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The @school project : developmental considerations in the design and delivery of cognitive-behavioural therapy for adolescent school refusal

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Citation

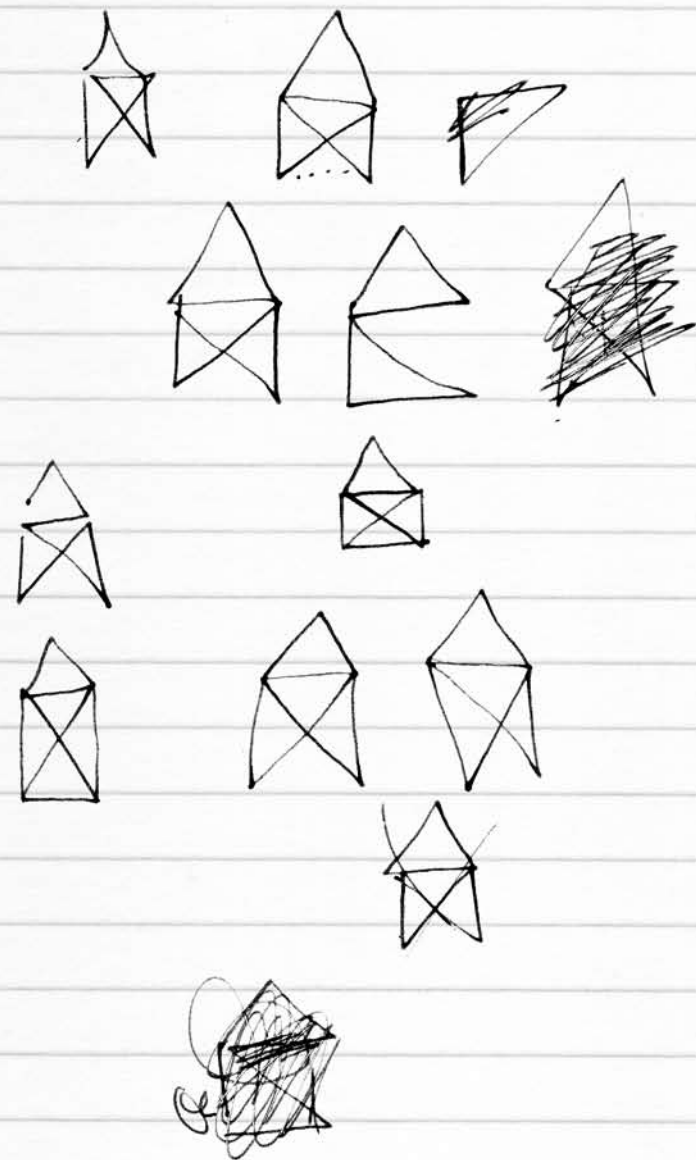
Sauter, F. M. (2010, June 23). *The @school project : developmental considerations in the design and delivery of cognitive-behavioural therapy for adolescent school refusal*. Retrieved from <https://hdl.handle.net/1887/15718>

Version: Not Applicable (or Unknown)

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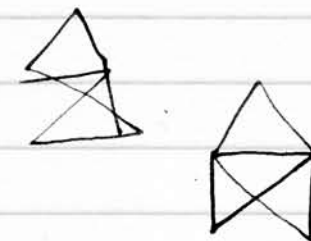
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Note: To cite this publication please use the final published version (if applicable).



Chapter 5

Developmentally-Appropriate Cognitive-Behavioural
Therapy for Adolescent School Refusal: A Preliminary
Evaluation of Efficacy and Acceptability



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Manuscript submitted for publication

Abstract

The objective of the current study was to evaluate the efficacy and acceptability of a developmentally-appropriate cognitive-behavioural treatment (CBT) for anxiety-based school refusal in adolescence, and to examine the influence of developmental factors (i.e., cognitive capacities; autonomy; clinician developmental appropriateness) on treatment outcome. Twenty adolescents (mean age = 14.6 years) and their parents participated in an open trial of the treatment. Outcome was assessed at post-treatment and two-month follow-up via attendance records, self-report, parent-report, and clinician ratings. Treated adolescents showed statistically and clinically significant improvements in school attendance, emotional symptoms, and self-efficacy, with medium to large effect sizes on average. All gains were maintained at follow-up, with further improvements observed for self-reported internalizing problems and parent-reports of youth anxiety. Developmental factors were significantly associated with changes in school attendance, school-related fears, and parent-reported internalizing problems. Adolescents, parents, school staff, and clinicians rated the treatment as acceptable. Developmentally-appropriate CBT shows promising efficacy and acceptability for the treatment of adolescent school refusal.

