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Research Article

# Adaptation of the “Incredible Years Child Training Program” and Investigation of the Effectiveness of the Program \*

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## Abstract

The purpose of this research is to examine the effect of the “Incredible Years (IY) Child Training Program” on behavioral problems, social competence, and social problem-solving skills. The research was performed using a pretest-posttest experimental design with a control group to determine the effects of the IY program on the level of behavioral problems among children. The study group comprised children aged 48–66 months, attending early childhood education institutions affiliated with the Ministry of National Education (MoNE) in Ankara, recruited through a staged sampling method. To collect data, the study used a personal information form, the Social Competence and Behavior Evaluation (SCBE) scale, the Child Behavior Assessment (CBA) scale and the Wally Social Problem Solving (WSPS) test. The pretest and posttest scores for the experimental and control groups on the SCBE and CBA scales, and the WSPS scale, as well as the permanence measures, were analyzed using the Friedman test and the Wilcoxon signed rank test. Moreover, for the post hoc test statistics, Bonferroni correction was applied to the comparison test to determine the significance of differences between the groups. Following the experimental study covering 18 sessions, significant differences were determined in the scores for behavioral problems and social problem-solving between children who had and had not participated in the program. When the permanence measurements were examined, significant differences were determined in the social problem-solving scores between the experimental groups and control groups.

## Keywords

Incredible Years (IY) • Intervention program • Behavioral problems • Social problem solving

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The early childhood period is critical in terms of determining the developmental trajectory of children (Baydar, Küntay, Gökşen, Yağmurlu, & Cemalcılar, 2010). The social and emotional skills of children aged 3–6 develop step by step, influencing every stage of their lives (Webster-Stratton, Reid, & Stoolmiller, 2008). In the progress of children's social and emotional development, social competence, social problem-solving skills, and behavioral problems exert an effect. In developmental and clinical studies performed in the early childhood period, a permanence rate of negative behavioral patterns in the childhood period points to more significant behavioral problems, and causes disruption in terms of social competence and academic functionality; such behavioral problems include aggression, negative affect, and non-adaptation (Heller, Baker, Henker, & Hinshaw 1996; Moffitt, 1993; Shaw, Gilliom, Ingoldsby, & Nagin, 2003). Social competence is defined as the ability to consider facts relevant to a condition from the perspective of others, deriving lessons from past experiences and applying these lessons to the changing social sphere (Semrud-Clikeman, 2007). Social problem solving is a cognitive process aimed at discovering and defining acceptable and satisfactory solutions to conflicts for both parties (D'Zurilla, Nezu, & Maydeu-Olivares, 2004).

In early childhood, the behaviors of children are flexible, their cognitive process alternating between reality and imagination is extremely soft, and their socialization process is responsive to change (Webster-Stratton et al., 2008). As this period is determinant in terms of development, many intervention programs such as "I Can Problem Solve" and "First Step to Success," aimed at supporting development, are targeted at children aged 3–6 (Baydar et al., 2010). Social and emotional intervention programs assist children exhibiting behavioral problems in fulfilling their educational attainment and healthy development, and also in reducing the possibility of other problematic conditions arising (Sayal et al., 2012). In the context of an interdisciplinary approach, studies have found that social-emotional intervention programs provide significant positive gain, encouraging competence and life skills to the benefit of children's mental health and sound condition (Tennant, Goens, Barlow, Day, & Stewart-Brown, 2007; Weare & Nind, 2011; Wells, Barlow, & Stewart-Brown, 2003). Joseph and Strain (2003) conducted a study reviewing eight extensive social and emotional intervention programs designed for children under the age of six, including programs such as "I Can Problem Solve," "Alternative Thinking Strategies," and "First Step to Success," adapted to Turkish children, and found them to be successful in terms of supporting social problem-solving skills and preventing behavioral problems. The programs were reviewed according to the following criteria considered relevant on a scientific basis in terms of reflecting the effective adoption of a program: (i) loyalty of intervention to its origin, (ii) generalizability of intervention, (iii) sustainability of intervention, (iv) social validity of outcomes, (v) acceptability of intervention, (vi) iteration among researchers, (vii) iteration among experimental

groups, (viii) evidence among ethnic groups, and (ix) evidence regarding iteration among environments. Considering the nine criteria, “I Can Problem Solve” met five, “First Step to Success” met seven, “Alternative Thinking Strategies” was found to be promising, and the “Incredible Years (IY) Child Training Program” met eight.

