

Is Triple P Positive Parenting Program Effective on Anxious Children and Their Parents? 4th Month Follow up Results

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Abstract The aim of this study is to evaluate the effectiveness of Triple P Positive Parenting Program, which has been shown to be effective in reducing children's behavior problems in a variety of populations, on childhood anxiety disorders. This is an open-labelled continuation study of the randomized, single-blinded, controlled trial which is done 4 months after the intervention. A total of 50 subjects ages between 8 and 12 diagnosed with anxiety disorder were enrolled to the open-labelled phase of the study. The two groups were compared right before and 4 months after the implementation with various questionnaires which measured the children's emotional and behavioral problems and anxiety severity and parental general well being and anxiety were also evaluated. Children's general anxiety level and anxiety disorder severity of intervention group were significantly lower than waiting list group. In this study, it is shown that parental anxiety and general well being were also improved. Our results suggest that Triple P may be an effective and useful method of treatment for anxious children. Large sample sized studies are needed.

Keywords Anxiety · Childhood anxiety disorders · Child–parent relation · Triple P · Parent intervention

Introduction

In general population, anxiety disorders affect 25 % of individuals over a lifetime as the most prevalent mental health problem. (Kessler et al. 2005b, 1994). Anxiety disorder usually begins in childhood (Kessler et al. 2005a) and it causes serious impairment in academic performance, peer relations and family functioning (Grills and Ollendick 2002). When childhood anxiety disorders are untreated, they can persist during adulthood, they can elevate risk for the development of depression, they can cause sleep disturbance, and they can end up with problematic substance usage (e.g., Alfano et al. 2007; Kaplow et al. 2001; Kendall et al. 2004).

After the treatment using cognitive-behavioral therapies (CBT); just about 60–70 % of youth do not meet criteria for an anxiety disorder (Kendall et al. 1997; Kendall et al. 2008; Silverman et al. 1999; Walkup et al. 2008). Applying CBT-based interventions to parents, as an alternative to using CBT with children who are diagnosed with anxiety disorder, has been evaluated. Thienemann et al. (2006) applied CBT protocol to a group of parents whose children were 7–16 years old and were diagnosed with primary anxiety disorders. After the protocol, children had significant improvement on parent and clinician rated measures of anxiety. This study indicated that parents acting as lay cognitive-behavioral therapists on anxious children may be effective for the treatment (Thienemann et al. 2006).

In Cartwith-Hatton et al.'s study (2011), parents of 74 anxious children (aged 9 years or less) taking part in the new 10-session group-format intervention were compared with a wait-list control condition. At the end of the study, it was found that children whose parent(s) received the intervention were significantly less anxious than those in the control condition (Cartwith-Hatton et al. 2011). In a similar study of Smith et al. (2014), the efficiency of a cognitive-

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behavioral intervention which was delivered to the parents of 31 anxious children (ages 7–13) was examined. Parents were randomly assigned to an individual or parent-only CBT intervention and significant reductions were seen in the number of anxiety disorder diagnoses, clinician rated severity of anxiety, and maternal protective behaviors at the post-treatment (Smith et al. 2014).

When associated with parental factors like anxious modeling, over controlling parenting style, child vulnerability factors, such as temperament, cognitive style, female gender and age play an important role in the etiology and maintenance of childhood anxiety (Bögels and Brechman-Toussaint 2006; Craske 2003; Rapee et al. 2009). Suboptimal behaviors of parents such as harsh punishment, shouting and anger are likely to produce fear reactions in children. Lack of consistency, non using positive techniques, ineffective discipline in parenting influence all children, especially more vulnerable children and all these play a big role in developing anxiety disorders (Belsky 2005). Not only studies with human but also studies with primates showed that, anxious children are particularly sensitive to the impacts of parenting (Suomi 1997). Educating parents about their children's emotional and behavioral problems and teaching the methods using behavioral change and increasing parental awareness of those mentioned problems can make changing process easier.

