The Effectiveness of Cognitive Behavioral Therapy, Medication, or Combined Treatment For Childhood Anxiety Disorders

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SUMMARY

Objective: The aims of this study were to evaluate the effectiveness of the Fear Hunter cognitive behavioral therapy program, which was developed for the treatment of childhood anxiety disorders, and to compare its effectiveness with standard medication treatment.

Method: A total of 46 participants (aged 8 to 12) that applied to the Ege University, Faculty of Medicine, Child and Adolescent Psychiatry clinic and had a diagnosis of anxiety disorder were recruited for the study. The participants were randomly assigned to cognitive behavioral therapy (CBT), standard drug treatment (ST), or combined treatment (CBT+ ST) groups according to the order of application. Subjects were evaluated using pre-test, posttest and 3 months follow-up measurements. The participants were assessed by the researcher using The Screen for Child Anxiety Related Emotional Disorders (SCARED), The Children's Negative Cognitive Errors Questionnaire (CNCEQ), Health Related Quality of Life in Children (Kid-KINDL), and Children's Depression Inventory (CDI).

Results: The results of repeated measures ANOVA showed that, although general anxiety scores of all treatment conditions significantly decreased at posttest and follow up, a combination of two therapies (CBT+ST) had a significantly superior response rate. Moreover, all treatment conditions including CBT (CBT+ST and CBT) were superior to ST in terms of negative cognitive errors, quality of life, and depression.

Conclusion: It is thought that The Fear Hunter Therapy Program is an effective treatment technique because; it provides significant improvement in the primary and secondary symptoms (e.g. quality of life, depression, negative automatic thoughts) of childhood anxiety disorders.

Keywords: Anxiety Disorder, Cognitive Therapy, Behavioral Therapy

INTRODUCTION

Anxiety disorder is the most common childhood mental disorder and has prevalence between 8.6% and 17.7% (Essau et al. 2000, Ollendick et al. 2002, Egger ve Angold 2006, Leung et al. 2008). Because of their physiological, emotional, cognitive and behavioral effects, all types of anxiety disorders affect the functionality of children negatively and cause negative effects if left untreated, especially between family, friends, and school. Thus, practically applicable and structured therapy programs, which have proven their effectiveness, are needed for the treatment of childhood anxiety disorders. Even though the use of Cognitive Behavioral Therapy (CBT) as a treatment method in the field of mental health began in the 1970's, its use as an option for the treatment of childhood anxiety disorders has a history of only 20 years (Manassis 2009, Kendall 2006). The first structured CBT program in the field was the "Coping Cat" program developed by Kendall. This workbook, which was published by Kendall in 1990, was designed for children between the ages of 8 and 13 and had promise to be used as a psychological intervention

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program for the treatment of separation anxiety disorder, generalized anxiety disorder, panic disorder, agoraphobia, specific phobia, and social phobia (Kendall et al. 1998). Many researchers in the field, with Kendall and his team taking forefront, performed many controlled and followed up effectiveness studies (Kendall 1994, Kendall ve Southam-Gerow 1996, Barrett et al. 1996, Kendall et al. 1997, Beidel et al. 2000, Kendall et al. 2001, Nauta et al. 2003, Melfsen et al. 2011, Crawley et al. 2013, Kerns et al. 2013, Wergeland et al. 2014, Yen et al. 2014). Additionally, this program was adapted for different countries (e.g. the "Coping Bear" program for Canada, the "Coping Koala" program for Australia) or various therapy handbooks based on this program were published ("FRIENDS"- Barrett et al. 2000, "Social Effectiveness Therapy for Children SET-C"- Beidel et al. 1998).

