The FRIENDS Cognitive Behavioral Program in Japanese schools: An examination of the treatment effects

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Abstract

Cognitive behavioral therapy (CBT) for childhood anxiety is effective in schools; however, researchers have reported mixed results and expressed concerns regarding sociocultural differences in treating childhood anxiety. This study examined the efficacy of the FRIENDS program, which is a CBT program used at a universal school level. Students ($N = 154$; 11- to 12-years-old) participated in either a program or waitlist condition and completed the Spence Children's Anxiety Scale at prior and subsequent to implementation of the program and during follow up. Results revealed a significant interaction between group and gender in the social phobia subscale and a significant main effect of gender in six subscales. The feasibility and limitations of universal CBT in a Japanese school setting are discussed.

Keywords

childhood anxiety, cognitive behavioral therapy, FRIENDS for Life for Children, gender difference, social phobia, universal preventive program

Anxiety is considered one of the most prevalent forms of psychological distress in childhood and youth (e.g. Albano, Chorpita, & Barlow, 2003). Costello, Mustillo, Erkanli, Keeler, and Angold (2003) found that 15% of children would experience

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anxiety symptoms at a clinical level by the age of 16-years-old. Similar prevalence has been estimated in Japan (Ishikawa, 2013). The majority of studies have found that differences in the prevalence of anxiety disorders emerge during the progression from childhood to adolescence; for example, in children of this age, reduced rates of separation anxiety disorder (Copeland, Angold, Shanahan, & Costello, 2014) and increased rates of panic disorder, agoraphobia, and obsessive compulsive disorder (OCD) have been observed in both sexes (Costello et al., 2003), and social anxiety disorder and generalized anxiety disorder have been observed in girls (Copeland et al., 2014; Costello et al., 2003). Therefore, treatment of anxiety in early adolescents should account for gender differences.

Anxiety could lead to an increase in the onset of other psychological disorders such as mood disorders, substance use disorders, and suicidality (see Öst & Treffers, 2000). Untreated anxiety in children and adolescents could lead to mental health problems, such as anxiety disorders (Kim-Cohen et al., 2003), depression, substance abuse, and increased use of medical services (Donovan & Spence, 2000; Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005), in adulthood. Research has revealed relationships between anxiety and school performance, which includes poor concentration in academic tasks (Ma, 1999), and social functioning, which includes school refusal (King & Bernstein, 2001). However, interventions designed to reduce anxiety in students could improve school performance and social functioning (Wood, 2006). Therefore, the prevention of anxiety appears essential for school-age children.

Schools play a significant role in promoting positive mental health and providing support (Green et al., 2013), but there are numerous barriers, including time, cost, availability, commitment and location, to accessing psychological interventions in mental health services (Jorm & Wright, 2007). To address these barriers, research using mainly CBT components has demonstrated the efficacy of school-based preventive programs at universal, selective, and indicated levels (see, Neil & Christensen, 2009). Schools are at an advantage in preventing psychological problems with respect to reducing stigma, accessing treatment, and sustaining acquired competences (Miller et al., 2011). Despite their potential, school-based universal prevention programs for childhood anxiety are scarce (e.g. Essau, Conradt, Sasagawa, & Ollendick, 2012). The reason for low usage could be that it is difficult to adjust an intervention to universal school settings, which involve students with different levels and/or symptoms of anxiety. For example, of all school-based depression programs for children and adolescents, universal programs displayed the lowest levels of efficacy and effectiveness (Calear & Christensen, 2010), and groups with higher symptom levels benefited more relative to those with lower symptom levels (Merry, McDowell, Hetrick, Bir, & Muller, 2004). Therefore, indicated and selective programs were found to be more effective relative to universal interventions (Reivich, Gillham, Chaplin, & Seligman, 2012).