The Triple P (Positive Parenting Program) is a multilevel system of family intervention for parents of children who have behavior problems or are at risk of developing them. It is a preventively oriented program which aims to promote positive and caring relationships between parents and their children, and also to help parents develop effective management strategies for dealing with a variety of childhood behavioral and emotional problems and common developmental issues. Triple P is a form of behavioral intervention based on social learning principles. Specifically this program aims to enhance the knowledge, skills, confidence, self sufficiency, resourcefulness of parents, to promote nurturing, safe, engaging, non violent and low-conflict environments for children and to promote children's social, emotional, linguistic, intellectual and behavioral competencies through positive parenting practices (Turner et al. 2010).

Group Triple P has evolved from a program of clinical research (Sanders 1996; Sanders et al. 2000, 2004). The parent training methods employed in Triple P have been shown to be effective in reducing children's disruptive behavior in a variety of populations, including the depressed parents, children in step families, children with persistent feeding difficulties (Nicholson and Sanders 1999; Sanders et al. 2000; Turner et al. 1994). Sanders et al. (2012) organized a randomized controlled trial evaluating the efficacy of Triple P Online in parents of children with early-onset conduct problems. It was found that children's behavioral problems, dysfunctional parenting styles, parents' confidence

in their parenting role, and parental anger were improved and at 6-month follow-up assessment intervention gains were generally maintained. The effects of Level 4 Group Triple P were examined in population based study, involving 1610 parents by Zubrick et al. (2005) and it was found that 804 parents participating in Group Triple P reported significantly fewer conduct problems ($d = 0.83$), less dysfunctional parenting ($d = 1.08$), and lower levels of parental distress ($d = 0.38$) and marital conflict ($d = 0.19$) than parents in services as usual comparison communities at post intervention and in 1–2 years follow-up. The largest sample sized meta-analysis of Triple P was made by Sanders et al. 2014. In Sander's review (2014) 101 studies comprising of 16,099 families were analyzed quantitatively. The effect sizes of follow up data for Group Triple P in meta-analysis were 0.398 for children behavior, emotional and social problems, 0.457 for parenting practices, 0.512 for parenting satisfaction and efficacy and 0.458 for parental adjustment.

In previous studies, it has been shown that Triple P has positive effects on externalizing disorders. We aimed to evaluate the effectiveness of Triple P on childhood anxiety disorders and to assess its effects on behavioral and emotional problems, general anxiety level, severity of the disorder and general psychosocial functioning. Our additional aim in this study is to evaluate potential effects of Triple-P on anxiety and psychological well-being of parents of children with anxiety disorders. Externalizing behaviors sometimes represent expressions of underlying anxiety in children (American Academy of Child and Adolescent Psychiatry 2007; Rockhill et al. 2010). Some children show tantrum behavior in exposure to the feared situation instead of expressing feelings, due to information above externalising behavior of anxious children are also evaluated.

Method

Participants

124 children who were in the waiting list of Child and Adolescent Department Outpatient Unit in School of Medicine in Dokuz Eylul University and had an anxiety disorder due to The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) criteria evaluated by a child psychiatrist were asked to participate in this study. Children who had autism spectrum disorder, psychotic disorder, obsessive compulsive disorder, post traumatic stress disorder were excluded and 21 cases did not meet the criteria at evaluating time and 16 cases did not accept to participate in the study, 13 cases did not come to assessment session. 74 children who met the criteria for the trial were randomized with Random Sequence Generator application in the web site of www.random.org on 8th of February in 2013 at

08:18:12. Out of the 74 children whose parents accepted to participate, 50 children and their parents completed the study (26 children for the intervention group and 24 children for the waiting list group). One of 28 parents left the study in the second session and the one other parent left in the third session, thus 26 parents completed the study. The research protocol was approved by the Dokuz Eylül University of Medical Sciences Research Ethics Committee and all participants gave their informed consents to participate in the study and parents gave their assents. Cases in waiting list were in usual order to have visits in Child and Adolescent Psychiatry Department.

The facilitators were trained within the context of Balçova project in Izmir, Turkey by Alan Ralph, who is associate professor at parenting and family support centre school of psychology the university of Queensland Brisbane, in May 2012 and they were accredited in September 2012. The clinician who assessed the cases and parents was blind to intervention and waiting list group. The other two facilitators were leaders for Triple P group sessions together in sessions at Dokuz Eylül University Child and Adolescent Psychiatry Department.