Another structured CBT-based program is the "Fear Hunter" program developed for use in Turkey by combining excerpts all of the aforementioned therapy handbooks in detail (Sorias et al. 2009a, Sorias et al. 2009b). This program, which includes a workbook prepared for use by the child in therapy sessions and a handbook for the therapist, targets children between the ages of 8 and 14 diagnosed with separation anxiety disorder, generalized anxiety disorder, specific phobia, or social phobia. The only study examining the effectiveness of the Fear Hunter Program performed in Turkey was performed by Tekinsav-Sütçü et al (2010), and the findings of this study were presented in an international congress. In the results, the CBT was observed to be superior to drug treatment (with respect to anxiety levels and selective isolation type cognitive errors) and the CBT group had a meaningful decrease in score for these variables.

Another routinely used treatment method for childhood anxiety disorders is standard drug treatment. The number of studies comparing the effectiveness of the therapeutic effects of medicine therapy and CBT are limited in literature. Bernstein et al (2000) conducted a study on separation anxiety patients with school refusal, imipramine treatment, individual-based CBT, and placebo alongside CBT and compared the results. The CBT combined with drug treatment showed meaningful betterment compared to the placebo group, especially with respect to the continuing school variable. While anxiety and depression symptoms decreased meaningfully in both groups, the process of symptom reduction in participants who met the medicine alongside CBT condition was significantly faster. In another study conducted with a similar sample (Wu et al. 2013), the conditions of individual CBT and CBT alongside fluoxetine treatment were compared. Although the rates of betterment in those who took combined therapy were better, a statistically meaningful difference between the two groups couldn't be found. In a study by Beidel et al (2007) where the effectiveness of medicine, CBT, and placebo were compared for the treatment of childhood social phobia, both treatments were shown to be superior to placebo meaningfully with CBT being superior to medicine treatment.

In Walkup and colleagues' (2008) comprehensive study comparing drug treatment and CBT in the treatment of childhood anxiety disorders, all treatment conditions were superior to placebo, and combined treatment produced better results compared to other treatment conditions, especially with regard to anxiety symptoms. The study was validated by a 12-week and 36-week study that observed similar findings (Ginsburg et al. 2011, Piacentini et al. 2014).

The aim of this study was to compare the effectiveness of the Fear Hunter Program, which is the first structured cognitive behavioral therapy program in Turkey developed for use in the individual treatment of childhood anxiety disorder with standard drug treatment. The second aim of the study was to research whether combined therapy (CBT + ST) is superior to ST or only CBT.

METHOD

Sample

The sample of this study consists of 46 participants between the ages of 8 and 12 admitted to the Ege University School of Medicine Children and Adolescents' Mental Health and Diseases Polyclinic with diagnosis criteria for anxiety disorder according to the DSM-IV-TR (specific phobia, social phobia, separation anxiety disorder, or generalized anxiety disorder). The distribution of the participants according to their demographic characteristics was shown in Table 1.

The primary or secondary diagnosis meeting the criteria for obsessive-compulsive disorder, post traumatic stress disorder, agoraphobia or acute stress disorder, the primary diagnosis not being anxiety disorder, mental retardation, generalized developmental disorder, psychosis, oppositional defiant disorder, conduct disorder or substance use being the secondary diagnosis, the presence of an organic based chronic disorder, and the presence of a recent trauma with ongoing legal process were determined as exclusion criteria.

As a result, 46 patients that were diagnosed with anxiety disorder by specialist doctors working at the children and adolescents' mental health polyclinic were assigned to one of the groups randomly: cognitive behavioral therapy (CBT), CBT alongside standard drug treatment (CBT+ST), or standard drug treatment (ST). One of the participants in the CBT condition left the study in the third week of therapy because and the patients was not able to regularly attend the weekly therapy program. Thus, the analyses of the study were made over the 45 people who were able to complete the process and reach the posttest and follow up data.