Introduction

School attendance problems such as truancy and anxiety-based school refusal pose a serious threat to a young person's academic and social-emotional development (Kearney, 2001). Anxiety-based school refusal (hereafter school refusal) is characterized by the young person having difficulty attending school and experiencing problematic levels of fear or anxiety (Berg, 2002; Egger, Costello, & Angold, 2003). It appears to be associated with developmental pathways different from truancy (Egger et al., 2003) and warrants anxiety-focused interventions (Heyne & Rollings, 2002). The most commonly evaluated treatment for school refusal, cognitive-behavioural therapy (CBT), has shown efficacy in promoting school attendance and reducing emotional symptoms (Heyne et al., 2002; King et al., 1998, 2001; Last, Hansen, & Franco, 1998).

Adolescent school refusers appear to be less responsive to CBT relative to children (Bernstein et al., 2000; Heyne, 1999; Last et al., 1998), which may be explained by several factors. School refusal in adolescence is more severe, involving greater absenteeism (Hansen, Sanders, Massaro, & Last, 1998). Further, as anxiety-disordered adolescents often have concurrent anxiety disorders and mood disorders (Ollendick, Jarrett, Grills-Tauchel, Hovey, & Wolff, 2008), it is likely that adolescents refusing to attend school similarly display greater diagnostic comorbidity relative to younger children. Another important consideration with respect to the treatment response of adolescent school refusers is the influence of developmental factors on the CBT therapeutic process (Sauter, Heyne, & Westenberg, 2009). For example, engagement in cognitive therapeutic techniques is influenced by the adolescent's CBT-relevant cognitive capacities (Manassis, 2009). In particular, those adolescents who have poor self-reflection and insight into thoughts, feelings, and behaviours may benefit less from CBT (Grave & Blissett, 2004), especially if treatment is not appropriately tailored to the cognitive capacities of these adolescents. Autonomy development can also impact CBT process and outcomes (Stallard, 2002b). Adolescent school refusers may prefer to decide for themselves about 'when and how' they return to regular school attendance, due to defiance fuelled by strivings for autonomy (Rubenstein & Hastings, 1980).

It seems imperative that CBT for school refusal be designed and delivered in a developmentally-appropriate way (Heyne, 2006). Sufficient attention must be paid to comorbid depression; the selection and delivery of cognitive therapeutic techniques should be guided by the adolescent's cognitive capacity; and autonomy strivings need to be considered when planning the parents' role in facilitating exposure (Sauter et al., 2009). Examples of developmentally-appropriate treatments for anxious adolescents have begun to emerge (e.g., Siqueland, Rynn, & Diamond, 2005), but until recently no adolescent-focused CBT for school refusal existed. Based on a review of the literature, Heyne, Sauter, and Van Hout (2008) modified and extended an existing practitioner guide (Heyne & Rollings, 2002) to promote clinician developmental appropriateness

when working with school-refusing adolescents. The resulting '@school project' treatment directs clinician attention to developmental factors including comorbid depression, adolescent cognitive capacity, and adolescent-parent problem-solving of school attendance issues. The present study examined the efficacy of this treatment in an open trial. It was hypothesized that treatment would be associated with increased school attendance, reduced emotional symptoms, and increased adolescent and parental self-efficacy. The relative importance of developmental variables (i.e., cognitive capacities; autonomy; clinician developmental appropriateness) in predicting treatment outcome was examined. No prior studies of treatment for school refusal or treatment for internalizing problems have addressed this question and thus it was examined exploratively. The acceptability of the developmentally-appropriate treatment was also investigated.

Method

Participants

Participants were referred to the study via the outpatient clinic of the Curium-LUMC, Leiden University Medical Centre (hereafter Curium) by schools, education welfare officers, general practitioners, and mental health professionals. Adolescents aged 10 to 18 years were included in the study if they met Berg and colleagues' (Berg, 2002; Berg, Nichols, & Pritchard, 1969) criteria for school refusal, operationalized as follows: i) less than 80 percent attendance during the past two school weeks (excluding legitimate absences); ii) presence of a DSM-IV anxiety disorder (except obsessive-compulsive disorder and posttraumatic stress disorder); iii) parents could account for the adolescent's whereabouts on days absent; iv) no current DSM-IV conduct disorder; v) current expressed parental commitment for their child to achieve regular school attendance.

