts of intensive worry when she felt anxious. P5 described worrying about relationships with friends, school performance and her own safety, and she had difficulties falling asleep most nights. She often got into conflicts with her parents when she worried. At the pretreatment assessment, which P5 attended together with her mother, she was irritable and responded very briefly to the therapist's questions. During session 2, which P5 attended by herself, communication with the therapist was much easier. From early on, P5 was successful in identifying worry behaviors (e.g., postponing schoolwork, which in turn increased worry about her grades). During worry registration, she also realized that she often scanned the house for signs of someone having broken in, and always made sure a room was empty before entering. Because she was worried about what friends would think of her, she often avoided initiating contact.

At first, P5 was hesitant to try new behaviors in situations that could induce uncertainty. The therapist and P5 worked together in designing exposure tasks that P5 was willing to do and that could give her new experiences in relationship to uncertainty. Once P5 had tried not to check some parts of the house when coming home, she was willing to make exposures more difficult (i.e., not checking the house at all). P5 was also initially skeptical of exposure

to uncertainty thoughts, but agreed to try the “There is a risk” exercise—for example, when she was about to go to sleep and started to worry about an exam the next day, she thought to herself, “There is a risk I haven’t prepared enough. I just don’t know and there is nothing I can do about it now.” She described that this exposure task was initially very scary but also effective after trying it a few times. Throughout treatment P5 was willing to try all interventions, even though she initially found several of them counterintuitive. She also conducted all of the homework that she had planned together with her therapist and elaborated on new exposure tasks by herself. Her mother completed all of the internet-delivered modules in the parent program. The parallel treatment modalities for adolescent and parent seemed to work especially well for this family as it included the family context in the treatment but still prevented it from being disturbed by interpersonal conflicts and irritability. At the last session, P5 described that she did not start to worry as easily, and she could also more readily handle worrying thoughts when they did occur.

Case P8

Case P8, a 17-year-old girl, presented with both GAD and SAD at pretreatment. At baseline, P8 described worrying primarily about relationships with friends, school, and her future. Her parent finished all five chapters in the parent program. P8 recognized herself in the description of IU. Initially, she was active in treatment and worked with her worry awareness training regularly. In session 3 it became apparent that her social anxiety and related avoidance was more impairing than originally assessed. P8 avoided most social situations where she had to be in public spaces without her parent or talk to people she did not know very well. P8 was hesitant to test exposure tasks focused on social situations. She willingly attempted exposure to thoughts in session 5, but when the therapist suggested exposure to thoughts about uncertainty in social situations, she was unwilling to engage. The clinical

impression was that P8 was avoiding thoughts about social situations even though cognitive avoidance as measured by the Brief CAQ was slightly reduced during treatment (see Figure 1). By session 8, P8's level of worry was not reduced (PSWQ-C = 30). It seemed as if symptoms of social anxiety outweighed the excessive worry and created obstacles from taking advantage of treatment. This was addressed with the participant, and she affirmed that the social anxiety had become more apparent to her during treatment. P8 experienced major self-focus during social situations and this self-focus made her hesitant to do exposure exercises and also seemed to stop her from learning anything from the exposures that she did do. At posttreatment, P8 was referred to another psychiatric clinic for treatment of SAD.

Discussion

The present study was undertaken to evaluate the feasibility, acceptability, and preliminary efficacy of IU-focused CBT for adolescents suffering from excessive worry. There were no dropouts from the treatment, the adolescents were well engaged with in-session work and homework assignments, and the parents worked actively with their internet-delivered modules. Both the adolescents and their parents were generally satisfied with the treatment program. Specifically, they understood and were satisfied with the model of treatment and the exposure interventions focused on reducing IU and were satisfied (and compliant) with the internet-delivered assessment protocol and parenting interventions. Furthermore, the rationale for exposure through approaching uncertainty without using control or avoidance behaviors (without emphasis on habituation or cognitive restructuring) appeared to work well for most adolescents and their parents. This approach has gained increased interest in the research literature during the last decade (Craske et al., 2014; Jacoby & Abramowitz, 2016) and the findings from the current study suggest that the rationale can be successfully employed for adolescents with excessive worry.

In relation to treatment outcome, clinically significant reductions on the primary outcome measure adolescent-reported worry were observed, with significant changes on several, but not all, secondary outcomes, such as adolescent-reported anxiety and process measures, and effect sizes all in the moderate to large range. It is important to point out that the adolescents in this study were treatment-seeking and were selected because they had scores ≥ 22 on a widely used self-report measure of worry (PSWQ-C). The pretreatment levels of worry in this sample (mean = 33.8; SD = 6.0) appears to be significantly higher than that reported on the same measure (means ranging from 20 to 24; average SD = 7) in the GAD trials by Payne et al. (2011) and Holmes et al. (2014). Thus, the present treatment was acceptable and feasible as well as potentially effective for treatment-seeking adolescents with severe levels of worry.