Table 1. Distribution of Sociodemographic Characteristics and Psychiatric Diagnosis of Participants

	ST (n = 15)	CBT (n = 16)	CBT+ST (n = 15)
Gender			
Female	8 (53.3)	9 (43.8)	9 (60.0)
Male	7 (46.7)	7 (56.3)	6 (40.0)
Age			
X	9.80	9.94	10.27
SD	1.37	1.57	1.44
Socioeconomic Status			
Lower	3 (20.0)	5 (31.3)	5 (33.3)
Middle	6 (40.0)	6 (37.5)	5 (33.3)
Upper	6 (40.0)	5 (31.3)	5 (33.3)
Primary Diagnosis			
Specific Phobia	2 (13.3)	3 (18.8)	2 (13.3)
GAD	5 (33.3)	7 (43.8)	6 (40.0)
Social Phobia	4 (26.7)	3 (18.8)	3 (20.0)
SAD	4 (26.7)	3 (18.8)	4 (26.7)
Additional Diagnosis			
None	7 (46.7)	6 (37.5)	7 (46.7)
ADHD	2 (13.3)	3 (18.8)	3 (20.0)
Depression	3 (20.0)	4 (25.0)	4 (26.7)
Stutter	1 (6.7)	1 (6.3)	0
Basic Tic	0	1 (6.3)	1 (6.7)

X: Mean; SD: Standard Deviation; GAD: Generalized Anxiety Disorder; SAD: Separation Anxiety Disorder;
ADHD: Attention Deficit and Hyperactivity Disorder; ST: Standard Drug Treatment; CBT: Cognitive Behavioral Therapy

INSTRUMENTS

The data for the study was collected using self report scales filled out by the children and their families. In the measurements taken from the children, the "The Screen for Child Anxiety Related Emotional Disorders (SCARED)" for determining anxiety levels (Birmaher et al. 1997, Karaceylan-Çakmakçı 2004), the "The Children's Negative Cognitive Errors Questionnaire (CNCEQ)" for evaluating negative cognitive errors (Leitenberg et al. 1986, Aydın 2006), the "Health Related Quality of Life in Children (Kid-KINDL)" for the evaluation of general quality of life (Ravens-Sieberer ve Bullinger 1998, Eser et al. 2008) and the "Children's Depression Inventory (CDI)" for the questioning of depressive symptoms (Kovacs 1980, Öy 1991) were used. For family measurements, the parent form of the "Childhood Anxiety Disorders Scanning Scale", and the parent form of the "General Health Related Quality of Life Scale for Children (KİD-KINDL)" were used. Additionally, an "Information Questionnaire" prepared by the researchers questioning various information regarding the child and his/her family was filled out by the parents. All of these psychometric measurements were collected before, right after, and three months following the intervention.

PROCEDURE

Before proceeding with the application and data collection phases of the study, an "Ethical Board Permission" was taken from the Ege University School of Medicine Ethical Board. After ethical board permission was granted, patients that were admitted to the Children's Mental Health Polyclinic and met the inclusion criteria were referred to the researcher by the specialist doctor in the polyclinic. The researcher contacted the families of the patients via phone and gave them a pre-interview appointment, and gave detailed information regarding the study in the pre-interview. At the end of the pre-interview, the patients and families who agreed to participate signed an "Informed Consent Form". As a result, 46 participants between the ages of 8 and 12 whose families agreed to participate in the study as well as themselves were assigned randomly according to their order of referral to the CBT, CBT+ST, or ST conditions. The patients assigned to the two groups with standard drug treatment (the ST and CBT+ST groups) were referred again to the polyclinic to start the therapy at the same time with the appropriate specialist prescribed drug therapy. Doctors monitored the patients regularly in the polyclinic in this process.