Regardless of mixed results in the evaluation of school-based universal prevention programs, the FRIENDS program (Barrett, 2010; Barrett, Lowry-Webster, & Turner, 1999) is exceptional and has been endorsed by the World Health Organization (2004) as the only evidence-based program that is effective in treating

children's anxiety and depression at all intervention levels. However, the results of randomized trials examining the effectiveness of the program in school-based universal settings have been inconsistent. Essau et al. (2012) assessed the effectiveness of the program in children in Germany ($N = 638$; age: 9- to 12-years-old) and found significantly greater reductions in anxiety and depression in the intervention group, relative to those of the control group, in younger (aged 9- to 10-years-old) but not older children (aged 11- to 12-years-old) immediately subsequent to the intervention; in addition, older children demonstrated program effects at six- and 12-month follow up. Miller et al. (2011) conducted a cluster randomized controlled trial to examine the effects of the program in children in Canada ($N = 533$ including 192 Aboriginal students; age: 10- to 12-years-old) and revealed significant differences between the active treatment and waitlist groups in students with elevated levels of anxiety; however, this effect was not observed in Aboriginal students. In light of these findings, the authors expressed concern regarding sociocultural differences in anxiety treatment in schoolchildren.

Childhood anxiety levels revealed via self-report measures appear to differ between societies. For example, a cross-cultural comparison between Japan and England (Essau, Ishikawa, & Sasagawa, 2011) revealed higher levels of anxiety in English adolescents aged 12- to 17-years-old relative to those of their Japanese counterparts. Ishikawa (2013) also found that, relative to Japanese children, Australian children showed higher anxiety levels, while Dutch children exhibited lower scores for a self-report measure. In addition, there appear to be sociocultural features present in anxiety symptoms. Japanese research using the Spence Children's Anxiety Scale (SCAS; Spence, 1998) found that the items most frequently endorsed by Japanese students were those of the obsessive-compulsive and social phobia (SP) subscales and included 'I have to keep checking that I have done things like turning the switch off or locking the door' and 'I worry what other people think of me', respectively. The researchers speculated that Japanese teachers' disciplinary techniques could encourage checking behaviors in students (Ishikawa, Sato, & Sasagawa, 2009). With respect to the SP subscale item, the collectivist culture could have resulted in interactional impairments known to be associated with SP (McCarthy & Shean, 1996). Therefore, Japanese students were shown to demonstrate excessive awareness of others including peers and teachers.

Research has shown that the early onset of phobic disorders predicts other serious disorders, such as major depressive disorder, at a later stage, and SP was a significant predictor of subsequent major depressive disorder onset in Japan (Tsuchiya et al., 2009). SP includes fears concerning others, including being embarrassed by others, and social situations, such as those involving performance anxiety, and recovery could be difficult without treatment (Bener, Ghuloum, & Dafeeah, 2011). In addition, in students aged 12- to 17-years-old, the presence of social anxiety disorder was associated with poorer treatment outcomes relative to those observed in students aged 7- to 11 years-old (Kendall et al., 2010). Therefore, this study examined the efficacy of social anxiety treatment in Japanese adolescents.

In summary, the effectiveness of the program in school-based universal settings should be examined with consideration of sociocultural differences in anxiety symptoms and/or levels and gender differences in treatment outcomes. To address the aforementioned concerns, the current research considered anxiety symptoms and levels in Japanese sixth graders and sought to determine whether a universal school setting would be a good arena in which to provide CBT to reduce anxiety. The researchers implemented the FRIENDS for Life for Children (Barrett, 2010) program at a universal school level and employed a 2 (program and waitlist groups) × 2 (boys and girls) × 2 (Times 1 and 2) factorial design to examine the efficacy of the program in treating anxiety characterized by Japanese social contexts observed in the literature. A 1 (program) × 3 (Times 1, 2, and 3) factorial design was used to assess the maintenance of effects.

This study tested the following three hypotheses: 1. The students in the FRIENDS treatment program will display significantly lower SP scores relative to those of students in the waitlist comparison group. 2. Treatment outcomes will differ according to gender. 3. The students in the FRIENDS treatment program will display significantly lower anxiety scores at Time 3 relative to those observed at Times 1 and 2.

Method

Intervention

The FRIENDS for Life for Children program (Barrett, 2010), the revised version of Friends for Children (Barrett et al., 1999), was developed in Australia and is a school-based CBT program that aims to reduce anxiety in children aged 8- to 11-years-old. The program is a structured, ten-session program with three main CBT-based components: Learning/behavior, cognition, and physiology. The learning/behavior component involves helping children to solve problems, use coping skills, expose themselves to feared situations gradually, reward themselves for brave behavior, and identify positive role models and support networks. The cognition component involves challenging negative self-talk, help in using positive self-talk, and attention training. The physiology component involves teaching self-regulation and awareness of bodily clues and using relaxation techniques. The program teaches skills that are beneficial in providing opportunities for normalization, social interactions, modeling, peer and group feedback, and exposure to possible feared interpersonal contexts and/or school situations for all students. It is recommended that the program involve two booster sessions and two parental information sessions.