Of the 32 families who took part in pre-treatment assessment, 12 were excluded in accordance with the following criteria: the absence of an anxiety disorder ($n = 2$), IQ < 80 ($n = 2$), autism spectrum disorder ($n = 1$), severe psychiatric disturbance requiring immediate attention ($n = 2$), seeking alternative treatment ($n = 2$), and adolescent refusal to participate in assessment despite motivational sessions ($n = 3$). Of the 20 families starting treatment (the intent-to-treat sample; ITT), one family withdrew during treatment to obtain assistance for difficulties associated with a probable autism spectrum disorder. Nineteen families were treatment completers (TC) who participated in post-treatment assessment, and 15 participated in the two-month follow-up.

The ITT sample comprised 14 males and 6 females of Dutch origin whose mean age was 14.6 years (range 11-17 years) and mean IQ was 100 (range 80-129; WISC-III, Wechsler, 1991). The average length of the current episode of school refusal was 6.5 months, and 65 percent had not attended school at all in the last two weeks. The adolescents' primary diagnoses were social phobia ($n = 8$), generalized

anxiety disorder ($n = 4$), anxiety disorder not otherwise specified (NOS) ($n = 4$), major depressive disorder ($n = 2$), dysthymia ($n = 1$), and panic disorder with agoraphobia ($n = 1$). Seventy-five percent had one or more comorbid disorders ($n = 12$ additional anxiety disorder; $n = 7$ additional mood disorder; $n = 3$ additional attention deficit and hyperactivity disorder). Fourteen adolescents (70%) came from a two-parent family. Where possible, both parents (including divorced parents with joint custody of their children) were encouraged to participate in assessment and treatment. Ultimately, 19 mothers and 13 fathers participated in the treatment sessions.

Design and procedure

Following referral, parents took part in telephone screening. The family was invited to participate in pre-treatment assessment if screening suggested that inclusion and exclusion criteria would be met. At pre-treatment, measures were administered by project clinicians or Master's-level students. Clinicians were five psychologists with Master's-level training in clinical/developmental psychology and one with post-graduate training in clinical psychology. During pre-treatment assessment, families were given information about the study and invited to provide written consent to participate. At post-treatment and two months following treatment, assessments were conducted by Master's-level students blind to treatment progress. The Committee for Medical Ethics of Leiden University Medical Centre approved the conduct of this study.

Assessments

Treatment outcome was assessed as follows. *School attendance* (% half days attended in 2 weeks prior to assessment) was based on inspection of school-based attendance registration. Irregularity in Dutch registration systems (Steketee, Mak, & Tierolf, 2009) meant that parent reports of school attendance were required in some cases at pre-treatment ($n = 5$), post-treatment ($n = 6$) and follow-up ($n = 9$). The *Anxiety Disorders Interview Schedule for Children* (ADIS-C/P; Silverman & Albano, 1996; Dutch translation and adaptation by Siebelink & Treffers, 2001) permitted the formulation of composite diagnoses in accordance with DSM-IV (American Psychiatric Association [APA], 1994), and it possesses good psychometric properties (Rapee, Barrett, Dadds, & Evans, 1994; Silverman & Eisen, 1992). Clinicians rated the global functioning of each adolescent using the *Global Assessment of Functioning Scale* [GAF] (APA, 1994). The *School Fear Thermometer* (SFT; Heyne & Rollings, 2002) and 12 school-related items from the *Fear Survey Schedule for Children-Revised* (FSSC-R-SI; Ollendick, 1983; Dutch translation and adaptation by Oosterlaan, Prins, Hartman, & Sergeant, 1995) assessed school-related fears. Child and parent versions of the *Multidimensional Anxiety Scale for Children* (MASC and MASC-P; March, 1997; Dutch translation and adaptation by Utens & Ferdinand, 2000, 2006) and the *Children's Depression Inventory* (CDI; Kovacs, 1992; Dutch translation and adaptation by Braet & Timbremont, 2002)

were used to assess the adolescents' anxious and depressive symptoms. These are both valid and reliable instruments (Baldwin & Dadds, 2007; Kovacs, 1992; Rynn et al., 2006). The well-established *Youth Self Report* (YSR; Achenbach, 1991b; Dutch translation and adaptation by Verhulst, Van der Ende, & Koot, 1997) and *Child Behavior Checklist* (CBCL; Achenbach, 1991a; Dutch translation and adaptation by Verhulst, Van der Ende, & Koot, 1996) assessed internalizing and externalizing problems via self- and parent-report respectively. Adolescents and parents completed self-efficacy questionnaires (*Self-Efficacy Questionnaire for School Situations-Dutch version* [SEQ-SS-NL]; Heyne et al., 2007; *Self-Efficacy Questionnaire for Responding to School Attendance Problems* [SEQ-RSAP]; Heyne, Maric, & Westenberg, 2007).

