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Evaluation of the Effectiveness of a Cognitive-Behavioral Therapy Program for Alleviating the Symptoms of Social Anxiety in Adolescents

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Abstract

Objective: The aim of this research project is to investigate the effects of cognitive-behavioral group therapy on adolescents suffering from symptoms of social anxiety. Method: cognitive behavioral group therapy program for reducing social anxiety was developed by the authors, after which a pilot study was conducted, evaluated for deficiencies, finalized, and implemented in the following study. The final program entailed 13 sessions covering relaxation training, cognitive restructuring and exposure components. To recruit the participants for the intervention program screening tests were applied to 711 students of three different junior high schools in Izmir. 44 students (treatment=24, control= 20) who met the inclusion criteria in the seventh and eighth grades participated in the main study. Evaluation of the therapy program was ascertained using the following instruments; for students, Negative Cognitive Errors Questionnaire (CNCEQ), Cape Social Phobia Scale for Children and Adolescents (CSPSCA), Social Anxiety Scale for Adolescents (SAS-A); and for parents, (SAS-P) was used to compare their pre-program and post-program tests results.

Results: Repeated measures ANOVAs yielded significant Group X Time interactions for SAS-A ($F (1, 42) = 7.511$, $p < 0.01$, $\eta2 = 0.15$), CSPSCA ($F (1, 42) = 6.54$, $p < .05$) and CNCEQ ($F (1, 42) = 8.295$, $p < 0.01$, $\eta2 = 0.16$) scores. Results from parents further indicated that social anxiety in the treatment group had decreased after program completion ($F (1, 42) = 9.496$, $p = 0.004$, $\eta2 = 0.18$).

Conclusion: Consistent with the literature of school based Cognitive-Behavioral Group Treatment (CBGT) programs for social anxiety, it was found that adolescents in the treatment group exhibited a significant decrease in social anxiety and related cognitive errors.

Key Words: social anxiety, adolescent, cognitive-behavioral group therapy

Social phobia, in other words social anxiety, is a problem that causes serious deterioration in social functions and quality of life of the individual (Kessler, 2003). Research has demonstrated that social anxiety generally appears during childhood and adolescence, and tends to become chronic, persisting throughout an individual's lifetime (Mannuzza et al. 1995; Wittchen et al. 1999; Wittchen et al. 2000). In addition to the discomfort that appears in social settings, individuals showing symptoms of social anxiety may also suffer from depression, somatoform disorders, academic failure and anxiety repression behaviors such as alcohol and substance abuse, and suicidal tendencies (Beidel, 1991; Beidel et al., 1999; Essau et al., 1999; Stein and Walker, 2001). It is noted that if social anxiety is not treated it may cause serious losses for both the individual and society; social, academic, and psychological difficulties which start at an early age and rapidly become chronic result in the inability to develop ones life skills. (Segool and Carlson, 2008).

Despite these serious consequences, children who prefer to stay in the background and be silent are generally considered to be calm, or suffer from a mild shyness, and may often even be rewarded with approval for their sobriety and peacefulness. Shyness and fear of disapproval, which exist naturally in individuals suffering from social anxiety,

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prevent them from applying to clinics for treatment for fear of being "labeled" (Masia-Warner et al., 2007). As a result, individuals with social anxiety generally can not be diagnosed due to the reasons mentioned above (Khalid-Khan et al., 2007). Manuzza and colleagues (1995) report that, although the symptoms of social anxiety are observed in the beginning of childhood and adolescence, treatment may be delayed until mid-thirties.

When the literature concerning treatment of social anxiety in children and adolescents is examined, it becomes clear that it is almost entirely based on variations of behavioral or cognitive-behavioral therapies (Ginsburg and Drake, 2002; Hayward et al., 2000; Masia et al., 2001; Spence et al., 2000). A significant number of the cognitive-behavioral programs conducted in clinics and schools are prevention studies for children and adolescents who do not have acute symptoms that meet the social anxiety diagnosis, but who still show symptoms such as shyness, social isolation, and loneliness. It is well known that these studies are generally planned in the form of group treatments and conducted in school settings (Fisher et al., 2004; Ginsburg and Drake 2002; Masia et al. 2001). The school setting seems to be ideal for prevention studies because it allows researchers to select and evaluate students with information from teachers, helps in making generalizations about the skills gained as it is a natural environment, and reduces the fear of being "labeled" and thus reduces resistance to participation (Garcia-Lopez et al. 2008; Masia-Warner et al., 2007).