Table 2. Mean and Standard Deviation Values of Scale Scores

	ST (N = 15) X ± SD			CBT (N = 15) X ± SD			CBT+ST (N = 15) X ± SD		
Scale Scores	Pre Test	Post Test	Follow Up	Pre Test	Post Test	Follow Up	Pre Test	Post Test	Follow Up
SCARED Child	35.07 ± 10.21	29.00±8.82	28.53±8.63	33.93±7.33	27.87±6.88	26.87±6.49	31.93±9.74	19.33±7.83	18.67±7.54
SCARED Parent	36.00 ± 12.86	30.00±10.82	29.40±10.42	37.07±11.48	29.47±10.54	28.53±10.45	30.93±10.14	20.87±7.17	19.60±6.61
CDI Total	17.47±3.98	15.20±3.63	14.73±3.33	15.07±5.84	11.40 ± 4.59	10.80±4.18	17.80±6.70	11.87±4.42	11.47±4.36
Kid-KINDL Child	74.00±6.39	76.67±6.37	76.89±6.38	73.33±13.69	78.72±10.17	79.33±10.04	71.78±11.96	78.44±8.65	79.28±7.73
Kid-KINDL Parent	72.11±9.20	73.61±8.46	74.44±7.07	71.94±13.52	78.78±10.42	79.17±9.70	69.11±10.58	76.83±7.04	78.39±5.97
CNCEQ Total	68.20±17.89	65.13±17.07	65.67±16.69	68.80±15.88	56.40±13.79	55.13±13.62	61.53±20.59	47.27±17.27	45.20±16.58

X: Mean; SD: Standard Deviation; ST: Standard Drug Treatment; CBT: Cognitive Behavioral Therapy; SCARED: The Screen for Child Anxiety Related Emotional Disorders; CDI: Children's Depression Inventory; Kid-KINDL: Health Related Quality of Life in Children; CNCEQ: The Children's Negative Cognitive Errors Questionnaire

CBT applications were performed by a clinical psychologist that participated in the formation of the Fear Hunter therapy program, which was being tested for effectiveness in the study, and had experience from pilot applications performed under supervision. The CBT program applied in the study consisted of 3 family sessions and 13 children's sessions in 60 minute individual interviews, forming a total of 16 sessions. In children's sessions, a workbook prepared for them was followed and the content of the interviews were formed according to this workbook (Sorias et al. 2009b). Additionally, all of the children and family sessions performed in this 16 week program were planned according to the printed therapy handbook (Sorias et al. 2009a). The main CBT techniques used in the therapy method were: psycho-education focused on the emotional and physical symptoms of anxiety; techniques on coping with the emotional and physical symptoms of anxiety (breathing exercises, gradual muscle relaxation technique, and attention shifting exercises); cognitive restructuring for recognizing the interaction between thought-emotion-behavior and changing nonfunctional thoughts through inner conversations; problem solving skills; and exposure (Sorias et al. 2009a, Sorias et al. 2009b).

Statistical Analysis

Data collected from the scales were analyzed using the SPSS package program. First, the groups were differentiated according to various socio-economical characteristics, the anxiety disorder diagnosis they received, and the psychiatric medications used and determined through chi-squared analysis. Additionally, each scale total score went through one way ANOVA in order to determine whether pretest data differentiated in a group by group basis. To compare the effectiveness of the treatments, repeated measured ANOVA was used.