For the prediction analyses, adolescents were administered two psychometrically-adequate instruments. The *Self-Reflection and Insight Scale for Youth* (SRIS-Y; Sauter, Heyne, Blöte, Van Widenfelt, & Westenberg, in press) contained two subscales which measured respectively self-reflection and insight. The *Adolescent Autonomy Questionnaire* (AAQ; Noom, Dekovic, & Meeus, 2001) contained subscales which measured respectively attitudinal, emotional, and functional autonomy. In addition, the *Clinician Developmental Appropriateness Scale* (CDAS; Sauter, 2009) was used by trained observers blind to treatment progress to rate 20% of recorded therapy sessions according to developmental appropriateness (0 = not at all to 3 = very much/always; exemplary item: 'Uses different techniques to access automatic thoughts').

All participants completed the *Multidimensional Assessment of Non-Specific Aspects of Treatment* (MANSAT; Sauter, Heyne, & Michalopoulos, 2006) which assessed treatment credibility, acceptability, satisfaction, and safety (maximum subscale score = 8). Participants were also asked to give the treatment a grade out of ten.

Treatment

Adolescents and their parents received a developmentally-appropriate modularized CBT for adolescent school refusal, the '@school project'. Given the large individual differences among adolescents (Weisz & Hawley, 2002) and the heterogeneity in the school refusal population (Heyne, 2006), the '@school project' was designed to permit flexibility in treatment delivery. A clinical case formulation based upon pre-treatment assessment informed treatment planning (i.e., the selection, timing, dosing, and developmental tailoring of manualized treatment modules; Chorpita, 2007). A treatment plan for adolescent and parent sessions was collaboratively developed by the clinicians and clinical supervisor at pre-treatment. The plan was reviewed and was adapted if needed at 1/3 through treatment and 2/3 through treatment. The treatment manual incorporated cognitive-behavioural interventions in the form of compulsory modules and optional modules (for a description of the '@school project' modules and treatment planning, see Sauter, Heyne, Ollendick, Van Widenfelt, & Westenberg [2010]). Modules prompted clinician consideration of developmentally-

appropriate parent-involvement (i.e., a balance between an autonomy-granting role and an authoritative role in facilitating attendance); and the use of developmentally-appropriate language, activities, and materials. Several treatment modules specific to the adolescent age group were introduced into the '@school project' (e.g., 'Dealing with Depression') and others were adapted to account for the specific developmental capacities and needs of adolescents (e.g., 'Dealing with Cognition').

Treatment was delivered individually, and one clinician worked with the young person while another worked with the parent(s). Ten to sixteen sessions were conducted with the adolescent ($M = 12.95$) and with his/her parents ($M = 12.45$). Most commonly, two of these sessions ($M = 1.7$) were conducted jointly with the adolescent and parents. School staff (e.g., year coordinators) were involved in one or two school-based meetings ($M = 1.7$) and regular telephone/email contact. In the first half of treatment, families ideally attended sessions twice a week to facilitate early resumption of school attendance. In the second half of treatment sessions were scheduled weekly to allow for trouble-shooting during the adolescent's efforts to attend school regularly. On average, the treatment took place across 16 weeks ($SD = 5.81$). Two booster sessions were offered in the two months following treatment (M uptake: adolescents = .75, parents = .45).

Treatment integrity

Efforts to promote treatment integrity included 20-day clinician training in the treatment manual, supervised treatment of two pilot cases prior to study inclusion, and weekly supervision by a registered cognitive-behavioural therapist. Treatment sessions were recorded on DVD and a random sample (20%) was reviewed for adherence to the manual. A scoring protocol was developed to assess 'module adherence' [MA] (i.e., adherence to each module component; 0 = not covered; 1 = covered inadequately; 2 = covered adequately; 3 = covered more than adequately). MA was assessed by independent observers trained to adequate inter-rater reliability ($ICC > 0.60$, Cicchetti & Sparrow, 1981) before scoring adolescent sessions ($n = 46$) and parent sessions ($n = 44$). Clinicians adhered adequately to the treatment manual (M MA = 2.4 for adolescent sessions and 2.2 for parent sessions).