For this reason, the present study aims to create a therapy program based on cognitive-behavioral techniques, which have been proven to be effective in the West in a variety of studies, and to test the effectiveness of this program in the school setting. The main components of the program are defined as: (1) psycho-education directed to the recognition and ability to distinguish the somatic, cognitive, and behavioral elements of anxiety, (2) relaxation training, (3) cognitive restructuring, and (4) exposure. The change objectives of these components that create the program are as follows: in the psycho-education that is considered as a didactic part of the treatment, non-pathological anxiety is defined as a warning sign for the approaching danger, and it is explained that pathological anxiety is a "false alarm" or overreaction that appears in the absence of a danger (Kashdan and Herbert, 2001; Velting et al., 2004). In particular, the role of the avoidance behavior in social anxiety is explained. Because children who have a tendency toward social anxiety are always on alert for minor distress signs in their bodies, and tend to evaluate their normal somatic reactions catastrophically, the aim of psycho-education is to help these children to recognize the somatic symptoms of anxiety, and teach them relaxation methods (Friedberg and McClure, 2002). The cognitive restructuring technique aims to help children recognize such defective evaluations related to social situations or to their own performance, which increase their feelings of helplessness and cause a vicious circle, and then change these evaluations and restructure them systematically. The cognitive restructuring technique is used in combination with the exposure technique in most of the cognitive-behavioral therapies applied to anxiety disorders (Donohue and Van Hasselt, 1994). In the exposure stage, individual stages are followed in order to face frightening situations in a step by step fashion (Kashdan and Herbert 2001; Khalid- Khan et al., 2002). The aim is to desensitize the individual in the presence of a frightening situation by getting them to understand that this situation is actually not a disaster.

The present study is a two-stage study. The first stage is a pilot study, which tests the therapy program created with the components mentioned above, and the second stage is the main study, which examines the effect this program had in alleviating the social anxiety level and related cognitive defects in the adolescents who participated in the study.

PILOT STUDY

METHOD

Participants

The pilot study was conducted with children from lower middle class socioeconomic backgrounds who attend an elementary school in Izmir. 195 seventh and eighth grade students (86=male, 109=female) participated in the screening study. After the screening study, 12 students (6=control, 6=therapy) met the criteria to participate in group therapy (see the Procedure Section). In the therapy group 4 students were female and 2 students were male, in the control group there were 3 female and 3 male students.

Instruments of Data Collection:

Social Anxiety Scale for Adolescents (SAS-A): The scale was developed by La Greca (1998), and contains 22 items. The subscales are as follows: Fear of Negative Evaluation (FNE), Social Avoidance and Distress in New Situations (SAD-N), and General Social Avoidance and Distress (SAD-G). The Cronbach's alpha obtained

for the entire scale and the split-half reliability was respectively .88 and .85. In order to determine the criteria validity of SAS-A, Capa Social Phobia Scale for Children and Adolescents (CSPSCA) and the trait anxiety scale of *State-Trait Anxiety Inventory* for *Children* (STAIC) were used. The correlations between SAS-A and these two scales were respectively found .to be 75 and .66.

Capa Social Phobia Scale for Children and Adolescents (CSPSCA): This is a Likert type 25-item self-report instrument, which was developed by Demir (1997) to determine the social phobia levels of children more than 10 years old and adolescents. The reliability coefficient (Cronbach α = .82) of the scale reported by the author is considered well beyond an acceptable level.

State-Trait Anxiety Inventory for Children (STAIC): In the present study, only the trait scale element of the whole scale developed by Spielberger and colleagues (1970) was used. In the validity reliability study of the scale conducted for our country, the test-retest reliability was found to be .65, and the Cronbach's alpha coefficient was reported to be .81 (Özusta, 1995).

Children's Depression Inventory (CDI): This inventory developed by Kovacs (1980) consists of 27 items, and can be applied to children and adolescents between the ages of 6 and 17. Öy (1991) conducted the validity and reliability study of CDI's Turkish form, and reported that the test-retest reliability was .70, and the internal consistency was .81.