RESULTS

First, the groups were differentiated according to various socio-demographic characteristics, the anxiety disorder diagnosis they received, and the psychiatric medications used were determined. As a result of the chi-squared analyses performed, no statistically meaningful difference between the groups with regard to gender, socio-economic status, and the anxiety disorder diagnosis received was found ($\chi^2(2) = 0.52$, $p > 0.05$; $\chi^2(8) = 3.87$, $p > 0.05$; $\chi^2(4) = 2.35$, $p > 0.05$; $\chi^2(6) = 0.785$, respectively $p > 0.05$). The differentiation between the groups with regard to the age variable was observed through a one way ANOVA, and no meaningful difference was found ($F(2,42) = 0.800$, $p > 0.05$). The participants in the CBT+ST and ST groups were differentiated with regard to medication prescribed by the specialist doctor and tested using chi- squared analysis. The prescribed medications were found to gather in three groups: fluoxetine (selective serotonin reuptake inhibitor; SSRI), sertraline (SSRI), and hydroxyzine (antihistamine, anxiolytic). In the results, it was observed that participants in both groups showed a similar distribution with regard to the medication they used, and no statistically meaningful difference was found ($\chi^2(2) = 0.19$, $p > 0.05$). Additionally, a difference between the groups with regard to the participants' anxiety disorder diagnoses and additional diagnoses (Shown in Table 1) were sought. No statistically meaningful difference was found (for anxiety disorder diagnosis distribution $\chi^2(6) = 0.785$, $p > 0.05$; for additional diagnosis distribution $\chi^2(10) = 5.532$, $p > 0.05$). Last, the pretest scores of the group were differentiated regarding the scale scores and was checked using one way variance analysis. No statistically meaningful difference between the groups with regard to the retest scores obtained from the scales used in the study was found ($p > 0.05$).

Comparison of Anxiety Levels

The SCARED Children's Form anxiety level score averages and standard deviations of the participants in each of the three treatment groups obtained in the pretest, posttest, and follow up phases are shown in Table 1. According to the results of the variance analysis performed for repeating measurements, the interaction between time and group was found to be statistically meaningful with regard to general anxiety levels

(Greenhouse-Geisser = 0.547, F(2.188,45.938) = 25.844; $p < 0.001$, $\eta^2 = 0.792$, Greenhouse-Geisser correction applied). In order to determine which groups the difference was between, Post Hoc analysis using Bonferroni correction was used. When the changes within each of the treatment groups were examined, the anxiety levels of all three groups were observed to meaningfully reduce in the measurements after treatment. In posttest and follow up comparisons, the meaningful decrease was observed to continue in the CBT and CBT+ST groups ($p < 0.05$) while, no difference in posttest and follow up was observed in the ST group ($p > 0.05$). When the effectiveness of the three treatment methods were compared, it was found that the anxiety level scores of the CBT+ST group decreased meaningfully compared to the ST and CBT treatment groups ($p = 0.005$ and $p = 0.015$, respectively). This result was found to be consistent in the monitoring phase ($p = 0.003$ and $p = 0.015$, respectively).

The SCARED Parents' Form anxiety level score averages and standard deviations of the participants in each of the three treatment groups obtained in the pretest, posttest, and follow up phases are shown in Table 1. According to the results of the variance analysis performed for repeating measurements, the interaction between time and group was found to be statistically significant with regard to general anxiety levels (Greenhouse-Geisser = 0.564, F(2.257,47.398) = 5.606; $p = 0.005$, $\eta^2 = 0.211$, Greenhouse-Geisser correction applied). In order to determine which groups shared differences, Post Hoc analysis using Bonferroni correction was used. When the changes within each of the treatment groups were examined, the anxiety levels of all three groups were observed to significantly reduce in the measurements after treatment. In posttest and follow up comparisons, the meaningful decrease was shown to continue in the CBT and CBT+ST groups ($p < 0.05$) while, no difference in posttest and follow up was seen in the ST group ($p > 0.05$). When the effectiveness of the three treatment methods were compared, it was found that the anxiety level scores of the CBT+ST group decreased meaningfully compared to the ST and CBT treatment groups ($p = 0.039$ and $p = 0.044$, respectively). The general anxiety scores of the CBT+ST group decreased significantly compared to the other two treatment groups in the monitoring phase as well ($p = 0.019$ and $p = 0.036$, respectively).