It should be noted that 2 (16.7%; P6 and P8) of the 12 participants failed to achieve reliable clinical change on the measure of self-reported worry, and in addition were not rated as improved by the clinician at posttreatment or follow-up. Both P6 and P8 had SAD and their therapists experienced significant difficulties engaging them both in exposure to uncertainty, partly owing to socio-evaluative fears that undermined their willingness to engage in exposure in treatment sessions or as homework. Nevertheless, it is premature to conclude that this treatment may not be applicable to adolescents with excessive worry and symptoms of SAD. We note that one of the clinical trials summarized in the introduction found that treatment was effective despite the presence of SAD with SAD declining at similar rates to GAD (Payne et al., 2011). Also, there is significant overlap between SAD and GAD at the diagnostic level and in terms of the content of their worries, with several studies finding strong relationships between IU and social anxiety in adolescents (Boelen & Reijntjes, 2009; Boelen, Vrinssen, & van Tulder, 2010; Counsell et al., 2017).

Implications for Further Treatment Development and Clinical Practice

A few considerations for clinicians treating adolescents with excessive worry are worth mentioning. First, at the start of treatment several of the participants experienced their bouts of excessive worry as unpredictable and confusing, not unlike the way that panic disordered patients might describe their panic attacks. Our clinical impression was that the focus on IU helped these patients identify situations/stimuli that triggered bouts of worry and this may partly explain why some patients experienced an initial increase in worry during treatment. We also observed that it was difficult for some patients to identify "postponing-behaviors," i.e., situations where they delayed activities to avoid situations where the outcome was uncertain. Encouraging these patients to engage in activities at a set time instead of at the last minute or when it felt right appeared to be an effective method for eliciting thoughts about uncertainty and worry and encouraging exposure to situations involving uncertainty.

Second, our experience, which is in line with those of Payne et al. (2011) in their IU-focused treatment, is that extensive didactic psychoeducation about IU was not necessary for the adolescents to be able to expose to situations and thoughts involving uncertainty. Instead, relatively prompt exposure to situations involving uncertainty reduced worry and helped adolescents identify how they could increase their tolerance through behavior change.

Third, we found that a few adolescents initially described their primary symptom as "excessive worry" but it was later revealed that they suffered more from preoccupation with experiences of failure from the past or anticipated failure in the future, that were accompanied by irritable mood and low levels of motivation. These "worries" might better be conceptualized as ruminations and part of a more primary depressive illness (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), although triggered by situations involving uncertainty. Thus, if recruiting adolescents based solely on their scores on a worry measure,

the treatment might be more effective if it also explicitly identified and targeted rumination as another maladaptive response to uncertainty.

Fourth, there is a growing body of evidence indicating that routine outcome monitoring (ROM), including the use of brief symptom measures on a session-by-session basis, is associated with improved outcomes in adult mental health care (Kilbourne et al., 2018). Less evidence is available for adolescents but suggest similar benefits (Bickman et al., 2011). However, ROM is rarely used with children and adolescents outside of clinical trials, in part because of patient, parent, and therapist concerns about its feasibility, usefulness, and added burden (Martin, Fishman, Baxter, & Ford, 2011; Moran et al., 2011). In our experience, the use of a secure internet platform to carry out ROM can help reduce concerns about its feasibility and added burden. The adolescents in this study were asked about the weekly assessment load (completed via the internet platform), which involved a total of 34 items: 14 items from the PSWQ-C and 20 items from the brief, five-item measures of the four process measures based on the Dugas et al. (1998) model of worry/GAD. While three adolescents described the weekly assessments as either boring or difficult to answer, they did not complain about the assessment load, nor was there much missing data. Also, the therapists found that reviewing the adolescent's weekly measures was clinically useful in that it (a) allowed the adolescent and therapist to review the treatment progress; (b) helped to reinforce the notion of a link between IU and worry; and (c) prompted discussion of the triggers for specific bouts of worry during the past week, which could then be used to design exposure. Similarly, there was an extremely low rate of missing data for parent-completed measures (administered via the internet platform). Thus, we suggest encouraging adolescents to fill out the PSWQ-C and at least the Brief IUS (the five items are listed in the publication by Fialko et al., 2012) prior to each session and to review these at the start of each session. As a

minimum, parent-report measures (as described above) can be limited to pre-, posttreatment, and follow-up.

Fifth, it is important to note that during treatment, some adolescents and their parents were very focused on achieving immediate reductions in all forms of worry, and this raised their doubts about the likely effectiveness of the treatment. In this study, weekly measures showed that reductions in worry frequency only occurred after several weeks of treatment for many participants (see Figure 1). Consequently, we found that engagement was enhanced if the adolescent and their parent were reminded throughout treatment that a certain degree of worrying is normal, and that the treatment aims to reduce the frequency, duration, and impact of bouts of *excessive worry*.