Negative Cognitive Errors Questionnaire for Children (CNCEQ): The questionnaire developed by Leitenberg and colleagues (1986) consists of 24 items in total. It measures four types of negative cognitive errors; catastrophizing, over generalizing, personalizing and selective abstraction. The psychometric characteristics of the questionnaire were examined and the Cronbach's alpha coefficient was calculated as .91, and the split-half reliability was found as .87. For the criteria validity of the questionnaire, the relationships between the total and subscales' scores of the questionnaire and the scores obtained on depression, trait anxiety, and social anxiety scales were analyzed. Total score and each cognitive error score were related for significance ($p<.001$, $n=800$) to the scores obtained on depression, social anxiety, and trait anxiety scales.

In addition to the scales mentioned above, an information form was used in order to get data such as the students' age, gender, number of siblings, and socioeconomic level of the family.

Procedure

During the screening stage of the pilot study, the self-report scales mentioned above were administered in the students' own classrooms. After administering the tests, the researchers informed the students about the objectives, duration, and content of the group study, which would be conducted in the school, and asked them to mark on the forms whether they wanted to participate in such a study or not. The results of the screening study criteria were; 12 students received a score one standard deviation above the school mean on SAS-A and CSPSCA and a score below the mean on CDI and STAIC to exclude the criteria for depression and general anxiety, volunteered for the study, and also received signed permission from their parents. The date and time options for the project were presented to the students and those who were available at the required times were recruited for the therapy group, while those who were busy with other activities such as private lessons, music or sport activities were directed to the control group. The therapy program was carried out as 90 minute long sessions, once a week, over 10 weeks. The first two authors of the present study completed the course and supervision stages of the cognitive-behavioral group therapy for the adolescents involved as part of their doctorate level requirements in clinical psychology, while the third author supervised the other authors in this project, as well as in 2 previous studies.

The adolescents in the control group were told they could participate in a group study that would be held during the next academic term and, furthermore, adolescents and parents who asked for additional help were guided toward individual counseling.

RESULTS

First, t-tests were conducted in order to evaluate whether the difference between the therapy and control groups scores prior to the application were significant. The initial levels of the therapy and control groups for CSPSCA ($t(10)= 0.628$, $p>.05$) and SAS-A ($t(10)= 0.920$ $p>.05$) were not significantly statistically differentiated from each other.

In order to determine whether the cognitive-behavioral group therapy influenced the students' social anxiety and cognitive error levels, the repeated measures ANOVA were conducted for each of the scales separately (pre-test-post-test for both the therapy and the control group). The mean and standard deviations of the scores obtained on pre-test and post-tests of the therapy and

TABLE 1. Comparison of SAS-A, CSPSCA, and CNCEQ pre- and post-test scores of the therapy and control groups in the pilot study.

	THERAPY (n=6)		CONTROL (n=6)	
SAS-A scores	*X*	*SS*	*X*	*SS*
FNE (pre-test)	24.83	4.70	26.17	4.07
FNE (post-test)	22.67	8.28	24.44	5.42
SAD-N (pre-test)	22.67	2.16	21.33	0.51
SAD-N (post-test)	18.83	6.97	18.50	2.81
SAD-G (pre-test)	12.33	2.88	12.17	3.19
SAD-G (post-test)	8.00	3.35	10.50	2.17
SAS-A total (pre-test)	59.83	2.79	59.67	2.80
SAS-A total (post-test)	49.50	17.28	53.33	8.40
CSPSCA scores	X	*SS*	*X*	*SS*
CSPSCA (pre-test)	69.50	8.73	67.16	7.35
CSPSCA (post-test)	66.66	15.80	67.16	10.00
CNCEQ scores	*X*	*SS*	*X*	*SS*
Catastrophizing (pre-test)	12.83	4.91	16.83	3.18
Catastrophizing (post-test)	13.50	5.57	16.66	1.86
Personalizing (pre-test)	11.00	3.40	18.67	4.28
Personalizing (post-test)	11.83	3.81	17.50	5.75
Selective Abstraction (pre-test)	12.00	2.29	15.17	3.92
Selective Abstraction (post-test)	10.33	2.88	15.00	4.86
Over Generalizing (pre-test)	14.50	6.09	17.00	4.33
Over Generalizing (post-test)	11.00	3.69	17.83	3.77
CNCEQ Total (pre-test)	50.33	12.65	61.50	11.95
CNCEQ Total (post-test)	46.67	15.51	60.50	13.32

control groups are presented in Table 1. When Table 1 is examined, it is revealed that the mean scores of SAS-A, CSPSCA, and CNCEQ in the therapy group decreased more than the control group in the post-test. However, the results of the analyses did not point to a statistically significant difference in all the scales between the groups, in terms of the pre- and post-tests' scores.