Comparison of Depressive Symptoms

The CDI total score averages and standard deviations of the participants in each of the three treatment groups obtained in the pretest, posttest, and follow up phases are shown in Table 1. According to the results of the variance analysis performed for repeating measurements, the interaction between time and group was found to be statistically significant with regard to CDI total scores (Greenhouse-Geisser = 0.604, F(2.417,50.747) = 13.132, $p = 0.000$, $\eta^2 = 0.385$, Greenhouse-Geisser correction applied). In order to determine which groups shared differences, Post Hoc analysis using Bonferroni correction was used. When the changes within each of the treatment groups were examined, the depression levels of all three groups were observed to significantly decrease in the measurements after treatment. In follow up, however, only the decrease in the CBT group was observed to continue significantly, while the posttest data in the CBT+ST and ST groups remained unchanged ($p > 0.05$). When the effectiveness of the three treatment methods were compared, it was determined that the CDI total scores of the participants in the CBT group were lower in a statistically significant manner compared to the ST group in both posttest ($p = 0.038$) and follow up ($p = 0.027$). Similarly, it was found that the depression total scores of the participants in the CBT+ST group were statistically and significantly lower compared to the ST group in both posttest ($p = 0.042$) and follow up ($p = 0.044$).

Comparison of Quality of Life Levels

The KID-KINDL Children's Form quality of life total score averages and standard deviations of the participants in each of the three treatment groups obtained in the pretest, posttest, and follow up phases are shown in Table 1. According to the results of the variance analysis performed for repeating measurements, the interaction between time and group was found to be statistically significant with regard to quality of life total score (Wilks $\lambda = 0.805$, F(4,82) = 2.578; $p = 0.042$, $\eta^2 = 0.108$). In order to determine which groups the difference was between, Post Hoc analysis using Bonferroni correction was used. When the changes within each of the treatment groups were examined, the quality of life levels of all three groups were observed to meaningfully increase in the measurements after treatment ($p<0.05$). In posttest and follow up comparisons, the betterment in the CBT and CBT+ST groups was observed to continue significantly ($p<0.05$) while, there was no difference between posttest and follow up in the ST group ($p > 0.05$). When the effectiveness of the three treatment methods were compared, it was found that the quality of life total scores of the CBT+ST and CBT groups increased significantly compared to the ST treatment group (respectively $p = 0.021$ and $p = 0.028$) with regard to posttest data. This result didn't change in the monitoring scores either, with the scores of the participants in the CBT+ST and CBT groups showing significant increase compared to the ST group (respectively $p = 0.011$ and $p = 0.015$).

The KID-KINDL Parents' Form quality of life total score averages and standard deviations of the participants in each of the three treatment groups obtained in the pretest, posttest, and follow up phases were shown in Table 1. According to the results of the variance analysis performed for repeating

Table 3. Summary Table of Results

Instrument	Time	Group Effectiveness Results	Significance Level
SCARED Child Form	Post Test	CBT+ST > ST, CBT+ST > CBT	P<0.05
Total Anxiety Score	Follow Up	CBT+ST > ST, CBT+ST > CBT	P<0.05
SCARED Parent Form	Post Test	CBT+ST > ST, CBT+ST > CBT	P<0.05
Total Anxiety Score	Follow Up	CBT+ST > ST, CBT+ST > CBT	P<0.05
CDI Depression	Post Test	CBT+ST = CBT > ST	P<0.05
Total Score	Follow Up	CBT+ST = CBT > ST	P<0.05
Kid-KINDL Child Form	Post Test	CBT+ST = CBT > ST	P<0.05
Quality of Life Total Score	Follow Up	CBT+ST = CBT > ST	P<0.05
Kid-KINDL Parent Form	Post Test	CBT+ST = CBT > ST	P<0.05
Quality of Life Total Score	Follow Up	CBT+ST = CBT > ST	P<0.05
CNCEQ Negative Cognitive	Post Test	CBT+ST = CBT > ST	P<0.05
Errors Total Score	Follow Up	CBT+ST = CBT > ST	P<0.05