Procedure

Following randomization into two equal groups, parents of the intervention group participated in Group Triple P for 8 weeks, whereas the waiting list group did not. The two groups were compared right before and 4 months after the implementation of rates of sociodemographic, emotional and behavioral variables. The study design was shown in Fig. 1.

Measures

Schedule for Affective Disorders and Schizophrenia for School Age Children Present and Life-time (KIDDIE-SADS-PL): The children's diagnosis was determined by The K-SADS-PL which is a semi-structured diagnostic interview designed to assess current and past episodes of psychopathology in children and adolescents according to DSM-III-R and DSM-IV criteria. Child and parent ratings are combined in a compound summary (Kaufman et al. 1997). Gökler et al. translated K-SADS-PL into Turkish and completed Turkish forms' validity and reliability in 2004 (Gökler et al. 2004). The clinician who assessed the children and their parents was blind to groups.

The Screen for Anxiety Related Emotional Disorders (SCARED) instrument consists of 41 items asking the parent (or caregiver) to indicate how often a descriptive phrase regarding how their child may have felt over the course of the previous three months is true. Respondents may select from the options of "Not True or Hardly Ever True", "Somewhat True or Sometimes True", and "Very

True or Often True." (Birmaher et al. 1997). Both child and parent's report were used. SCARED Turkish forms' validity and reliability was made by Çakmakçı (2004).

Global Functioning and Severity—The Children's Global Assessment Scale (CGAS) (Shaffer et al. 1985) is a widely used measure of overall severity of child disturbance, providing a clinician-rated index of functioning. Scores range from 0 to 100, with higher scores indicating higher levels of functioning and lower scores indicating greater functional impairments. The Clinical Global Impression-Severity Scale (CGI-S) is the most widely used clinician-rated measure of treatment-related changes in functioning (Guy 1976). The CGI-S score rates illness severity on a 7-point scale, ranging from 1 ("normal") to 7 ("among the most severely ill patients"). CGAS and CGI-S are usually used in Turkish Child and Adolescent outpatient and inpatient clinics. They are also used in a lot of Turkish clinic studies in this area. CGAS and CGI-S were used to indicate symptom severity in present study.

The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997) is a 25-item behavioral screening questionnaire measuring parents' perceptions of pro-social and difficult behaviors in children aged 3–16 years. Five scales are computed by summing the five items for each scale (emotional problems, conduct problems, inattention/hyperactivity problems, peer problems and pro-social behavior). Scores from the SDQ have been found to discriminate well between low- and high- risk samples (Goodman 1999). Güvenir et al. (2008) translated Turkish forms and their validity and reliability were made by Güvenir et al. (2008) Its Cronbach's alpha is 0.73. SDQ has been used in recent Triple P studies.

The General Health Questionnaire (GHQ) is a screening device for identifying minor psychiatric disorders in the general population and within community or non-psychiatric clinical settings such as primary care or general medical outpatients GHQ-28. A 28- item scaled version assesses somatic symptoms, anxiety and insomnia, social dysfunction and severe depression (Goldberg & Blackwell 1970). Kiliç et al. completed Turkish forms' validity and reliability in 1996 and its Cronbach's alpha is 0.94 (Kiliç 1996). GHQ was used to examine maternal mental health in this study.

The State-Trait Anxiety Inventory (STAI) is a psychological inventory based on a 4-point Likert scale and consists of 40 questions on a self-report basis. The STAI measures two types of anxiety—state anxiety (anxiety about an event) and trait anxiety (anxiety level as a personal characteristic). Higher scores are positively correlated with higher levels of anxiety (Spielberger 1970). Öner and Le Compte completed Turkish forms' validity and reliability in 1985. Parental anxiety was measured with STAI. Cronbach's alpha is 0.83–0.92 for state form and 0.83–0.87 for trait form (Öner and Le Compte 1983).