The study involved the FRIENDS for Life for Children (Barrett, 2010) program; however, the program consisted of ten sessions lasting 45 minutes with no booster or parent sessions, because of school restrictions. All sessions were conducted by a research team consisting of two school psychologists with experience as schoolteachers, and two postgraduate students undertaking a master's degree

in educational psychology. The sessions were usually held weekly, but some were spaced two or three weeks apart because of school events such as school trips. Students were encouraged to participate in group activities in all sessions. For example, during group discussions, group members took turns in playing roles such as those of leader, secretary, and speaker, and shared ideas and comments with the entire class following group activities. Regarding fidelity assurance, the first author served as a leader, and meetings concerning session content were held subsequent to every session and attended by all members.

Participants

In total, 158 students (89 girls and 69 boys) aged 11- to 12-years-old from three primary schools in the Tokyo metropolitan area in Japan participated in the study. Prior to commencement of the study, parents of 154 students provided consent for their children's participation. However, students participated in the program as a classroom activity, and data from four students whose parents did not provide consent were excluded from the analysis. As invalid data were excluded from statistical analysis via the excluded-pairwise option, the final numbers of participants were 152 (66 boys and 86 girls) at Time 1 and 150 (64 boys and 86 girls) at Time 2. At Time 3, 91 students (40 boys and 51 girls) who had completed the program returned the questionnaire.

Procedure

Once the university's ethics board had approved the study, schools were invited to participate through the education board. The project was a part of the suicide prevention initiative, which was supported by the municipal government. The city recognized the importance of an educational approach to promoting mental health in young people as a means of preventing suicide. The principal author explained the study purpose and methods to the school principals and homeroom teachers. Responses were received from three schools, and the principals sent an information sheet and consent form to the parents of sixth-grade children from six classes. Students' assent was obtained by homeroom teachers. The education board assigned the three schools to participate in the study according to the availability of school classes; the first and second schools, assigned to the program group, began study participation in May, and the third school, assigned to the waitlist group, began study participation in October.

The students completed the SCAS (Spence, 1998), which was administered by their teachers, in the classroom. The program group completed the SCAS prior and subsequent to implementation of the program, with a follow-up assessment approximately three months later (i.e. Times 1, 2, and 3). The number of self-report questionnaires collected by the teachers at Times 1, 2, and 3 varied because of student absences at the time of assessment. SCAS scores recorded at Times 1 and 2 were used in the efficacy analysis, to determine changes in symptoms. To examine

the program's effects at a universal school level, the two clusters consisted of the program ($N = 92$) and waitlist ($N = 58$) groups. Data collected from 91 students in the program group at Times 1, 2, and 3 were used to examine the maintenance of effects, because data were missing for one student, who was absent from school at Time 3.

Childhood anxiety

The SCAS (Spence, 1998) consists of 38 items, with responses provided using a four-point rating scale ranging from 0 (never) to 3 (often). The scale provides an overall measure of total anxiety and six subtype scores, which correspond with the following Diagnostic and Statistical Manual of Mental Disorders (Text Revision) anxiety disorder categories: separation anxiety, SP, OCD, panic attack and agoraphobia, general anxiety, and fear of physical injury. This self-report measure targets children and adolescents aged 8- to 16-years-old.

    The scale has demonstrated high internal consistency and concurrent validity with other measures of child and adolescent anxiety, and adequate test–retest reliability (Spence, Barrett, & Turner, 2003). The SCAS has been regarded as a useful measure via which to assess childhood anxiety symptoms in various countries including non-Western and non-English-speaking countries (Ishikawa et al., 2009). The Japanese version of the SCAS, which can be obtained on the author's website, has demonstrated good reliability and validity with Japanese samples (e.g. Ishikawa et al., 2009). In the present study, the scale showed good reliability with Cronbach's alphas of 0.93, 0.92, and 0.92 at Times 1, 2, and 3.