DISCUSSION

Although the total and subscale scores of social anxiety and cognitive error scales administered to the adolescents in the therapy group declined compared to the control group, the difference was not found to be statistically significant. It was thought that this result may be related to the limited number of participants, and also some limitations in the therapy program. The most important limitation of the program was considered to be the limited number of exposure sessions. In the pilot study, the group studies were initially planned to be 10 to12 sessions; however because of the end of the academic year and holidays only 10 sessions were carried out. Therefore, it was not possible to allocate enough time for all 12 of the exposure sessions, which are considered to be the most important behavioral component of the program. At the end of the pilot study, it was anticipated that if the program was structured as 13 sessions, and the exposure sessions were concentrated on, the effectiveness of the project would be increased. In addition to that, because the entertainment activities such as food and beverages, play and group rewards were very effective in increasing individual attachment to the group and participant motivation, it was decided that these factors should play a larger role in the main study.

MAIN STUDY

METHOD

Participants

The screening for the main study was conducted with 711 seventh and eight grade students from 3 elementary schools in Izmir. It was decided after the screening process that all groups in the study would consist of only girls, because the aim of the study was to have equal or close numbers of male and female students; however, there were few male students who met the inclusion criteria. In this study, there were 3 separate therapy groups (24 students in total), and 3 control groups paired with them (20 students in total). The demographic character-

TABLE 2. Demographic characteristics of the participants in the therapy and control groups in the main study.

Demographic Variables	Therapy		Control	
	N	%	N	%
AGE				
12	19....	79.2....	8....	40.0....
13	4....	16.7....	10....	50.0....
14	1....	4.2....	2....	10.0....
NUMBER OF SIBLINGS				
0	1....	4.2....	1....	5.0....
1	17....	70.8....	12....	60.0....
2	5....	20.8....	3....	15.0....
3	1....	4.2....	4....	10.0....
ORDER OF BİRTH				
1	14....	58.3....	11....	55.0....
2	8....	33.3....	8....	40.0....
3	2....	8.3....	1....	5.0....
INCOME OF FAMILY				
Low	8....	33.3....	6....	30.0....
Middle	8....	33.3....	11....	55.0....
High	7....	29.2....	2....	10.0....
Very High	1....	4.2....	1....	5.0....
EDUCATION LEVEL OF MOTHER				
No schooling	0....	0.0....	1....	5.0....
Elementary school	14....	58.3....	8....	40.0....
Middle school	0....	0.0....	4....	20.0....
High school	8....	33.3....	6....	30.0....
University	2....	8.3....	1....	5.0....
EDUCATION LEVEL OF FATHER				
Elementary school	8....	33.3....	4....	20.0....
Middle school	2....	8.3....	5....	25.0....
High school	10....	41.7....	8....	40.0....
University	4....	16.7....	3....	15.0....

istics of the students in the therapy and control groups are summarized in Table 2.

Data Collection Instruments

In addition to the information form used in the pilot study, SAS-A, CSPSCA, STAIC, CDI, and CNCEQ, and the parents' form of Social Anxiety Scale for Adolescents (SAS-P) were also used. SAS-P was first translated to Turkish, then the validity and reliability analyses were conducted. According to the results of these studies, the Cronbach's alpha and the split-half reliability were respectively found as .87 and .81. Additionally, the correlation between the scale's adolescent and parents form was r=.82.