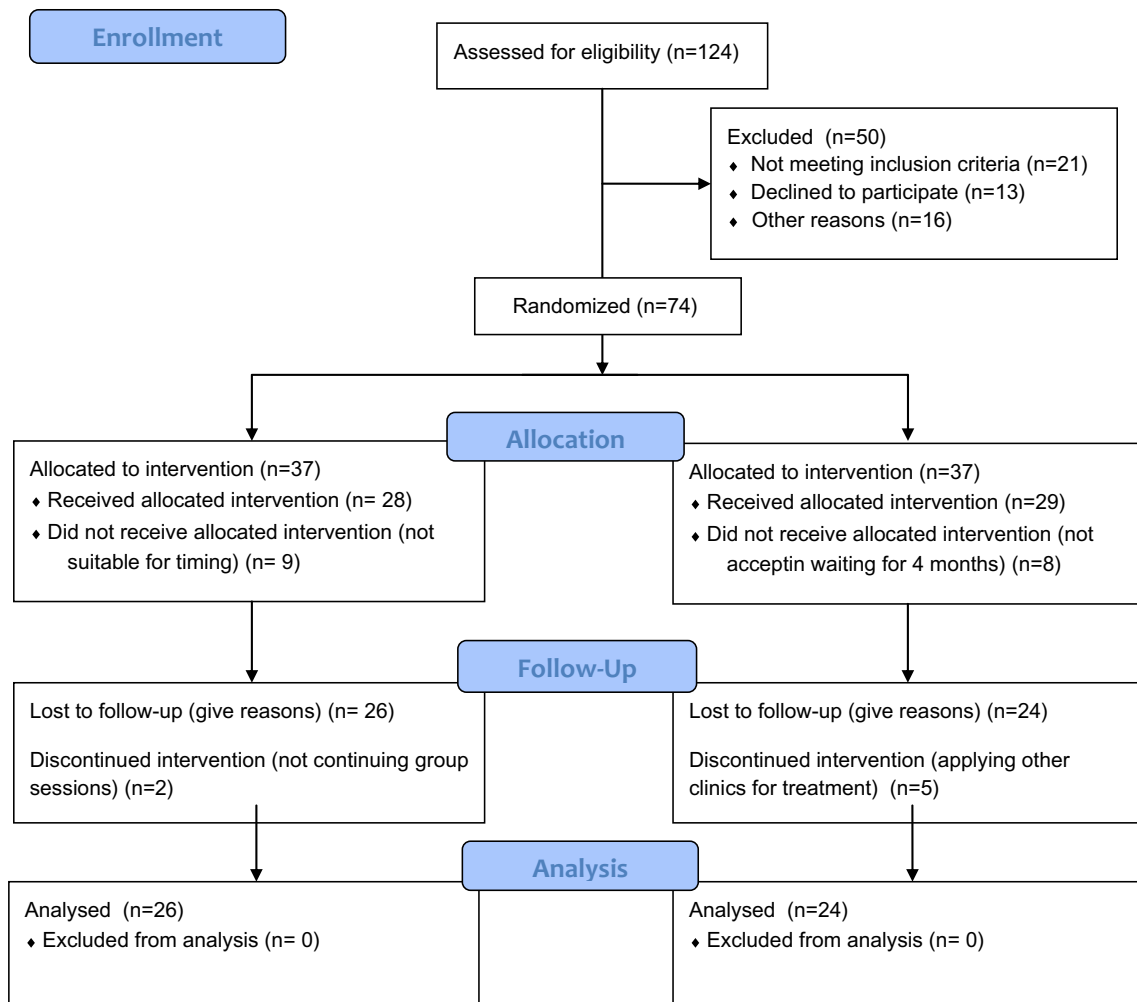


Fig. 1 Consort diagram

Intervention

Triple P

Group Triple P is delivered to parents over the course of 8 weeks. The program involves 5 (2 h) group sessions that educate and actively train skills, and three (15–30 min) individual telephone consultations that follow a self-regulatory format to facilitate independent problem solving. Contents of group session are shown in Table 1 (Turner et al. 2010).