Sixth, some parents in this study found themselves very involved in their adolescent's worries, often through accommodating frequent requests for reassurance, discussing the likelihood of feared future outcomes, or reinforcing avoidance behaviors. Research has shown that parental accommodation is associated with anxiety symptom severity in children and may need to be addressed in treatment (Lebowitz et al., 2013). A preliminary meta-analysis (Manassis et al., 2014) found that transfer of control from therapists to parents, and teaching parents to encourage the child or adolescent to conduct exposures to threatening situations, may help maintain treatment gains over time. In our study, separate contact with parents via the internet-delivered parent program appeared to be sufficient to help parents to reduce accommodation, while at the same time supporting their adolescent through treatment. This is encouraging as the online format could help overcome several logistical barriers (e.g., scheduling difficulties, expenditures) for parents to be involved in their adolescent's treatment. Further investigation is needed to determine whether more parental contact would lead to additional gains in treatments.

Finally, in this study we suggest targeting excessive worry as one approach to treatment innovation in pediatric anxiety. In order to assess if this approach in general, and IU-CBT in particular, could in fact complement the current treatment repertoire, further research on its efficacy and moderators of treatment outcome is needed.

Limitations

There are important limitations to the present study. First, the sample size was small and we did not employ a control group, which affects the reliability of the findings in this study. More specifically, changes in the outcome measures cannot be solely attributed to the effects of treatment but could be related to chance, maturity, and regression to the mean, effects or repeated measures, expectancy biases or other factors that were not controlled for. On the other hand, an uncontrolled study can be helpful in gathering clinical information about the population and testing treatment feasibility in the early stages of developing or adapting a treatment protocol to a new format. A next logical step would be to replicate and expand the positive findings found in this study. Second, we included participants with a score of ≥ 22 points on the PSWQ-C. Our clinical experience was that the cut-off was too low and led to inclusion of participants where excessive worry was not the primary concern. Third, in relation to the secondary outcome measures of clinician-rated diagnostic status and clinical improvement, the study lacked blind assessments at posttreatment and follow-up. This may have biased the data increasing the risk for type I error. However, as the self- and parent-administered data showed similar results, we deem this risk as fairly low.

Conclusions

In conclusion, the findings from this pilot feasibility study contribute to an emerging body of literature showing that exposure to thoughts and situations involving uncertainty is an

important component of treatments for excessive worry in youth. Our findings also suggest that IU-CBT is a suitable candidate for testing as an internet-delivered treatment program with minimal therapist support.

References

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders*. Arlington, VA: American Psychiatric Association. https://doi.org/10.1176/appi.books.9780890425596

Barber, J. P. (2003). Development of the Cognitive Therapy Adherence and Competence Scale. *Psychotherapy Research, 13*(2), 205-221. http://dx.doi.org/10.1093/ptr/kpg019

Bell-Dolan, D. J., Last, C. G., & Strauss, C. C. (1990). Symptoms of anxiety disorders in normal children. *Journal of the American Academy of Child and Adolescent Psychiatry, 145*(8), 960-964. https://doi.org/10.1097/00004583-199009000-00014

Bickman, L., Kelleym S.D., Breda, C., De Andrade, A.R., & Riemer, M. (2011). Effects of routine feedback to clinicians on mental health outcomes of youths: Results of a randomized trial. *Psychiatric Services, 62*(12), 1423-1429. http://dx.doi.org/10.1176/appi.ps.002052011

Bird, H. R., Canino, G., Rubio-Stipec, M., & Ribera, J. C. (1987). Further Measures of the Psychometric Properties of the Children's Global Assessment Scale. *Archives of General Psychiatry, 44*(9), 821-824. http://dx.doi.org/10.1001/archpsyc.1987.01800210069011

Boelen, P. A., & Reijntjes, A. (2009). Intolerance of uncertainty and social anxiety. *Journal of Anxiety Disorders, 23*(1), 130-135. http://dx.doi.org/10.1016/j.janxdis.2008.04.007

Boelen, P. A., Vrinssen, I., & van Tulder, F. (2010). Intolerance of Uncertainty in Adolescents. *The Journal of Nervous and Mental Disease, 198*(3), 194-200. http://dx.doi.org/10.1097/NMD.0b013e3181d143de

Buhr, K., & Dugas, M. J. (2002). The intolerance of uncertainty scale: Psychometric properties of the English version. *Behaviour Research and Therapy, 40*(8), 931-945. http://dx.doi.org/10.1016/S0005-7967(01)00092-4

Carleton, R. N. (2012). The intolerance of uncertainty construct in the context of anxiety disorders: Theoretical and practical perspectives. *Expert Review of Neurotherapeutics, 12*(8), 937-947. http://dx.doi.org/10.1586/ern.12.82

Chorpita, B. F., Tracey, S. A., Brown, T. A., & Collica, T. J. (1997). Assessment of worry in children and adolescents: An adaptation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy, 35*(6), 569-581. http://dx.doi.org/10.1016/S0005-7967(96)00116-7

Chorpita, B. F., Yim, L., Moffitt, C., & Umemoto, L. A. (2000). Assessment of symptoms of DSM-IV anxiety and depression in children: A revised child anxiety and depression scale. *Behaviour Research and Therapy, 38*(8), 835-855. http://dx.doi.org/10.1016/S0005-7967(99)00130-8

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates. http://dx.doi.org/10.4324/9780203771587