Procedure

The screening study conducted prior to the main study was carried out at the beginning of the academic year, with the participation of 7th and 8th grade students from 3 different elementary schools. In addition to the criteria used in recruiting participants for the pilot study, the teachers were also asked to give their evaluations of students. The students who met the criteria in terms of the scale scores were listed in the teacher's evaluations, then some students that didn't meet the criterion in terms of scale scores were added to these lists, and given to at least two teachers who had excessive teaching hours. The reason for including the students' names who didn't meet the criteria in the list was to prevent the students from being "labeled" and reduce the teachers' bias. At the top of the list, information was given which included the definitions of social anxiety symptoms, and the teachers were asked to rate the students on the list in terms of these symptoms from 0 to 5. Only the students who got a score above 2 from both of their teachers, and those who met the previous criteria were admitted to the therapy and control groups. The students who did

not have any activities such as private lessons and social activities at the time the researchers could carry out the study were recruited to the therapy group, and the other students were taken into the control group. The students in the control group were told they could participate in the group study in the coming academic year if they desired to do so.

Cognitive-Behavioral Group Therapy for Social Anxiety: The therapy program was implemented as 90 minutes sessions, once a week, over 13 weeks, after the students' classes in their own schools. The number of participants varied between 7 and 9.

The main structure remained the same in all the sessions, which respectively included: a summary of the previous session, control of the homework given in the previous session, the main theme of the session, the planning of new homework, and entertaining activities such as eating and playing. Homework generally included observing oneself, testing the cognitive and behavioral techniques that were taught and implementing these techniques in real life. The participants were rewarded if they abided by the rules and completed their homework. Two types of rewards were used; individual, such as key holder or hairclip; and group, such as going to the pizzeria or bowling hall together. The content of the sessions was as follows: the aim of the 1st session was to familiarize the group members with each other, provide information about the plan for the group, and to ensure attachment and motivation within the group. The 2nd and 5th sessions focused on identifying the cognitive, behavioral and somatic components of the anxiety and understanding the relationships between these components. At first, these components were introduced by working on hypothetical examples of how the group members would feel, think, and act in certain cases. Then, as the group members became more skilled in expressing their feelings and thoughts, they started to work on the specific situations they were in. These sessions aimed to help the group members to recognize their cognitive, behavioral, and somatic reactions in anxiety-inducing situations. From the 6th session to the 9th session, the use of relaxation techniques (breathing exercises) to alleviate somatic symptoms was taught. In addition to that, the group members were informed about internal speeches and cognitive errors, and they were encouraged to foster alternative thoughts. During these sessions, the four-step "realistic thought plan" suggested by Rapee (1998) was implemented. In the Realistic Thought Plan, the group members were taught to examine the thoughts that crossed their minds in anxiety-inducing situations by asking themselves four questions. These are: (1) the "Have you ever experienced a consequence like that?" question, which helps one to recognize that negative expectations have a low probability of coming true; (2) the "Is there a general rule regarding this situation?" question, which proves there is no commonly accepted rule, thus showing that negative expectations are not probable; (3) the "Might there be alternative explanations?" question, which points out that there may be alternative ways to explain this situation, and (4) the "How would anyone else think and act if she/he was in the same situation as you?" question, which makes one consider that other people would act differently in the same situation. The 10th, 11th and 12th sessions were planned as exposure sessions during which all the previous skills (inside and outside the sessions) were to be integrated. The skills developed outside the sessions were conducted via homework. These applications were implemented step-by-step, starting from the least anxiety-inducing situations and continuing to the most anxiety-inducing. Each time the group members noted on their registration form their target behavior, the expected anxiety level prior to the exposure, the anxiety level after trying to display the target behavior, and whatever happened during the exposure. To benefit more fully from the exposure process, the feedback of the members about their own experiences and difficulties were discussed at the beginning of all sessions. In conclusion, ways to implement and maintain the skills to prevent the recurrence of the problem, which the group members gained in the 13 sessions, were the major focus of the sessions. In order to use the time more efficiently, most of the implementation discussions were continued in two sub-groups, each accompanied by a therapist after the 9th session.

Control Group: Students in the control group continued their regular school activities and did not follow any prescribed program. The adolescents in this group were in touch with the therapy group only when administering pre- and post-tests.

RESULTS

First, the t-tests were conducted in order to evaluate whether the difference between the therapy and control groups scores prior to the therapy program was significant. For SAS-A ($t(42)=0.675$, $p>.05$) and SAS-A ($t(42)=0.550$, $p>.05$), the initial levels of the therapy and control groups statistically differentiated from each other significantly.

In order to determine whether the cognitive-behav-

TABLE 3. Comparison of SAS-A and CSPSCA pre- and post-test scores of the therapy and control groups in the main study.