SCARED: The Screen for Child Anxiety Related Emotional Disorders; CDI: Children's Depression Inventory; Kid-KINDL: Health Related Quality of Life in Children; CNCEQ: The Children's Negative Cognitive Errors Questionnaire; ST: Standard Drug Treatment; CBT: Cognitive Behavioral Therapy

measurements, the interaction between time and group was found to be statistically significant with regard to quality of life total score (Wilks $\lambda = 0.567$, $F(4,82) = 6.731$; $p = 0.000$, $\eta^2 = 0.247$). In order to determine which groups the difference was between, Post Hoc analysis using Bonferroni correction was used. When the changes within each of the treatment groups were examined, the quality of life levels of all three groups were observed to significantly increase in the measurements after treatment ($p<0.05$). In posttest and follow up comparisons, the betterment in the CBT and CBT+ST groups was observed to continue significantly ($p < 0.05$) while there was no difference between posttest and follow up in the ST group ($p > 0.05$). When the effectiveness of the three treatment methods were compared, it was found that the parent form quality of life total scores of the CBT+ST and CBT groups increased significantly compared to the ST treatment group (respectively $p = 0.039$ and $p = 0.025$) with regard to posttest data. This result didn't change in the follow up scores either, with the scores of the participants in the CBT+ST and CBT groups showing significant increase compared to the ST group (respectively $p = 0.028$ and $p = 0.019$).

Comparison of Negative Cognitive Error Levels

The CNCEQ total score averages and standard deviations of the participants in each of the three treatment groups obtained in the pretest, posttest, and follow up phases are shown in Table 1. According to the results of the variance analysis performed for repeating measurements, the interaction between time and group was found to be statistically significant with regard to CNCEQ total scores ((Greenhouse-Geisser = 0.577, $F(2.307,48.44) = 39.765$; $p = 0.000$, $\eta^2 = 0.654$,Greenhouse-Geisser correction applied). In order to determine which groups had shared differences, a Post Hoc analysis using Bonferroni correction was used. When the changes within each of the treatment groups were examined, the CNCEQ total scores of the CBT+ST and CBT groups were determined to significantly decrease in the measurements after the treatments, while no significant difference was observed in the participants in the ST group ($p > 0.05$). The results were similar in the posttest and follow up comparisons (CBT+ST and CBT $p < 0.05$; ST $p > 0.05$). When the effectiveness of the three treatment methods were compared, it was found that the scores of the CBT+ST and CBT groups decreased significantly compared to the ST treatment group (respectively $p = 0.041$ and $p = 0.012$) with regard to posttest data. This result didn't change in the follow up scores either, with the negative cognitive error scores of the participants in the CBT+ST and CBT groups showing significant increase compared to the ST group (respectively $p = 0.039$ and $p = 0.003$).

The summary of the findings detailed above were shown in Table 3.

DISCUSSION

The main purpose of this study was to compare the effectiveness of the Fear Hunter program with standard medicine treatment and test whether combined therapy was superior to single therapy methods. When all of the findings were evaluated, it was shown that the CBT-based Fear Hunter program was effective in the treatment of childhood anxiety disorders. When the analysis results were further examined, the CBT+ST combined treatment condition was found to be superior to the other two treatment conditions in a statistically significant manner. With regard to depression levels, quality of life, and negative cognitive errors, which constitute the other variables, the participants in all of the conditions including CBT (CBT and CBT+ST) were found to show

more betterment compared to those in the ST condition on a significant level.

When the data pertaining to anxiety levels were evaluated, the participants who took CBT had significant decreases in their posttest scores and showed compliance with all of the CBT effectiveness studies in literature (Kendall 1994, Barrett et al. 1996, Kendall et al. 1997, Beidel et al. 2000, Kendall et al. 2001, Nauta et al. 2003, Beidel et al. 2007, Tekinsav-Sütcü et al. 2010, Melfsen et al. 2011, Kerns et al. 2013, Wergeland et al. 2014). The combined therapy provided more benefit in decreasing symptoms for all types of anxiety disorders when compared to only CBT or only drug treatment. In particular, this finding supports the results of the effectiveness studies comparing drug treatments and CBT (Walkup et al. 2008, Bernstein et al. 2000, Ginsburg et al. 2011, Wu et al. 2013, Piacentini et al. 2014).