Results

Table 1 presents pre- and post-intervention total and subgroup SCAS scores (mean score and standard deviation) in boys and girls in both conditions. Table 2 displays Means and SD for the overall SCAS scores in the program group at Times 1, 2, and 3.

Pre-intervention differences between groups

Preliminary analyses were conducted to ensure equal variance between the two groups. Although the normality test indicated five outliers for the SCAS total scores, this is common in larger community samples (e.g. Pallant, 2005). As the study aimed to evaluate program efficacy in a universal school setting, the outliers were not eliminated. Chi-square analyses revealed no significant gender differences between the program and waitlist groups; $\chi^2(1) = 0.04$, $p = 0.97$. A *t*-test performed to analyse the dependent variables revealed a significant between-group difference in OCD subscale scores in girls, $t(84) = 2.46$, $p = 0.02$. No significant differences were observed in the other subscale or overall scale scores in boys or girls.

Table 1. SCAS overall and subscale scores in the program and waitlist groups.

	Time 1		Time 2 Unadjusted		Time 2 Adjusted	
	Program $n=93$ B = 41; G = 52 M (SD)	Waitlist $n=59$ B = 25; G = 34 M (SD)	Program $n=92$ B = 40; G = 52 M (SD)	Waitlist $n=58$ B = 24; G = 34 M (SD)	Program $n=92$ B = 40; G = 52 M (SD)	Waitlist $n=58$ B = 24; G = 34 M (SD)
Overall SCAS scores						
Boys	14.61 (12.60)	13.48 (15.82)	9.58 (9.99)	9.92 (12.24)	9.58 (2.25)	9.92 (2.91)
Girls	23.98 (16.21)	27.53 (18.06)	17.23 (16.33)	22.71 (16.23)	17.23 (1.98)	22.71 (2.44)
Total	19.85 (15.38)	21.58 (18.39)	13.90 (14.38)	17.41 (15.91)	13.40 (1.50)	16.31 (1.90)
Separation Anxiety						
Boys	3.00 (3.33)	1.76 (2.59)	1.55 (2.09)	1.25 (2.72)	1.55 (0.45)	1.25 (0.59)
Girls	3.63 (3.65)	3.88 (3.36)	2.56 (3.26)	3.15 (3.10)	2.56 (0.40)	3.15 (0.49)
Total	3.35 (3.51)	2.98 (3.21)	2.12 (2.84)	2.36 (3.07)	2.05 (0.30)	2.20 (0.38)
Social Phobia						
Boys	2.20 (2.67)	2.12 (3.00)	1.88 (2.37)	1.25 (2.03)	1.88 (0.48)	1.25 (0.61)
Girls	5.65 (3.43)	4.97 (3.90)	3.75 (3.28)	5.21 (3.72)	3.75 (0.42)	5.21 (0.52)
Total	4.13 (3.55)	3.76 (3.80)	2.93 (3.05)	3.57 (3.68)	2.81 (0.32)	3.23 (0.40)
OCD						
Boys	2.80 (2.57)	3.48 (4.00)	2.05 (2.34)	2.75 (2.44)	2.05 (0.41)	2.75 (0.53)
Girls	3.77 (2.85)	5.41 (3.28)	2.65 (2.46)	4.29 (3.06)	2.65 (0.36)	4.29 (0.44)
Total	3.34 (2.76)	4.49 (3.70)	2.39 (2.41)	3.66 (2.90)	2.35 (0.27)	3.52 (0.34)
PAA						
Boys	1.66 (2.51)	1.76 (3.82)	0.88 (1.57)	1.25 (3.26)	0.88 (0.56)	1.25 (0.72)
Girls	3.19 (3.84)	3.85 (4.67)	2.54 (4.43)	2.76 (3.73)	2.54 (0.49)	2.77 (0.60)
Total	2.52 (3.39)	2.97 (4.42)	1.82 (3.57)	2.14 (3.60)	1.71 (0.37)	2.01 (0.47)
Physical Injury Fear						
Boys	2.20 (2.27)	2.16 (2.03)	1.33 (1.76)	1.96 (1.97)	1.33 (0.36)	1.96 (0.47)
Girls	3.40 (2.75)	3.76 (2.70)	2.62 (2.64)	3.18 (2.46)	2.62 (0.32)	3.18 (0.39)
Total	2.98 (2.63)	3.08 (2.55)	21.69 (2.37)	2.67 (2.33)	1.97 (0.29)	2.57 (0.31)
Generalized Anxiety						
Boys	2.76 (2.64)	2.20 (3.42)	1.90 (2.84)	1.46 (2.47)	1.90 (0.55)	1.46 (0.71)
Girls	4.13 (3.45)	5.65 (4.53)	3.12 (3.96)	4.12 (3.90)	3.12 (0.48)	4.12 (0.60)
Total	3.52 (3.18)	4.19 (4.41)	2.59 (3.55)	3.02 (3.61)	2.51 (0.37)	2.79 (0.46)