	Therapy (n=19)				Control (n=21)			
	Pre-test		Post-test		Pre-test		Post-test	
Scales	X	SS	X	SS	X	SS	X	SS
FNE	23.83	6.60	18.08	4.88	23.95	3.36	22.60	5.85
SAD-G	15.54	4.04	11.79	3.00	13.70	2.99	14.50	14.50
SAD-N	20.95	3.72	21.15	2.92	21.15	2.92	18.65	4.86
SAS-A total	60.00	11.58	46.92	11.14	58.80	5.63	55.75	11.44
CSPSCA	74.96	13.35	63.21	14.90	72.90	8.12	72.60	11.17

ioral group therapy program was effective in alleviating the students' social anxiety level, the 2 (therapy-control group) X 2 (pre-test-post-test) repeated measures ANOVA were applied to the social anxiety scores obtained in therapy and control groups. The pre- and post-tests were within-subject variable, and the group was between-groups variable in the analysis. The pre- and post-tests' mean scores of SAS-A belonging to the therapy and control groups are summarized in Table 3.

As presented in Table 3, the social anxiety scores of the therapy group decreased considerably after the therapy, but the social anxiety scores of the control group decreased only slightly. The interaction effect between the pre-post test and the groups in terms of SAS-A total scores was found statistically significant ($F(1,42) = 7.511$, $p < 0.01$, $\eta^2 = 0.15$). When the same analysis was repeated for subtests, the interaction effect between the pre-post test and the groups was statistically significant in the FNE ($F(1,42) = 3.944$, $p = 0.05$, $\eta^2 = 0.09$), and SAD-G ($F(1,42) = 12.453$, $p = 0.001$, $\eta^2 = 0.23$) subtests. Although, the mean scores of the therapy group in SAD-N subtest decreased more in the post-test, the interaction effect between the pre-post test and the groups was not found to be statistically significant ($F(1,42) = 0.802$, $p = 0.376$).

The 2 (pre-test-post-test) X 2 (therapy-control group) repeated measures ANOVA were conducted to evaluate the pre- and post-test scores obtained by the therapy and control groups in CSPSCA. In terms of CSPSCA scores the interaction effect between pre-test-post-test and the groups was found as statistically significant ($F(1,42) = 6.554$, $p < .05$ $\eta^2 = 0.13$). According to the results, the therapy program influences CSPSCA scores significantly. When compared to the control group, it was observed that the adolescents' CSPSCA scores in the therapy group decreased significantly following the therapy. The results are shown in Table 3.

In addition to comparing the social anxiety symptoms of the therapy and control groups before and after the group therapy, the present study aimed to compare these two groups in terms of their cognitive errors as well. In order to evaluate the difference between these two groups in terms of their pre- and post-test scores, 2 (pre-test-post-test) X 2 (therapy-control) repeated measures ANOVA were conducted. In the analysis, pre-test-post-test was considered as within-subject variable, and the group is considered as the between-groups variable. The total CNCEQ scores of the therapy and control groups and the pre-test and post-test mean results obtained in

TABLE 4. Comparison of CNCEQ pre- and post-test subscales and total scores of the therapy and control groups.

	THERAPY (n=24)		CONTROL (n=20)	
CNCEQ	X	SS	X	SS
Catastrophizing (pre-test)	16.63	4.36	15.85	5.07
Catastrophizing (post-test)	13.08	5.34	15.80	3.98
Personalizing (pre-test)	16.79	6.37	16.50	5.27
Personalizing (post-test)	12.92	5.42	16.40	5.12
Selective Abstraction (pre-test)	12.00	2.29	13.90	3.85
Selective Abstraction (post-test)	11.17	4.71	14.05	4.15
Over Generalizing (pre-test)	17.38	4.96	16.40	5.77
Over Generalizing (post-test)	13.21	4.72	15.50	4.37
CNCEQ Total (pre-test)	66.75	17.75	62.65	16.37
CNCEQ Total (post-test)	50.38	18.28	61.75	14.48

the subscales evaluating the four main cognitive errors (catastrophizing, over generalizing, personalizing and selective abstraction) are presented in Table 4.