Data analysis

Data from the ITT sample were used to test the hypothesis that treatment would be associated with improvements in school attendance, emotional symptoms, and self-efficacy. The Last Observation Carried Forward method was used for missing data. Repeated measures analyses of variance were conducted with outcome measures, using repeated contrasts to compare means at the different assessment moments. Within-subjects effect sizes (i.e., d) were obtained and interpreted in accordance with Cohen's (1988) criteria: .20 (small effect), .50 (medium effect), and .80 (large effect). The ITT sample was also used to investigate treatment response, reliable change, and

clinically significant change. Treatment responders/non-responders were classified on the basis of the absence/presence of an anxiety disorder at follow-up and/or attendance $< 90\%$ / $\geq 90\%$ at follow-up. Reliable change between pre-treatment and follow-up was determined for key outcome measures for which the Standard Error of Measurement could be determined, namely the FSSC-R-SI, CDI, and CBCL-Internalizing, using cutoff type A (Jacobson & Truax, 1991). The clinical significance of change was assessed in relation to school attendance (attendance of $\geq 90\%$; Heyne et al., 2002) and depression (score ≥ 13 ; Kovacs, 1992).

To determine possible associations between developmental variables (i.e., cognitive capacities [SRIS-Y subscales], autonomy [AAQ subscales], clinician developmental appropriateness) and change in residual gain scores of key outcome measures (pre-treatment to follow-up changes in Attendance, FSSC-R-SI, CDI, and CBCL-Internalizing), Pearson's product-moment correlations were calculated using the treatment completer sample. In addition, the means of the developmental variables were compared for the responders and non-responders at follow-up. Developmental variables which showed a significant correlation with outcome variables or a statistically significant difference between responders and non-responders were then entered into simple or multiple regression analyses to assess their predictive value. Treatment acceptability was examined via the descriptive statistics derived from administration of the MANSAT.

Results

Treatment efficacy

The results of the repeated measures analyses of variance presented in Table 1 revealed significant improvements across time on the majority of outcome measures. The average effect size of the improvements between pre-treatment and follow-up (M Cohen's $d = .79$) was larger than the average effect size of changes between pre-treatment and post-treatment (M Cohen's $d = .64$). Significant time-related increases were found in school attendance levels. According to the repeated contrasts, attendance levels increased significantly between pre-treatment and post-treatment ($F(1,19) = 8.45, p < .01$), with no change between post-treatment and follow-up. At post-treatment, 25% ($n = 5$) of adolescents were free of any anxiety diagnosis. By follow-up, 45% ($n = 9$) were free of any anxiety diagnosis (McNemar test pre-follow-up: $n = 20, p < .01$). At pre-treatment, mood disorders were diagnosed in 45% of the sample ($n = 9$). At post-treatment, seven of these nine adolescents (78%) were free of a mood diagnosis, and the same seven adolescents continued to be free of mood disorder at follow-up (McNemar test pre-post $n = 20, p < .01$; pre-follow up: $n = 20, p < .01$). The adolescents' overall functioning (GAF) increased across time, with repeated contrasts revealing significant changes between pre-treatment and post-treatment ($F(1, 19) = 18.62, p < .01$) and no deterioration at follow-up.

Significant reductions in adolescents' self-reports of fear, anxiety, depression,

and internalizing problems were observed between pre-treatment and follow-up. The repeated contrasts revealed that significant reductions occurred between pre-treatment and post-treatment (FSSC-R-SI: $F(1,15) = 14.52, p < .01$, MASC: $F(1,15) = 19.52, p < .001$, CDI: $F(1,15) = 15.99, p < .001$, YSR-Internalizing: $F(1,17) = 5.98, p < .05$). Further significant reductions in self-reported internalizing problems (YSR) were observed between post-treatment and follow-up ($F(1,17) = 9.27, p < .01$). Self-reported school-related fears (SFT) did not change between pre-treatment and post-treatment, but decreased significantly between post-treatment and follow-up ($F(1,15) = 5.93, p < .05$). Significant reductions in parent-reported youth anxiety (MASC-P) occurred between pre-treatment and post-treatment ($F(1,15) = 4.79, p < .05$), as well as between post-treatment and follow-up ($F(1,15) = 5.69, p < .05$). CBCL-Internalizing decreased significantly between pre-treatment and follow-up ($F(1,14) = 6.15, p < .05$). No changes were observed with respect to externalizing problems as reported by adolescents or parents.

Adolescents reported significant pre-treatment to follow-up improvements in self-efficacy related to school attendance. The repeated contrasts indicated that significant changes occurred between pre-treatment and post-treatment ($F(1,15) = 14.60, p < .01$). Likewise, parental self-efficacy for managing school refusal increased over time, with significant change occurring between pre-treatment and post-treatment ($F(1,12) = 6.72, p < .05$). No significant change was observed between post-treatment and follow-up with respect to adolescent or parent reports of self-efficacy.