SACS: Spence Children's Anxiety Scale (Spence, 1998); OCD: Obsessive-Compulsive Disorder; PA & A: Panic Attack and Agoraphobia.

Table 2. Overall SCAS scores at times 1, 2, and 3 in the program group.

	Time 1 M (SD) n	Time 2 M (SD) n	Time 3 M (SD) n
Boys	14.25 (2.33) 40	9.58 (2.20) 40	9.25 (1.82) 40
Girls	24.29 (2.06) 51	17.53 (1.95) 51	12.35 (1.61) 51
Total	19.88 (15.49) 91	14.03 (14.41) 91	10.99 (11.53) 91

SCAS: The Spence Children's Anxiety Scale (Spence, 1998).

As the current study was unable to assign students to the two groups randomly, existing groups were used, and a MANCOVA was performed to examine data from students from six classes in three schools. A 2 (gender: male and female) × 2 (group: program and waitlist) × 2 (Time: Time 1 = pre-intervention and Time 2 = post-intervention) between-group analysis of covariance was conducted to compare the efficacy of the FRIENDS program in reducing anxiety in boys and girls between the program and waitlist groups. Time 1 SCAS scores and gender were used as covariates to control for individual differences.

Hypothesis 1: A significant interaction between group and gender was observed for SP subscale scores, $F(1, 146) = 4.15$, $p = 0.043$, partial $\eta^2 = 0.03$. SP scores were significantly lower in girls in the program group, Time 1: 5.65 (3.43), Time 2: 3.75 (0.42), relative to those of girls in the waitlist group, Time 1: 4.97 (3.90), Time 2: 5.21 (0.52). A significant main effect of group was observed for OCD subscale scores, $F(1, 146) = 7.17$, $p = 0.008$, partial $\eta^2 = 0.05$. No interactions ($\eta^2 = 0.00$ to 0.01) or main effects ($\eta^2 = 0.00$ to 0.02) were observed for the other subscale scores.

Hypothesis 2: A significant main effect of gender was observed for all subscale and overall scores, as follows: Panic attack and agoraphobia scores: $F(1, 146) = 7.11$, $p = 0.009$, partial $\eta^2 = 0.05$; separation anxiety scores: $F(1, 146) = 8.92$, $p = 0.003$, partial $\eta^2 = 0.06$; fear of physical injury scores: $F(1, 146) = 10.44$, $p = 0.002$, partial $\eta^2 = 0.07$; SP scores: $F(1, 146) = 32.61$, $p < 0.001$, partial $\eta^2 = 0.18$; OCD scores: $F(1, 146) = 1.16$, $p = 0.015$, partial $\eta^2 = 0.04$; general anxiety scores: $F(1, 146) = 10.82$, $p = 0.001$, partial $\eta^2 = 0.07$; overall scores: $F(1, 146) = 17.86$, $p < 0.001$, partial $\eta^2 = 0.11$. Girls showed greater reductions in scores between Times 1 and 2 relative to those observed in boys.

Hypothesis 3: The third hypothesis was partly supported. To explore the maintenance of the change observed at Time 2, a one-way repeated measures ANOVA was performed to compare overall SCAS scores between Times 1 ($M = 19.88$, SD = 15.49), 2 ($M = 14.03$, SD = 14.41), and 3, ($M = 10.99$, SD = 11.53) in the program group (N = 91). Results showed a significant main effect of time, Wilks' Lambda = 0.74, $F(2, 89) = 16.04$, $p < 0.001$, partial $\eta^2 = 0.27$. Pairwise comparisons indicated that the mean score for Time 1 differed significantly from those of Times 2 ($p < 0.001$) and 3 ($p < 0.001$). No significant difference in scores was found between Times 2 and 3. In students in the treatment program, anxiety scores at

Time 3 were significantly lower relative to those observed at Time 1. However, because there was no comparison group included at Time 3, the maintenance of the effects of the program at three-month follow up could not be confirmed.