When the means of CNCEQ total scores of the adolescents who participated in the therapy and control groups were examined, a decrease in the post-test means was observed compared to the pre-test for both groups. However, the decrease in the therapy group was considerably higher than the control group. The interaction effect between pre-test-post-test and group was statistically significant in terms of the CNCEQ subscales of catastrophizing ($F(1,42) = 4.451$, $p<0.05$, $\eta^2 = 0.09$), personalizing ($F(1,42) = 5.797$ $p<0.05$, $\eta^2=0.12$), selective abstraction ($F(1,42) = 6.275$, $p < 0.05$, $\eta^2 = 0.13$), over generalizing ($F(1,42) = 4.723$, $p<0.05$, $\eta^2=0.10$), and CNCEQ total score ($F(1,42) = 8.295$, $p<0.01$, $\eta^2 = 0.16$). In other words, when compared to the control group, the CNCEQ subscales and total scores of the adolescents in the therapy group decreased significantly after the therapy.

Within the scope of the study, the adolescents' (control and therapy groups) parents were asked to evaluate the social anxiety symptoms of their children before and after the group therapy. It was found that the SAS-P means of the therapy group in the post-test decreased compared to the pre-test, while the means of the control group did not change. The interaction effect between pre-test-post-test and group in terms of SAS-P scores was found as statistically significant ($F(1,42) = 9.496$, $p=0.004$, $\eta^2 = 0.18$). The results showed that the mothers pre- and post-test SAS-P scores of the adolescents in the therapy group differed significantly compared to the control group. The results are presented in Table 5.

DISCUSSION

In the present study, a cognitive-behavioral group therapy program directed toward adolescents who displayed social anxiety symptoms was implemented in the school environment, and its effectiveness was evaluated. In the literature, there are some therapy programs conducted in the school environment that aimed to alleviate social anxiety in the adolescents. One of these programs is known as the Cognitive-Behavioral Group Treatment for Adolescents (CBGT-A), which focuses on psychoeducation to teach social skills and behavioral exposure (Albano et al., 1995). Another program is the Social Effectiveness Therapy for Children (SET-C) which consists of components such as psycho-education, exposure and social skills training. In addition to these programs, the literature includes programs which select and apply some of the components mentioned above (Baer and Garland 2005; Fisher et al., 2004; Masia et al., 2001), as well as programs that are completely original (Gallagher et al., 2004; Ginsburg and Drake, 2002; Spence et al., 2000). For instance, Masia and colleagues (2001) added the "realistic thought" and "avoidance of recurrence" components of Rapee (1998) to the SET-C and created a new program. Similarly, in the present study the cognitive restructuring sessions were prepared with the help of the same book. The cognitive-behavioral therapy program which was prepared and administered within the scope of this study has some common components with the other programs. On the other hand, it is difficult to compare the results of the present study to the other programs since none of the programs mentioned above are identical.

In order to examine the effectiveness of the therapy program, the evaluations were carried out in two parts; with the adolescents and also with their parents. The program aimed to alleviate negative physiological stimulation and exposure behaviors, feelings of anxiety, and to correct cognitive errors. Therefore, a variety of assessment instruments were chosen to evaluate these goals. The results showed a significant differentiation between the therapy and control groups in terms of all the subscales and total scores of SAS-A, except the SAD-N subscale.

In other words, when compared to the control group, the scores of individuals in the therapy group were significantly lower in the post-test than in the pre-test of the social anxiety scales. A similar decrease is also valid for the SAD-N subscale, but not on the same significance level. A similar decrease in favor of the therapy group in

TABLE 5. Comparison of social anxiety evaluated by parents pre- and post-test scores of the therapy and control groups.

SAS-P	Group	X	SS	N
Social anxiety evaluated by the parent (pre-test)	therapy	56.04	11.70	24
	control	49.95	12.21	20
Social anxiety evaluated by the parent (post-test)	therapy	45.50	13.40	24
	control	49.65	12.32	20

the CSPSCA (a scale evaluating the somatic symptoms and the symptoms that might appear in the school environment) scores was observed. Eisen and Silverman (1993) reported that the relaxation technique was very convenient for anxious children having somatic symptoms. In the present study, the differentiation observed in CSPSCA in the expected direction points to the targeted change, obtained as a result of relaxation training. In addition to this, many exposure exercises and frequent testing of participants' homework in therapy sessions are the other factors that are likely to have caused the change in the CSPSCA scores.