The effect of childhood anxiety disorder CBT on depressive symptoms is a variable checked in many CBT effectiveness studies (Kendall, 1994, Barrett et al. 1996, Kendall et al. 1997, Beidel et al. 2000, Kendall et al. 2001, Nauta et al. 2003, Beidel et al. 2007, Melfsen et al. 2011, Kerns et al. 2013, Wu et al. 2013, Wergeland et al. 2014, Piacentini et al. 2014). As a result of the study, the depressive symptom levels of participants who took CBT decreased on a significant level compared to those in the waiting list, proving the effectiveness of CBT. Therefore, the results in this study regarding the significant effects of CBT on the reduction of depressive symptoms support studies in literature.

Quality of life and negative cognitive errors, which are among the variables of this study, were taken as variables in a very limited number of studies researching the effectiveness of CBT in the treatment of childhood anxiety disorders. However, both the decrease in negative cognitive error levels after the CBT application (Ishikawa et al. 2012, Beidel et al. 2007, Tekinsav-Sütcü et al. 2010) and the increase in quality of life (Bruce et al. 2013, Siu 2007) were consistent with those limited studies in the literature. When the quality of life scale used in this study (KID-KINDL) was examined with regard to sub scales, two sub scales where the group-time effect is significant catches the eye; the self-respect and school sub scales. With regard to both sub scale scores, the posttest and monitoring scores of the participants in the CBT+ST and CBT groups increased significantly compared to the ST group. CBT teaches the child skills regarding how to cope with anxiety, and the child's self-respect increases as a result. Additionally, a child who copes with his anxiety and controls it also starts to resolve school related problems (test anxiety, friendship related anxiety, anxiety related to separation from mother), increasing school related quality of life.

In conclusion, the improvement when those two treatments are combined was seen to be significantly more effective, although both CBT and medication provide significant improvement on the symptoms of childhood anxiety disorders. However, when the subject is not treating anxiety as the primary symptom but decreasing secondary problems accompanying anxiety (abundance of depressive characteristics, low quality of life, low self-respect, low school commitment, frequent negative cognitive errors), ST was not found to make a significant difference, whereas CBT applications were found to provide significant improvement by targeting these problems as much as anxiety symptoms.

This study has its strengths, including the number of studies where medication was taken as a variable which have CBT groups with and without additional medication is very limited in world literature. Additionally, this study is considered to provide the literature with important knowledge with regard to being randomized, including 3 month follow up data in analyses, and examining the effectiveness of CBT on new variables such as quality of life and negative cognitive errors. The study is thought to overcome an important deficiency in application and provide the field with an alternative and efficient treatment technique for this disorder group where routinely only medication is applied.

Despite the aforementioned strengths, this study has some limitations. First, the sample size was small compared to some other studies in literature. Another limitation of the study was the lack of a placebo control condition added to the CBT, ST, and CBT+ST conditions. The presence of a placebo condition regarding medicine use or a placebo intervention to replace CBT would make this study stronger with regard to method. Data being based on self-report scales and not including a diagnosis interview such as Kiddie-SADS is another limitation of the study. Finally, research data not being collected by independent evaluators is an important limitation of the study.

In light of all of these strengths and limitations, a higher target for effectiveness studies to be made in the future is to conduct a comprehensive randomized effectiveness study with a larger sample size, a placebo condition included in the pattern alongside treatment conditions, independent evaluators, and a diagnosis interview in the data collection tools. Additionally, it is thought that providing the field with handbook based CBT programs with proven effectiveness that can be used as alternatives to drug treatment not only for anxiety disorders but, for the treatment of many other childhood mental disorders would fill many voids both theoretical and practical.

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