Discussion

The present study investigated the efficacy of a CBT program, FRIENDS for Life for Children (Barrett, 2010), in reducing anxiety scores for the self-report measure at a universal school level in Japan. The outcomes indicated that subsequent to the program, SP scores were significantly lower in girls in the program group relative to those of girls in the waitlist condition. In addition, in both groups, girls were more likely to display a reduction in anxiety, relative to boys, over a period of approximately three months. In addition, the findings suggested that changes observed in the program group between Times 1 and 2 were maintained at Time 3 (three-month follow up).

Reductions in SP scores

Reductions in SCAS anxiety scores were observed only for the SP subscale in girls. Therefore, the first hypothesis was partly supported. In using universal interventions, initial symptom levels may not be sufficiently high to demonstrate a significant post-intervention effect (Stallard, Simpson, Anderson, & Goddard, 2008). When the FRIENDS program was applied at the classroom level, the mean effect size for the general population was 0.24, which was smaller relative to those of 0.44 for the at-risk population and 0.84 for the clinical population (Briesch, Hagermoser Sanetti, & Briesch, 2010). Considering the preliminary result indicating a reduction in social anxiety in girls, the effect size was small at the classroom level.

Gender difference in SCAS scores

The second hypothesis was partly supported. The outcomes indicated different anxiety levels and post-intervention changes in anxiety scores between male and female students. Previous research involving Japanese children and adolescents ($N = 2,275$; age: 9- to 15-years-old) has shown that girls reported higher anxiety levels relative to those reported by boys (Ishikawa et al., 2009). The current results were consistent with this finding, in that higher scores were observed in girls relative to those observed in boys. Girls demonstrated greater reductions in scores subsequent to the program. This could reflect the influence of sociocultural values on students' gender roles, which could be apparent in relational attitudes at school and home. In addition, relationship anxiety is common in Japanese people, who pay close attention to the thoughts and feelings of others in a group-oriented society (Hofmann, Anu Asnaani, & Hinton, 2010). These matters were beyond the scope of the current study; however, the findings indicate that gender differences should be considered in preventive interventions.

Maintenance of effects

Post-intervention changes were maintained at three-month follow up in the program group. However, the follow-up examination failed to show significant results. Follow-up data showed generalization of treatment effects at six (e.g. Mostert & Loxton, 2008) and 12 months (e.g. Stallard et al., 2008). Research from other countries, such as South Africa (Mostert & Loxton, 2008) and Germany (Essau et al., 2012), has revealed significantly delayed effects at follow-up. To examine the maintenance and delayed effects of the program in this population, research should assess changes immediately subsequent to the program as well as after certain periods.

Limitations

The study was subject to some limitations. First, the study was not a randomized controlled trial, and group differences might have occurred for reasons other than the intervention effect. Therefore, larger numbers of schools should be included in randomized groups in future research. Second, the study used only one scale, which may not have been sensitive to changes with a ceiling effect in a universal-level sample and could have been affected by social desirability and other factors associated with Japanese students. Third, the study used a short follow-up assessment period for the intervention group, and longer follow-up periods have shown program effects in other studies. In addition, there were no comparison data at follow up, and the control group could have continued to demonstrate a downward trend. Therefore, evaluation of the program should include six- and/or 12-month follow-up in both intervention and control groups. Fourth, the study employed school psychologists, rather than school personnel, to implement the program. The next step is to train teachers and/or school psychologists to implement the program. Future research conducted in universal school settings in Japan should address these limitations.

Conclusion

The findings of the current study indicated that implementation of the CBT program in universal school settings could be effective in mitigating the symptoms of social anxiety, particularly in girls. As social anxiety has been identified as a predictor of other serious problems in Japan, the CBT program, applied at a universal school level, could be useful in enhancing students' mental health.

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