Data Analysis

All data analyses were performed using SPSS 15.0. Continuous variables are presented by means of summary statistics. This (unless otherwise stated) refers to the number of patients (n), mean, standard deviation (SD). Categorical data are presented using either absolute and relative frequencies. Demographic data were compared

using Chi square. To evaluate the effectiveness of Triple P on childhood anxiety disorders and to assess its effects on behavioral and emotional problems, general anxiety level, severity of the disorder and general psychosocial functioning, the baseline measurements were compared using Mann–Whitney-U test since the scores were not normally distributed. Assumptions of normality were evaluated with the Shapiro–Wilk test. The effects of Triple-P on anxiety and psychological well-being of parents of children with anxiety disorders were also analyzed using Mann–Whitney-U test. All tests were two tailed with *p* values <0.05 considered significant.

Results

The mean age of the interventions were 9.65 ± 1.58 years and the mean age for controls were 9.83 ± 1.33 years. No statistically significant difference was observed between

Table 1 Contents of group triple P sessions

Session number	Content	Session duration
1. Positive parenting	Working as a group What is positive parenting? Why do children behave as they do Goals for change Keeping track	120 min (group)
2. Helping children develop	Developing good relationships with children Encouraging good behavior Teaching new skills and behaviors	120 min (group)
3. Managing misbehavior	Managing misbehavior Developing parenting routines Finalising your behavior chart	120 min (group)
4. Planning ahead	Family survival tips High risk situations Planned activities Preparing for telephone sessions	120 min (group)
5. Using positive parenting strategies 1	Preparing for the session Update on practice Other issues	15–30 min (telephone)
6. Using positive parenting strategies 2	Preparing for the session Update on practice Other issues	15–30 min (telephone)
7. Using positive parenting strategies 3	Preparing for the session Update on practice Other issues	15–30 min (telephone)
8. Program close	Preparing for the session Update on practice Phasing out the program Progress review Keeping up the good changes Problem solving for the future Future goals Final assessment	120 min (group)

the intervention and waiting list groups regarding their ages ($p = 0.71$). Ten out of 26 children were female in the intervention group and seven out of 24 children were female in the waiting list group. No statistically significant difference was observed between the intervention and waiting list groups regarding their gender ($p = 0.49$). This was indicated in Table 2. The average education level of mothers and fathers were similar in both groups. ($p = 0.77$, $p = 0.06$ respectively).

The distributions of psychiatric diagnosis in intervention and waiting list groups were indicated in Table 3. While there were no statistically significant differences between intervention and waiting list group in SDQ, CGAS, CGI-S, SCARED Child and Parent Report at the beginning, scores of SDQ, CGI-S, SCARED Child and Parent Report Form in intervention group are statistically significant in reducing and

Table 2 Sociodemographic data of intervention and waiting list group

	Intervention group	Waiting list group	<i>p</i>
Age	9.65 ± 1.58	9.83 ± 1.33	0.705*
Gender			
Male	46	17	0.488**
Female	10	7	
Maternal education			
<8 years	13	13	0.768**
>8 years	13	11	
Paternal education			
<8 years	8	14	0.055**
>8 years	18	10	

* Mann WhitneyU analysis

** Chisquare analysis

Table 3 Psychiatric diagnosis in intervention & waiting list group

Psychiatric diagnosis	Intervention n (%)	Waiting list n (%)
Social Anxiety Disorder (SAD)	3 (11.5)	4 (16.6)
Specific Phobia (SP)	0 (0)	2 (8.3)
Separation Anxiety Disorder (SeA)	5 (19.2)	5 (20.8)
Generalized Anxiety Disorder (GAD)	8 (30.8)	8 (33.2)
SA&GAD	2 (7.7)	2 (8.3)
SP&GAD	2 (7.7)	1 (4.2)
SA&SP	2 (7.7)	0 (0)
GAD&SeA	2 (7.7)	1 (4.2)
SA&GAD	0 (0)	1 (4.2)
SeA&SP	2 (7.7)	0 (0)
Total	26 (100.0)	24 (100.0)

Table 4 Average scores of children’s emotional and behavioral measurements in intervention and waiting list group before and after Triple-P Program