Counsell, A., Furtado, M., Iorio, C., Anand, L., Canzonieri, A., Fine, A., . . . Katzman, M. A. (2017). Intolerance of uncertainty, social anxiety, and generalized anxiety - Differences by diagnosis and symptoms. *Psychiatry Research, 252*, 63-69. http://dx.doi.org/10.1016/j.psychres.2017.02.046

Craske, M. G., Kircanski, K., Zelikowsky, M., Mystkowski, J., Chowdhury, N., & Baker, A. (2008). Optimizing inhibitory learning during exposure therapy. *Behaviour Research and Therapy, 46*(1), 5-27. https://doi.org/10.1016/j.brat.2007.10.003

Craske, M. G., Treanor, M., Conway, C. C., Zbozinek, T., & Vervliet, B. (2014). Maximizing exposure therapy: An inhibitory learning approach. *Behaviour Research and Therapy, 58*, 10-23. https://doi.org/10.1016/j.brat.2014.04.006

Creswell, C., Violato, M., Fairbanks, H., White, B. A., Parkinson, M., Abitabile, G., . . . Cooper, P. J. (2017). Clinical outcomes and cost-effectiveness of brief guided parent-delivered cognitive behavioural therapy and solution-focused brief therapy for treatment of childhood anxiety disorders: a randomised controlled trial. *The Lancet Psychiatry, 4*(7), 529-539. http://dx.doi.org/10.1016/S2215-0366(17)30149-9

Dugas, M. J., Gagnon, F., & Ladouceur, R. (1998). Generalized anxiety disorder: A preliminary test of a conceptual model. *Behaviour Research and Therapy, 36*(2), 215-226. http://dx.doi.org/10.1016/S0005-7967(97)00070-3

Dugas, M. J., & Robichaud, M. (2007). *Cognitive-behavioral treatment for generalized anxiety disorder: from science to practice*. New York: Routledge. http://dx.doi.org/10.4324/9780203891964

Ebesutani, C., Bernstein, A., Nakamura, B. J., Chorpita, B. F., & Weisz, J. R. (2010). A Psychometric Analysis of the Revised Child Anxiety and Depression Scale – Parent Version in a Clinical Sample. *Journal of Abnormal Child Psychology, 38*(2), 249-260. http://dx.doi.org/10.1007/s10802-009-9363-8

Fialko, L. (2009). Cognitive variables associated with worry in young people aged 7-18 (Doctoral dissertation). Institute of Psychiatry, Psychology & Neuroscience, King's College London.

Fialko, L., Bolton, D., & Perrin, S. (2012). Applicability of a cognitive model of worry to children and adolescents. *Behaviour Research and Therapy, 50*(5), 341-349. http://dx.doi.org/10.1016/j.brat.2012.02.003

Gillett, C. B., Bilek, E. L., Hanna, G. L., & Fitzgerald, K. D. (2018). Intolerance of uncertainty in youth with obsessive-compulsive disorder and generalized anxiety disorder: A transdiagnostic construct with

implications for phenomenology and treatment. *Clinical Psychology Review, 60*, 100-1008. http://dx.doi.org/10.1016/j.cpr.2018.01.007

Guy, W. (1976). *ECDEU assessment manual for psychopharmacology*. Rockville, Maryland: National Institute of Mental Heath.

Hebert, E. A., Dugas, M. J., Tulloch, T. G., & Holowka, D. W. (2014). Positive beliefs about worry: A psychometric evaluation of the Why Worry-II. *Personality and Individual Differences, 56*(C), 3-8. http://dx.doi.org/10.1016/j.paid.2013.08.009

Hetrick, S., Yuen, H. P., Cox, G., Bendall, S., Yung, A., Pirkis, J., & Robinson, J. (2014). Does cognitive behavioural therapy have a role in improving problem solving and coping in adolescents with suicidal ideation? *The Cognitive Behaviour Therapist, 7*, e13-15. http://dx.doi.org/10.1017/S1754470X14000129

Holmes, M. C., Donovan, C. L., Farrell, L. J., & March, S. (2014). The efficacy of a group-based, disorder-specific treatment program for childhood GAD - A randomized controlled trial. *Behaviour Research and Therapy, 61*(C), 122-135. http://dx.doi.org/10.1016/j.brat.2014.08.002

Hudson, J. L., Rapee, R. M., Lyneham, H. J., McLellan, L. F., Wuthrich, V. M., & Schniering, C. A. (2015). Comparing outcomes for children with different anxiety disorders following cognitive behavioural therapy. *Behaviour Research and Therapy, 72*(c), 30-37. https://doi.org/10.1016/j.brat.2015.06.007

IBM. (2016). IBM SPSS Statistics for Macintosh, Version 24.0. Armonk, NY: IBM Corp.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1), 12-19. http://dx.doi.org/10.1037/0022-006X.59.1.12

Jacoby, R. J., & Abramowitz, J. S. (2016). Inhibitory learning approaches to exposure therapy: A critical review and translation to obsessive-compulsive disorder. *Clinical Psychology Review, 49*, 28-40. https://doi.org/10.1016/j.cpr.2016.07.001

James, A. C., James, G., Cowdrey, F. A., Soler, A., & Choke, A. (2015). Cognitive behavioural therapy for anxiety disorders in children and adolescents. *Cochrane Database of Systematic Reviews, 64*(2), 333-388. http://dx.doi.org/10.1002/14651858.CD004690.pub4

Jassi, J., Lenhard F., Gumpert M., Jolstedt, M., Andrén, P., Nord, M., . . . Mataix-Cols, D. (2018). Psychometric evaluation of the Work and social adjustment scale, youth version (WSAS-Y): a generic measure of functional impairment in youth. Manuscript in preparation.