The successful use of IY interventions, developed in the United States (US), in different cultural and economic contexts, and positive evaluations of these interventions by teachers are encouraging (Baker–Henningham, Walker, Powell, & Gardner, 2009). The purposes of IY programs are to develop the child’s play and social skills, support children in using self-control and self-regulation strategies and ready them for school, increase emotional literacy, develop skills in participating in events and maintaining the same, foster harmony with teachers and peers, develop self-esteem and self-confidence, and reduce aggression, disharmony, bullying, and peer rejection (Webster-Stratton & Reid, 2010). In the context of self-efficacy and learning theories, IY uses performance-based education methods, covering video modeling, role playing, and practice—addressing the wide-ranging nature of children—and including stories of families from different cultural and socioeconomic backgrounds, and feedback from the group leader and from other members of the group. The parents, teachers, and children using such programs develop their own skills by watching the videos relevant to key behavioral management and social skills, and modeling their approach based on these (Webster-Stratton & Reid, 2010, 2011). The competence and effectiveness of IY programs have been successfully communicated and implemented also in the United Kingdom (UK), Ireland, Norway, Denmark, Finland, and the Netherlands (Webster-Stratton, Gaspar, & Seabra-Santos, 2012). The IY Parent Training Program has been translated into Spanish, French, Norwegian, Danish, Dutch, Russian, Chinese, Portuguese, and Turkish. The results support the idea that it is possible to develop sufficiently flexible programs to be used with different communities rather than focusing on different interventions developed for each cultural group (Webster-Stratton, 2009).

The IY Child Training Program, developed by Webster-Stratton in 1990 and revised in 2012, is a functional approach in environments in which children may practice the required skills along with their peers, and in which they may obtain the guidance of expert instructors to reduce the children’s behavioral problems and their impulsive behaviors related to attention deficit and hyperactivity, as well as to improve their self-control, self-esteem, and social, emotional, and academic competences. The IY Child Training Program, which is intended to teach rules, emotional literacy, empathy and gaining perspective, social problem solving, anger management, proper school behaviors, friendship skills, and communication skills through its small group format, provides the opportunity for group leaders to engage in more practice events than class education programs, generating personal objectives for the

requirements of each child, and using more intense behavior management strategies for excessive behaviors such as the personalized token technique (Hutchings, Lane, Owen, & Gwyn, 2004; Webster-Stratton, n. d., 2010; Webster-Stratton & Herman, 2010; Webster-Stratton & Reid, 2004, 2008a, 2011; Webster-Stratton et al., 2012; Webster-Stratton, Reid, & Beauchaine, 2013; US Department of Health and Human Services, 2013). It has been found that the IY Program Child and Teacher Training Programs are promising for improving the emotional environments of early childhood education institutions in developing countries, and improving the children's positive social behaviors (Baker–Henningham et al., 2009). Moreover, the IY Parent Training Program has been selected as the most effective program in preventing the external orientation problems of Turkish children (Rafe, 2006).