Forty-five percent ($n = 9$) of the sample were classified as responders at follow-up (i.e., were diagnosis free and/or attending school $\geq 90\%$ of the time). Seven of the nine responders satisfied both criteria. The most common diagnosis amongst non-responders at follow-up was social anxiety (64%, $n = 7$). Reliable change in emotional symptoms at follow-up was observed as follows: 47% on the CBCL-Internalizing, 35% on the FSSC-R-SI, and 41% on the CDI. By follow-up, seven adolescents (35%) attended school at least 90% of the time, and two other adolescents achieved 80% attendance. Of the eight adolescents with clinical levels of depressive symptoms at pre-treatment, four (50%) were no longer in the clinical range at follow-up, with another two adolescents scoring just above the cutoff (score of 14).

Table 1.
Mean Scores (Standard Deviations) of Outcome Measures at Pre-treatment, Post-treatment and Follow-up

Variable	Pre-treatment	Post-treatment	Follow-up	F	d Post	d FUP
Attendance (%)	15.25 (27.60)	Self-report 40.50 (45.59)	47.75 (46.69)	8.95**	.67	.85
SFT	49.44 (34.68)	43.00 (36.37)	28.94 (34.76)	2.37 ^a	.18	.59
School-related items of the FSSC-R-SI	19.50 (5.13)	16.75 (3.00)	15.69 (3.44)	16.00**	.65	.87
MASC	45.69 (20.83)	34.19 (18.85)	34.41 (20.78)	11.53**	.56	.54
CDI	15.56 (9.14)	10.25 (6.36)	9.25 (7.64)	17.07**	.67	.75
YSR Internalizing (T scores)	64.17 (10.80)	58.89 (12.85)	55.06 (14.09)	7.31***	.45	.73
YSR Externalizing (T scores)	48.22 (10.34)	45.00 (8.73)	45.00 (8.61)	2.04	.34	.34
SEQ-SS-NL	80.81 (10.73)	90.06 (9.90)	92.50 (11.71)	10.76***	.90	1.04
MASC-P	49.14 (21.80)	Parent-report 40.69 (22.86)	34.55 (18.04)	8.93***	.38	.73
CBCL Internalizing (T scores)	68.00 (9.18)	62.27 (12.43)	58.53 (14.57)	4.65**	.52	.78
CBCL Externalizing (T scores)	53.20 (10.27)	52.53 (10.74)	48.87 (10.78)	1.34	.06	.40
SEQ-RSAP	76.24 (9.81)	83.31 (8.75)	87.25 (10.98)	6.75***	.76	1.06
GAF	50.50 (4.84)	Clinician-report 60.10 (12.04)	63.00 (17.27)	12.27***	1.05	.99

Note. Attendance: % attendance in 2 weeks prior to assessment; CBCL: Child Behavior Checklist; CDI: Children's Depression Inventory; FSSC-R-SI: Fear Survey Schedule for Children-Revised; GAF: Global Assessment of Functioning Scale; MASC: Multidimensional Anxiety Scale for Children; MASC-P: Multidimensional Anxiety Scale for Children-Parent Version; SFT: School Fear Thermometer; SEQ-RSAP: Self-Efficacy Questionnaire for Responding to School Attendance Problems; SEQ-SS-NL: Self-Efficacy Questionnaire for School Situations-Dutch Version; YSR: Youth Self Report. All parent-report data was based on mothers' reports given low completion rates by fathers. Significance level of .05 was maintained because the small sample size resulted in an increased probability of a Type II error (Lerman, 1996).

* $p < .05$; ** $p < .01$; *** $p < .001$ [One tailed]. d = Cohen's d . ^a Greenhouse-Geisser correction applied.

Prediction of treatment outcome

No significant associations were found between demographic variables (age, gender, SES) and developmental variables or outcome variables; therefore these variables were not included in the regression analyses. Change in attendance was significantly associated with clinician developmental appropriateness ($r = .71, p < .01$). Significant positive associations were also found between change in school-related fears (FSSC-R-SI) and three developmental variables: insight (SRIS-Y; $r = .67, p < .05$), functional autonomy ($r = .59, p < .05$), and emotional autonomy (AAQ; $r = .58, p < .05$). Change in internalizing problems (CBCL) was significantly and negatively associated with functional autonomy (AAQ; $r = -.59, p < .05$). No significant associations were found between change in self-reported depressive symptoms and the developmental variables. Likewise, no significant differences were found between the responders and non-responders with respect to mean scores on the developmental variables.