Therapists following the cognitive-behavioral perspective focus on the relationship between the psychopathology and cognitive processes (Silverman and DiGueseppe, 2001). This model explains the psychopathology with a cognitive approach, and emphasizes the effect of non-functional cognitions in the disorders, such as anxiety and depression. Individuals with social anxiety often focus on deficiencies in their social performance, and this attitude further increases their anxiety symptoms. Their fears are based on thoughts that social settings are threatening, and accordingly being criticized by others is dangerous (Rheingold et al., 2003). Negative cognitions are less frequently encountered in young children; however the negative cognitions of older children and adolescents are similar to those of the adults (Ollendick and Hirshfeld-Becker, 2002). In the present study, whether or not the cognitive restructuring sessions made a difference on cognitive errors, as evaluated before and after therapy, was also examined. When the CNCEQ scores were compared, it was found that the cognitive error scores of the therapy group decreased significantly compared to the control group, before and after the administration of the therapy program. These results suggest that the therapy program administered in the present study was effective in alleviating cognitive errors.

In addition to evaluating the participating adolescents, their parents were also asked to evaluate the social anxiety symptoms of their children before and after the therapy program. When the results were examined, it was revealed that the social anxiety symptoms observed by the parents in their children decreased considerably in the post-test; however, the evaluations of the parents in the control group did not change. These findings show that beyond the physiological, emotional, and cognitive changes observed by the adolescents themselves, there were also some changes noticeable to the others; in other words changes that might be reflected in outwardly visible behaviors.

It is argued that having a guidebook of the therapy program that is going to be administered is an important criterion in psychotherapy effectiveness studies (Chambless and Hollon, 1998). The activities that are going to be completed in each session, or at least the framework to be followed by the therapist should be indicated in a guidebook (Lonigan et al., 1998). In this way, the administering of the therapy program will be standardized and the participant's commitment to the therapy program will be ensured, which are both important considerations for this type of study (Steele and Roberts, 2005). A detailed guide book was prepared for and followed by this study as well, in order to insure that procedures were conducted adequately. Furthermore, the administration of the therapy program was supervised by three authors who are experienced in cognitive-behavioral therapies for children. Ingram and Riley (1998) reported that both the education of the therapist and correct supervision were very important in terms of the study's validity, and the use of an objective assessment, evaluating whether the therapy was conducted in the way the guidebook defined it or not, would make such studies stronger. As a matter of fact, in recent years the studies evaluating whether therapy was conducted adequately or not were often initiated because the use of a guidebook had not been found to be sufficient to ensure adherence to the study's guidelines. In these studies, scales such as the Cognitive Therapy Scale and the Cognitive Therapy Adherence and Competence Scale were developed to evaluate the adherence to the therapies that are going to be used as cognitive therapy (Soygüt et al., 2008). In the present study, these types of assessment instruments were also used to evaluate the adherence to, and competence of the therapy application. For example, participants were asked for their permission to be recorded; however, as some of the participants didn't approve, the sessions could not be shot. This type of evaluation can not be made in a retrospective way. Although the therapy was applied under supervision and according to the guidebook, it is possible to say that the lack of adherence and competence evaluations is questionable, in terms of the internal validity of the study.

Also, an important limitation that might affect the generalizability of the results is that the sample consisted of only female students. In the literature, there was only one study conducted exclusively with female adolescents (Hayward et al., 2000). When compared to the pilot study conducted with a mixed sample in terms of gender, it is argued that the exclusively female sample contributed to the group attachment, especially in the first sessions. On the other hand, it should be remembered

the target group consisted of 12-14 year-old female adolescents, thus the findings can only be generalized for this age and gender. Another limitation of the study is the lack of follow-up data, which makes evaluation of the long-term effects of the findings impossible. The fact that an alternative therapy area control group was not used in addition to the control group who did not receive any treatment, to evaluate the effectiveness of the therapy program, can be considered as another limitation of the study. Using a control group receiving an alternative treatment could make possible comparisons between this program and other alternative treatment programs. However, because of the difficulty finding students who would participate in the program and the time problem, this kind of approach was not possible. In addition, taking these limitations into consideration, future research should focus on applying such therapy programs to clinical groups in order to evaluate the effectiveness of the program on adolescents who show symptoms at the diagnostic level.

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