	Intervention Group		Waiting list Group		<i>p</i>	<i>p</i> *	Cohen’s <i>d</i>
	<i>T</i> _{1a}	<i>T</i> _{2a}	<i>T</i> _{1b}	<i>T</i> _{2b}			
SDQ	17.57 ± 4.02	9.0 ± 3.27	15.48 ± 5.49	17.87 ± 4.66	0.199	<0.000	2.20
CGAS	49.76 ± 6.95	74.5 ± 5.74	50.48 ± 6.04	52.2 ± 7.74	0.729	<0.000	3.27
CGI-S	3.84 ± 0.73	1.65 ± 0.68	3.65 ± 0.81	3.91 ± 1.01	0.315	<0.000	2.62
SCARED child form	32.88 ± 10.84	16.23 ± 7.44	31.65 ± 9.61	34.87 ± 11.17	0.691	<0.000	1.96
SCARED parent form	31 ± 8.29	16.46 ± 6.83	31.93 ± 9.02	34.91 ± 9.73	0.672	<0.000	2.19

Mann–Whitney U Test

SDQ strengths and difficulties questionnaire, *CGAS* children’s global assessment scale, *CGI-S* clinical global impression-severity, *SCARED* screen for child anxiety related emotional disorders parent and child forms

*T*_{1a} Before Triple-P implementation, *T*_{2a}, 4 months after Triple-P implementation

*T*_{1b} The initiation of the study, *T*_{2b} 6 months after the initiation of the study

p Comparison of scores between intervention and waiting list group before Triple P

*p** Comparison of scores between intervention and waiting list group after Triple P (*T*_{2a}–*T*_{2b})

scores of CGAS significant in increasing 4 months after Triple P (*p* < 0.001, *p* < 0.001, *p* < 0.001, *p* < 0.001, *p* < 0.001 respectively) (Table 4). Significant improvement in parental anxiety and general well-being were also observed in intervention group. These were indicated in Table 5.

Discussion

This study investigated the efficacy of a eight-session behavioral intervention delivered to the parents of anxious children versus a wait-list control condition in the 4th month. The anxiety of children and parents in intervention group decreased while the controls (waiting list group) did not report significant changes after a six-month waiting period. These results suggest that Triple P can be used as an effective method for the treatment of anxiety disorders in children.

The main outcome of this study is the significant decreasing of SCARED-child and parent form scores in

intervention group. This finding shows parallelism with other studies, in which CBT-based interventions like Triple P were performed on parents. In a study which is in very similar pattern in the relevant literature, Monga et al. (2009) performed a 12-week cognitive behavioral group therapy on the parents of children with anxiety disorder and observed a significant regression in the scores of SCARED scores (Monga et al. 2009). In another similar study, an 8-week cognitive training was performed on parents and a distinct regression was reported in the anxiety levels of children (van der Sluis et al. 2012). Moreover, another interesting related finding is the data obtained by Bodden et al. from a study that was carried out in 2008. This study randomized the children with anxiety disorder and performed the CBT only on parents in one group and only on children in the other group. In this study using the SCARED, a significant decrease was observed in the anxiety levels of children on both groups (Bodden et al. 2008). It was shown that Triple-P was effective on decreasing the anxiety levels of children,

Table 5 Average scores of maternal anxiety and general well being in intervention and waiting list group before and after Triple-P Program

	Intervention Group		Waiting list Group		<i>p</i>	<i>p</i> *	Cohen's <i>d</i>
	T1a	T2a	T1b	T2b			
GHQ-28	4.88 ± 5.50	1.76 ± 1.9	4.34 ± 5.27	4.58 ± 3.58	0.538	<0.000	0.98
STAI-T	43.76 ± 8.25	27.23 ± 5.68	42.65 ± 10.28	37.16 ± 11.8	0.502	<0.000	1.07
STAI-S	37.15 ± 7.96	32.19 ± 6.22	34.93 ± 10.07	43.75 ± 9.82	0.367	<0.000	1.40

Mann–Whitney U Test

GHQ-28 general health questionnaire-28, *STAI-T*, state trait anxiety inventory-trait, *STAI-S* state trait anxiety inventory-state

T1a Before Triple-P implementation, *T2a* 4 months after Triple-P implementation

T1b The initiation of the study, *T2b* 6 months after the initiation of the study

p Comparison of scores between intervention and waiting list group before Triple P

*p** Comparison of scores between intervention and waiting list group after Triple P (*T2a*–*T2b*)

supporting the studies using the CBT-based interventions in the treatment of children with anxiety disorder.