Jolstedt, M., Ljótsson, B., Fredlander, S., Tedgård, T., Hallberg, A., Ekeljung, A., . . . Vigerland, S. (2018). Implementation of internet-delivered CBT for children with anxiety disorders in a rural area: A feasibility trial. *Internet Interventions, 12*, 121-129. http://dx.doi.org/10.1016/j.invent.2017.11.003

Jolstedt, M., Wahlund, T., Lenhard, F., Ljótsson, B., Mataix-Cols, D., Nord, M., . . . Vigerland, S. (2018). Efficacy and cost-effectiveness of therapist-guided internet cognitive behavioural therapy for paediatric anxiety disorders: a single-centre, single-blind, randomised controlled trial. *The Lancet Child & Adolescent Health, 2*(11), 792-801. doi:https://doi.org/10.1016/S2352-4642(18)30275-X

Kendall, P. C. (1994). Treating anxiety disorders in children: results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology, 62*(1), 100-110. http://dx.doi.org/10.1037/0022-006X.62.1.100

Kertz, S., & Woodruff-Borden, J. (2012). The Role of Metacognition, Intolerance of Uncertainty, and Negative Problem Orientation in Children's Worry. *Behavioural and Cognitive Psychotherapy, 41*(02), 243-248. http://dx.doi.org/10.1017/S1352465812000641

Kessler, R. C., Sampson, N. A., Berglund, P., & Gruber, M. J. (2015). Anxious and non-anxious major depressive disorder in the World Health Organization World Mental Health Surveys. *Epidemiology and Psychiatric Sciences, 24*(3), 210-226. http://dx.doi.org/10.1017/S2045796015000189

Kilbourne, A. M., Beck, K., Spaeth-Rublee, B., Ramanuj, P., O'Brien, R. W., Tomoyasu, N., & Pincus, H. A. (2018). Measuring and improving the quality of mental health care: a global perspective. *World Psychiatry, 17*(1), 30–38. http://dx.doi.org/10.1002/wps.20482

Laugesen, N., Dugas, M. J., & Bukowski, W. M. (2003). Understanding Adolescent Worry: The Application of a Cognitive Model. *Journal of Abnormal Child Psychology, 31*(1), 55-64. http://psycnet.apa.org/doi/10.1023/A:1021721332181

Lebowitz, E. R., Woolston, J., Bar Haim, Y., Calvocoressi, L., Dauser, C., Warnick, E., . . . Leckman, J. F. (2013). Family accommodation in pediatric anxiety disorders. *Depression and Anxiety*(30), 47-53. http://dx.doi.org/10.1002/da.21998

Léger, E., Ladouceur, R., Dugas, M. J., & Freeston, M. H. (2003). Cognitive-Behavioral Treatment of Generalized Anxiety Disorder Among Adolescents: A Case Series. *Journal of the American Academy of Child & Adolescent Psychiatry, 42*(3), 327-330. http://dx.doi.org/10.1097/00004583-200303000-00013

Lundh, A., Kowalski, J., Sundberg, C. J., Gumpert, C., & Landén, M. (2010). Children's Global Assessment Scale (CGAS) in a naturalistic clinical setting: Inter-rater reliability and comparison with expert ratings. *Psychiatry Research, 177*(1-2), 206-210. http://dx.doi.org/10.1016/j.psychres.2010.02.006

Manassis, K., Lee, T. C., Bennett, K., Zhao, X. Y., Mendlowitz, S., Duda, S., . . . Wood, J. J. (2014). Types of parental involvement in CBT with anxious youth: A preliminary meta-analysis. *Journal of Consulting and Clinical Psychology, 82*(6), 1163-1172. https://doi.org/10.1037/a0036969

Martin, A. M., Fishman, R., Baxter, L., & Ford, T. (2011). Practitioners' attitudes towards the use of standardized diagnostic assessment in routine practice: a qualitative study in two child and adolescent mental health services. *Clinical Child Psychology and Psychiatry, 16*(3):407-20. http://dx.doi.org/10.1177/1359104510366284

Martinovich, Z., Saunders, S., & Howard, K. (1996). Some Comments on "Assessing Clinical Significance." *Psychotherapy Research, 6*(2), 124-132. http://dx.doi.org/10.1080/10503309612331331648

McGuire, J. F., & Storch, E. A. (2018). An Inhibitory Learning Approach to Cognitive-Behavioral Therapy for Children and Adolescents. *Cognitive and Behavioral Practice*. https://doi.org/10.1016/j.cbpra.2017.12.003