Table 2.
Main Results of Regression Analyses for the Prediction of Change in Attendance, Self-Reported School-Related Fears, and Mother-Reported Internalizing Problems.

	B	SE B	β
Attendance CDAS	1.99	.55	.71**
CBCL-INT Functional autonomy subscale of the AAQ	-.11	.05	-.59*
FSSC-R-SI SRIS-Y Insight subscale	.06	.02	.56*
Emotional autonomy subscale of the AAQ	.07	.03	.44
Functional autonomy subscale of the AAQ	.03	.04	.21

Note. AAQ: Adolescent Autonomy Questionnaire; Attendance: % attendance in 2 weeks prior to assessment; CBCL: Child Behaviour Checklist; CDAS: Clinician Developmental Appropriateness Scale; FSSC-R-SI: Fear Survey Schedule for Children-Revised; SRIS-Y: Self-Reflection and Insight Scale for Youth.
* $p < .05$; ** $p < .01$.

Results of the regression analyses are presented in Table 2. The simple regression analysis predicting change in school attendance indicated that clinician developmental appropriateness accounted for a significant proportion of the variance ($R^2 = .52, p < .01$), and the simple regression analysis predicting change in internalizing problems indicated that adolescent functional autonomy accounted for a significant proportion of the variance ($R^2 = .35, p < .05$). The results of the backwards stepwise multiple regression analysis predicting change in school-related fears revealed that insight accounted for approximately a third of the variance ($R^2 = .35, p < .05$). Entering emotional autonomy and functional autonomy did not contribute significantly to the model.



Treatment acceptability

Across all respondents (adolescents, parents, school staff, and clinicians), satisfaction with the '@school project' was high ($M = 6.18$; $SD = 1.49$). Averaged ratings were also high for treatment acceptability ($M = 6.61$, $SD = .92$), credibility ($M = 7.03$, $SD = .88$), and safety ($M = 7.48$, $SD = 1.10$). The average grade (out of 10) for the '@school project' was 7.9 by adolescent reports ($SD = 1.39$), 8.3 by parent reports ($SD = 1.63$), and 6.9 by school staff ($SD = 1.81$).

Discussion

The current study presents a preliminary evaluation of the efficacy and acceptability of the '@school project' for adolescent school refusers. In support of the hypothesis, self-reported fear, anxiety, depression and internalizing problems, and parent-reported anxiety and internalizing problems decreased significantly across time, with medium to large effect sizes on average. Forty-five percent of the adolescents attended school at least 80 percent of the time at follow up, and almost half (45%) were free of any anxiety disorder at two-month follow-up. This remission rate is noteworthy, because it is in line with recent CBT studies which did not focus on anxious adolescents alone, but on samples combining anxious adolescents and children (Bodden et al., 2008; Liber et al., 2008). In addition, the average attendance rate at post-treatment was in line with other studies of interventions for school-refusing children and adolescents (range 47%-100%; Pina, Zerr, Gonzales, & Ortiz, 2009).

The increase in school attendance as reported in the current study is particularly encouraging in view of Bernstein and colleagues' (2000) study of anxious-depressed school-refusing adolescents receiving CBT+imipramine or CBT+placebo. In the current study, mean pre-treatment attendance was similar to that in Bernstein et al., but the post-treatment attendance level in the current study ($M = 40.5\%$) was considerably higher than in Bernstein and colleagues' CBT+placebo condition ($M = 27.6\%$). This might be explained by the developmental appropriateness of the current treatment, or by the higher rate of comorbid depressive disorder in the study of Bernstein et al. Comparing the results of the current study with those of studies combining school-refusing children and adolescents (e.g., Heyne et al., 2002; King et al., 1998), inferior response rates were found with respect to improved school attendance and remission of anxiety disorder. However, it is possible that the developmentally-appropriate '@school project' yielded higher response rates than would have been achieved if the adolescents in the current study had received earlier versions of CBT for school refusal (i.e., Heyne & Rollings, 2002).

It is noteworthy that social anxiety disorder was the most prevalent diagnosis at pre-treatment ($n = 8$; 40%), and the most common disorder among non-responders at post-treatment and follow-up. Bernstein, Hektner, Borchardt, and McMillan (2001) also reported that social anxiety disorder and avoidant disorder were the most common diagnoses among adolescents participating in a one-year follow-up of the

Bernstein et al. (2000) study. School-refusing adolescents presenting with social anxiety may experience particularly severe anxiety when faced with return to regular school attendance, due to the complex and unpredictable nature of social situations in high schools (Albano, 1995). Although the current treatment contained a module directed at enhancing social competencies related to school refusal (e.g., how to deal with questions from classmates about absence from school), some socially anxious school-refusing adolescents may benefit from additional anxiety management strategies such as medication (e.g., Bernstein et al., 2000, 2001) or group-therapeutic components aimed at facilitating exposures to social situations (e.g., Albano, 1995).