This present study indicates that performing Triple-P on the parents of children and adolescents with anxiety disorder decreases the emotional and behavioral problems in children. The finding shows a similarity with the findings of other studies that were performed with the Triple P in the relevant literature and used the SDQ (Arkan et al. 2013; Leung et al. 2003; Martin and Sanders 2003; Sanders et al. 2008; Sanders et al. 2000; Turner et al. 2007). It was determined that the total difficulty scores of children decreased in the strengths and difficulties questionnaire of children and adolescents as in our study.

In present study, a significant increase in CGAS scores of the intervention group was observed when compared to waiting list group 4 months after the intervention, supporting the findings of relevant literature (Comer et al. 2012; Monga et al. 2009; Muratori et al. 2003). The researchers, who applied the CALM (Coaching Approach Behavior and Leading by Modeling) program in a study that was conducted by Comer et al. (2012) on children with Anxiety Disorder determined that the CGAS scores increased after the program (Comer et al. 2012). In another study, it was determined that the CGAS mean score significantly increased after the 12-week CBT group sessions, which were performed on the parents of children with Anxiety Disorder (Monga et al. 2009). As a similar finding in our study; a significant decrease in the CGI-S in intervention group was observed. When we look at the relevant literature, it is remarkable that there is a limited number of studies involving interventions aimed at parents where the data are evaluated with CGI-S in studies that are performed with children and/or adolescents with anxiety disorder. Regarding this subject, Becker conducted a study like Triple-P based on a CBT-based treatment. In that study, they applied the parent child therapy in children aged between 4 and 7 and diagnosed with Anxiety Disorder and determined that the Illness Severity scores of the Clinic

Global Impression Scale significantly regressed (Hirshfeld-Becker et al. 2010).

Parents' own anxiety and general well being differences between control group and intervention group are secondary outcomes of this child-focused intervention rather than a treatment target. When we look at the current studies, in some Triple P studies (Bor et al. 2002; Sanders et al. 2004; Turner and Sanders 2006) parental anxiety was not changed while in some of Triple P parents anxiety level was decreased as in our study. (Matsumoto et al. 2007; Nicholson and Sanders, 1999; Turner and Sanders 2006). In Bodden's study in which CBT based parent group intervention was applied, parents' anxiety level was reduced due to STAI scores (Bodden et al. 2008). Also, as in our study, in many Triple P studies, improvements in parents' mental health, reductions in stress level were observed after Triple P (Comer et al. 2012; Joachim et al. 2010; Leung et al. 2006; Motawska et al. 2006; Muratori et al. 2003; Ralph and Sanders 2003; Sanders et al. 2000; Stallman and Ralph 2007; Zubrick et al. 2005). The last and largest sample sized meta-analysis of Triple P (Sanders et al. 2014) showed that Triple P does not make significant effects in parental outcomes for short time but Triple P was found very effective for all outcomes at long-term including parental data (Sanders et al. 2014). It was found similarly in our study's short term (Özyurt 2013) and long term results.

While the study findings show great effects, the small sample size reduce its power to detect differences between intervention and waiting list group. Parental ratings may be mistakable because they were not blinded and also waiting 6 months was difficult for controls and controls' parents. Clinician who rated the children was only blinded. But the scores of clinician, parents and children are similar. Although the results were interesting, teacher reports had to be evaluated. Teachers could be more objective than parents. At the end of 6 months controls' parents were involved to Triple P for ethical reasons. The small sample size reduced its power to detect the efficacy of Triple P on childhood anxiety disorders.

Childhood anxiety disorders have an impact on self-respect, social interactions, academic success and functionality. Children who are diagnosed with an anxiety disorder are at risk for many psychiatric disorders in adulthood including mood and anxiety disorders. Accordingly, treatment of anxiety disorders have a distinct importance. In this study, it was found that children's anxiety level and severity of the disorder significantly decreased and the child's functionality significantly improved with applying Triple P to children's parents. Our results suggest that Triple P may be an effective and useful method of treatment for children and adolescents who have anxiety symptoms or anxiety disorders.

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