Merikangas, K. R., He, J., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L, Benjet, C., Georgiades. K., & Swendsen, J. (2010). Lifetime Prevalence of Mental Disorders in US Adolescents: Results from the National Comorbidity Study-Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(10), 980–989. https://doi.org/10.1016/j.jaac.2010.05.017

Moran, P., Kelesidi, K., Guglani, S., Davidson, S., & Ford, T. (2012). What do parents and carers think about routine outcome measures and their use? A focus group study of CAMHS attenders. *Clinical Child Psychology and Psychiatry, 17*(1):65-79. http://dx.doi.org/10.1177/1359104510391859

Mundt, J. C., Marks, I. M., Shear, M. K., & Greist, J. M. (2002). The Work and Social Adjustment Scale: a simple measure of impairment in functioning. *The British Journal of Psychiatry, 180*(5), 461-464. http://dx.doi.org/10.1192/bjp.180.5.461

Muris, P., Meesters, C., Merckelbach, H., Sermon, A., & Zwakhalen, S. (1998). Worry in Normal Children. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*(7), 703-710. http://dx.doi.org/10.1097/00004583-199807000-00009

Muris, P., Merckelbach, H., Meesters, C., & van den Brand, K. (2002). Cognitive Development and Worry in Normal Children. *Cognitive Therapy and Research, 26*(6), 775–787. http://dx.doi.org/10.1023/A:1021241517274

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking Rumination. *Perspectives on Psychological Science, 3*(5), 400-424. http://dx.doi.org/10.1111/j.1745-6924.2008.00088.x

Nordh, M., Vigerland, S., Öst, L.-G., Ljótsson, B., Mataix-Cols, D., Serlachius, E., & Högström, J. (2017). Therapist-guided internet-delivered cognitive–behavioural therapy supplemented with group exposure sessions for adolescents with social anxiety disorder: a feasibility trial. *BMJ Open, 7*(12), e018345-018312. http://dx.doi.org/10.1136/bmjopen-2017-018345

Ollendick, T. H., Öst, L.-G., Reuterskiöld, L., Costa, N., Cederlund, R., Sirbu, C., . . . Jarrett, M. A. (2009). One-session treatment of specific phobias in youth: A randomized clinical trial in the United States and Sweden. *Journal of Consulting and Clinical Psychology, 77*(3), 504-516. http://dx.doi.org/10.1037/a0015158

Orton, G. L. (1982). A comparative study of Children's worries. *The Journal of Psychology, 110*, 153-162. http://dx.doi.org/10.1080/00223980.1982.9915336

Osmanagaoglu, N., Creswell, C., & Dodd, H. F. (2018). Intolerance of Uncertainty, anxiety, and worry in children and adolescents: A meta-analysis. *Journal of Affective Disorders, 225*, 80-90. https://doi.org/10.1016/j.jad.2017.07.035

Payne, S., Bolton, D., & Perrin, S. (2011). A pilot investigation of cognitive therapy for generalized anxiety disorder in children aged 7–17 years. *Cognitive Therapy and Research, 35*(2), 171-178. http://dx.doi.org/10.1007/s10608-010-9341-z

Perrin, S., Bevan, D., Payne, S., & Bolton, D. (2018). *GAD-specific cognitive behavioral treatment for children and adolescents: A pilot randomized controlled trial*. Manuscript submitted for publication.

Pestle, S. L., Chorpita, B. F., & Schiffman, J. (2008). Psychometric Properties of the Penn State Worry Questionnaire for Children in a Large Clinical Sample. *Journal of Clinical Child and Adolescent Psychology, 37*(2), 465-471. http://dx.doi.org/10.1080/15374410801955896

Pinto, A., Van Noppen, B., & Calvocoressi, L. (2013). Development and preliminary psychometric evaluation of a self-rated version of the Family Accommodation Scale for Obsessive-Compulsive Disorder. *Journal of Obsessive-Compulsive and Related Disorders, 2*(4), 457-465. http://dx.doi.org/10.1016/j.jocrd.2012.06.001

Robichaud, M., & Dugas, M. J. (2005). Negative problem orientation (Part I): Psychometric properties of a new measure. *Behaviour Research and Therapy, 43*(3), 391-401. http://dx.doi.org/10.1016/j.brat.2004.02.007

Sexton, K. A., & Dugas, M. J. (2008). The Cognitive Avoidance Questionnaire: Validation of the English translation. *Journal of Anxiety Disorders, 22*(3), 355-370. http://dx.doi.org/10.1016/j.janxdis.2007.04.005

Shaffer, D., Gould, M. S., & Brasic, J. (1983). A children's global assessment scale (CGAS). *Archives of General Psychiatry, 40*(11), 1228-1231. http://dx.doi.org/10.1001/archpsyc.1983.01790100074010

Sheehan, D. V., Lecrubier, Y., & Sheehan, K. H. (1998). The Mini-International Neuropsychiatric Interview (MINI): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *The Journal of Clinical Psychiatry, 59*, 22-33.

Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour Research and Therapy, 36*(5), 545-566. http://dx.doi.org/10.1016/S0005-7967(98)00034-5

Tingey, R., Lambert, M., Burlingame, G., & Hansen, N. (2010). Assessing clinical significance: Proposed extensions to method. *Psychotherapy Research, 6*(2), 109-123. http://dx.doi.org/10.1080/10503309612331331638

Vigerland, S., Ljótsson, B., Thulin, U., Öst, L.-G., Andersson, G., & Serlachius, E. (2016). Internet-delivered cognitive behavioural therapy for children with anxiety disorders: A randomised controlled trial. *Behaviour Research and Therapy, 76*(C), 47-56. http://dx.doi.org/10.1016/j.brat.2015.11.006

Vigerland, S., Thulin, U., Ljótsson, B., Svirsky, L., Öst, L.-G., Lindefors, N., . . . Serlachius, E. (2013). Internet-Delivered CBT for Children with Specific Phobia: A Pilot Study. *Cognitive Behaviour Therapy, 42*(4), 303-314. http://dx.doi.org/10.1080/16506073.2013.844201

Walkup, J. T., Albano, A. M., Piacentini, J., Birmaher, B., Compton, S. N., Sherrill, J. T., . . . Kendall, P. C. (2008). Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *The New England Journal of Medicine, 359*(26), 2753-2766. http://dx.doi.org/10.1056/NEJMoa0804633

Weersing, V. R., Brent, D. A., Rozenman, M. S., Gonzalez, A., Jeffreys, M., Dickerson, J. F., . . . Iyengar, S. (2017). Brief behavioral therapy for pediatric anxiety and depression in primary care. *JAMA Psychiatry, 74*(6), 571-578. https://doi.org/10.1001/jamapsychiatry.2017.0429

Wells, A. (1995). Meta-Cognition and worry: A cognitive model of generalized anxiety disorder. *Behavioural and Cognitive Psychotherapy, 23*(03), 301. http://dx.doi.org/10.1017/S1352465800015897

Figure Caption

Figure 1. Weekly adolescent-rated worry and process measures through treatment and follow-up. Brief CAQ = Brief Cognitive Avoidance Questionnaire; Brief IUS = Brief Intolerance of Uncertainty Scale; NPOQ = Negative Problem Orientation Questionnaire; Brief WW2 = Brief Why Worry Questionnaire; PSWQ-C = Penn State Worry Questionnaire for Children.

Table 1

Demographic and Clinical Data for Each Participant

Participant	Age	Gender	Pre-treatment		
			PSWQ-C	Principal DX	CGI-S
P1	15	Male	30	Sub-threshold GAD	3
P2	13	Male	24	SEP	5
P3	14	Female	41	GAD	4
P4	14	Male	28	Sub-threshold Dep	3
P5	15	Female	34	GAD	4
P6	15	Female	40	SAD	6
P7	16	Female	36	GAD	5
P8	17	Female	27	GAD	4
P9	15	Female	29	GAD	4
P10	13	Female	41	GAD	5
P11	15	Male	38	GAD	5
P12	17	Female	38	GAD	4
M (SD)/%	14.9 (1.3)	67% Female	33.8 (6.0)	75% GAD	

Note. GAD = Generalized Anxiety Disorder; SEP = Separation Anxiety Disorder; SAD = Social Anxiety Disorder; Dep = Depression; CGI-S = Clinical Global Impression-Severity.

Table 2

Treatment Overview

Week	IU-CBT sessions for adolescents	Internet-delivered modules for parents
1	**Worry awareness.** Joint patient and parent session. Introduction to CBT, how thoughts, emotions and behaviors interact. Difference between problems and worries. *Homework*: Worry diary.	**Psycho-education.** Worry, IU, worry behaviors such as control and avoidance. *Homework:* Notice one's parental behaviors when the adolescent has a bout of worry. Discuss with adolescent how to collaborate in treatment.
2	**Worry behaviors.** Introduction to IU and its relationship to excessive worry. Psycho-education about control and avoidance behaviors. Goal setting. *Homework*: Worry diary including worry behaviors.	
3	**Exposure to uncertainty I.** Rationale for exposure in order to increase tolerance of uncertainty and reduce excessive worry. *Homework*: Worry diary. Try a behavior that increases uncertainty to see what happens.	**Parental behaviors** related to adolescents' worry such as reassurance, criticism. Rationale for behavior change for the adolescent. *Homework:* Notice one's own reactions to the adolescents worry. Invite the adolescent to an activity unrelated to worry to strengthen the relationship.
4	**Exposure to uncertainty II.** Introduction to exposure of avoided uncertain situations. *Homework*: Daily exposure to uncertain situations. Actively dealing with problems instead of avoiding them.	
5	**Exposure to uncertainty III.** Exposure to thoughts related to uncertainty. Three ways to expose oneself to thoughts: 1)	**Alternative parental behaviors.** Active listening, validation, encouraging the adolescent to solve problems actively.