The majority of mood-disordered adolescents in the current study were free of their mood disorder at post-treatment and at follow-up. Previously, clinical researchers have recommended "aggressive" treatment for anxious-depressed school refusers, potentially incorporating medication (Bernstein et al., 2000, p. 212). Several aspects of the current treatment may account for the reduction in mood disorders in the absence of medication. The current treatment involved more sessions (approximately 13 sessions versus 8 sessions in Bernstein et al., 2000), it included a module directed at managing depressive symptoms (i.e., behavioural activation), there was greater parental participation, and parent-adolescent problem-solving sessions were incorporated.

Adolescent school refusers reported greater self-efficacy between pre-treatment and follow-up, echoing the findings of previous studies of CBT for school refusal (Heyne et al., 2002; King et al., 1998). Such increases in perceived ability to cope with attendance-related situations may have contributed to the observed increase in school attendance (Maric, Heyne, MacKinnon, Van Widenfelt, & Westenberg, 2010). Mothers also reported a significant increase in self-efficacy for managing school refusal, suggesting that parent-focused work in the '@school project' helped to support and empower parents. Enhanced parental self-efficacy may lead parents to play a greater role in facilitating exposure, thereby fostering the adolescent's sense of mastery and self-efficacy (Wood, McLeod, Sigman, Hwang, & Chu, 2003).

We also examined the role of developmental factors in predicting treatment outcome. These findings must be interpreted with caution given the small sample size, but it is important to speculate on their meaning. The more a clinician was developmentally-appropriate in conducting the treatment with the adolescent, the greater the increase in attendance. Clinicians who are highly developmentally-appropriate may be selecting and applying treatment strategies in a way which best fits with the needs and capacities of their adolescent clients. This may increase an adolescent's receptiveness to therapeutic strategies aimed at helping them to 'face their fears' (Sauter, Heyne, & Westenberg, 2009), which in turn may facilitate increases in school attendance. Higher levels of adolescent insight predicted greater reductions in reports of school-related fears. Adolescents with more insight into thoughts, feelings, and behaviours may be better placed to acquire and employ strategies to

cope with fear-evoking stimuli relative to their less cognitively-advanced counterparts. Finally, greater functional autonomy predicted smaller changes in mother-reported internalizing problems. Adolescents who strive for and achieve functional autonomy (i.e., implementing strategies to achieve their own goals; Noom et al., 2001) may be reluctant to comply with clinician and parent prompts to confront anxiety-provoking situations, resulting in fewer reductions in emotional symptoms. In all, the results of these prediction analyses reinforce the value of closely considering developmental factors in the design and delivery of CBT for anxious adolescents.

Responses from all participants in the '@school project' suggested that the newly developed treatment was highly acceptable. It is tenable that the perceived acceptability of the treatment contributed to the very low attrition rate. The modularization of CBT may have contributed to its acceptability for adolescent clients, in that it allowed for individualization of treatment through flexibility in the selection, timing, and dosage of therapeutic strategies (Weisz & Hawley, 2002).

Several limitations of the study are noteworthy. Firstly, the relatively small sample size resulted in reduced power to detect effects. Secondly, this was an uncontrolled study. Thirdly, the sample was ethnically homogenous and included more males than females. To determine the generalizability of the findings, evaluation in a larger randomized controlled trial is recommended, including comparison with other treatments (e.g., CBT+medication), further development and emphasis on treatment components aimed at the management of social anxiety, and a longer follow-up.

In conclusion, this study provides initial support for the efficacy of a developmentally-appropriate treatment for school-refusing adolescents aimed at reducing internalizing problems, increasing regular school attendance, and increasing self-efficacy. It is also the first study to demonstrate increases in parental self-efficacy for managing school attendance problems. The treatment may be particularly beneficial for adolescent school refusers experiencing depression symptoms, a common phenomenon in this age-group. Further adaptations to the treatment protocol may be needed to better respond to the needs of school-refusing adolescents with social anxiety. Finally, based on a unique exploration of the association between developmental factors and CBT outcomes, the results lend tentative empirical support to the oft-cited notion that clinicians who take the developmental needs and capacities of their adolescent clients into account are more likely to enhance the effectiveness of their treatments.