	thinking "there is a risk the worst might happen", 2) inducing worry and refraining from control or avoidance, 3) writing down one's worst thoughts. *Homework*: Exposure to uncertainty (thoughts and situations).	Rationale for exposure to thoughts. *Homework:* Try alternative parental behaviors when the adolescent has a bout of worry. Continue joint activities unrelated to worry.
6	**Development and uncertainty.** How excessive worry may affect developmental tasks for adolescents, how exposure to uncertainty can help in facing the tasks. *Homework*: continue exposure, incorporating developmental tasks if relevant.	
7	**Summary so far.** Therapist and adolescent sum up treatment and formulate a plan for the adolescent to follow in case of a bout of worry. Exposure tasks related to particular worries that still bother the adolescent. *Homework:* Applying what has been learnt so far, continued exposure.	**Development and uncertainty.** How parents can support their adolescents in dealing with developmental tasks in adolescence despite uncertainty. *Homework:* delegate responsibility for a task to the adolescent. Repeat homework from the previous module.
8	**Evaluation of treatment goals**. Plan for rest of treatment: how many more sessions, which goals should be addressed further. *Homework:* Exposure to uncertainty (thoughts and situations).	
9	**Continued exposure.** Continued focus on exposure to uncertainty when needed. *Homework:* Exposure to uncertainty (thoughts and situations).	**Summary of treatment.** Summary of the parent program and of what the adolescent has been working with during IU-CBT.

10	**Repetition.** If needed, repetition of previous sessions and continued exposure. *Homework:* exposure.
11	**Maintenance plan.** Plan for maintenance of treatment gains. Psycho-education about setbacks and rationale for continued work after treatment. *Homework:* maintenance plan.
12	**Summary of treatment.** Summarizing treatment and evaluating treatment gains.

Note. Session or module theme of the week is in boldface.

Table 3

Means on the Primary, Secondary and Process Measures

Measure	Pre-Treatment *M* (*SD*)	Post-Treatment *M* (*SD*)	3-Month Follow-Up *M* (*SD*)	*F*(2,22) Value	Cohen's *d*
Adolescent-Report					
PSWQ-C	33.8[a] (6.0)	21.8[b] (7.8)	21.75[b] (9.7)	15.1***	2.00
RCADS-C Anxiety	49.7[a] (17.3)	27.8[b] (17.1)	24.9[b] (21.5)	6.26**	1.27
Brief IUS	9.7[a] (6.1)	6.1[b] (5.1)	5.3[b] (5.4)	6.5**	0.59
NPOQ	11.7[a] (5.8)	6.2[b] (6.1)	3.5[b] (3.7)	13.4***	0.89
Brief CAQ	11.5[a] (4.9)	4.3[b] (3.5)	3.9[b] (3.2)	17.0***	1.08
Brief WW2	4.1[a] (3.6)	1.2[a] (1.3)	1.7[a] (1.9)	4.3[ns]	0.81
EWSAS-C	16.2[a] (6.7)	12.0[a] (9.4)	9.2[b] (9.6)	6.0**	0.63
Parent-Report					
PSWQ-P	32.3[a] (6.9)	24.8[b] (8.1)	23.5[b] (10.4)	17.2***	1.09
RCADS-P Anxiety	38.4[a] (10.9)	32.6[a] (11.9)	31.9[a] (16.3)	0.88 [ns]	0.51
EWSAS-P	13.6[a] (7.0)	12.9[a] (6.5)	10.8[a] (8.1)	2.4[ns]	0.01
FASA	12.2[a] (8.3)	6.5[a] (5.2)	4.1[b] (2.3)	7.0**	0.69
Clinician-Report					
CGAS	57.1[a] (5.6)	64.1[b] (7.9)	69.7[c] (10.8)	15.3***	1.25

Note. Different superscripts (e.g., [a] vs [b]) indicate a significant difference between means in the repeated ANOVA post-hoc comparisons. Same superscripts (e.g., [a] vs [a]) indicate no significant difference between time-points.

PSWQ-C/P = Penn State Worry Questionnaire Child/Parent version; RCADS-C/P Anxiety = Revised Children's Anxiety and Depression Scale Child/Parent version Anxiety subscale; Brief IUS = Brief Intolerance of Uncertainty Scale; NPOQ = Negative Problem Orientation Questionnaire; Brief CAQ = Brief Cognitive Avoidance Questionnaire; Brief WW2 = Brief Why Worry 2; EWSAS-C/P = Education, Work and Social Adjustment Scale Child/Parent version; FASA = Family Accommodation Scale - Anxiety; CGAS = Children's Global Assessment Scale.

** $p < .01$. *** $p < .001$.

Highlights

- We evaluated a transdiagnostic treatment, IU-CBT, for 12 adolescents with excessive worry.
- The treatment combined individual sessions for adolescents with an online course for their parents.
- There were no dropouts and families were generally satisfied with the treatment.
- After treatment, 9 of 12 adolescents reported a reliable change in self-reported worry.
- The findings suggest that the treatment is feasible and potentially effective for adolescents with excessive worry.


P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
0
10
20
30
40
0
12
24
Brief CAQ
Brief IUS
NPOQ
Brief WW2
PSWQ-C

Figure 1