Regarding the programs adapted for Turkish children to date, it has been shown that the “I Can Problem Solve” program improves the problem-solving skills of children (Dinçer, 1995), the “Alternative Thinking Strategies” program is effective in fostering the social-emotional competences of children and teachers (Arda, 2011), and the “First Step to Success” program yields significant differences in the behavioral problems and social skill scores between experimental and control groups (Diken, Cavkaytar, Batu, Bozkurt, & Kurtyılmaz, 2011). In Turkey, for the determination and treatment of behavioral problems, and to benefit from multi-source and measurement assessments in the evaluation of children in the early period, it has been suggested (a) to undertake the required studies, (b) to evaluate the short- and long-term effectiveness of different intervention programs to be developed/adapted in terms of social problem-solving skills, and (c) to benefit from an integrated early childhood education program in which more than one model is used (Anliak & Dinçer, 2005; Pérez-Escoda, Filella, Alegre, & Bisquerra, 2012; Uyanık Balat, Şimşek, & Akman, 2008).

In this context, it is considered that it is necessary to have effective social and emotional intervention programs in Turkey that may be used to support positive social behaviors in the early childhood period. Studies in the literature indicate that among the social and emotional intervention programs available, the parent, teacher, and child prevention and intervention training programs provided by the IY are particularly effective for children in the early years. However, there is no existing research on the adaptation and application of the IY Child Training Program in the early childhood period in Turkey and thus this research is novel. It is proposed that this research will support children's social and emotional development by providing an effective intervention program for reducing behavioral problems, and improving children's social competences and social problem-solving skills. Thus, in the planning phase of this research, it was considered that the IY Child Training Program—which is deemed in the literature as effective regarding social and emotional intervention—would be able to meet the social and emotional development requirements of children

with behavioral problems. In this direction, it intended to evaluate the effectiveness of the IY Child Training Program in improving children's behavioral problems, and addressing lack of competence in social aspects and deficiencies in social problem-solving skills. In particular, it is estimated that the adaptation and implementation of an effective intervention program for Turkish children will be able to increase their social and emotional learning. The main purpose of this research is to examine the effect of the IY Child Training Program as an intervention for behavioral problems, and fostering social competence and social problem-solving skills.

## Method

### Research Model

The research comprises a true experimental study performed using a pretest-posttest experimental design with experimental and control groups to determine the effects of the IY Child Training Program on the level of behavioral problems of children. The pretest-posttest design is frequently used in behavioral sciences as it provides high statistical power in the testing the effect of independent variables on the dependent variable of interest, allowing the interpretation of findings in terms of cause and effect, and comparison between experimental and control groups (Büyüköztürk, 2011). In this research, the Social Competence and Behavior Evaluation (SCBE) scale and the Child Behavior Assessment (CBA) scale were applied by the teachers, and the Wally Social Problem Solving (WSPS) test was applied by the researcher.

### Participants

Children aged 48–66 months attending an early childhood education institution affiliated with the Ministry of National Education (MoNE) in Ankara constituted the study group. A staged sampling method was used to form the study group. This consists of sampling strategies covering more than one stage depending on the convenience and accessibility of the sampling frame required in different stages (Singh, 2007). In this research, the study group was obtained through operational steps consisting of two stages: (a) convenience sampling and (b) criterion sampling (b), respectively.

a) Permission required to implement the research in independent kindergartens was obtained from MoNE. Contact was made with schools in the province of Ankara and the counties of Etimesgut and Sincan, and the general terms and procedures of the research were explained. As the research comprised a long-term experimental study and thus needed to be performed in a comfortable environment, it was considered that the school in which it was implemented should be one volunteering to take part. Thus, it was decided to perform the experimental study at an independent kindergarten in Sincan County, which was interested in and volunteered for the

research. In this regard, convenience sampling was used to identify the school in which the study would be performed. Convenient sampling is a method in which sampling units are selected based on their convenience and easy accessibility for researchers in clinical practices (Singh, 2007).

- b) Eight classrooms in the selected independent kindergarten were taken as the scope of the study group. To determine the children attending these classes who would be included in the experimental and control groups, the various scales were applied. The results of scales were analyzed and their reliability coefficients examined (CBA = .95, SCBE = .81, WSPS = .79). As the CBA presented the highest reliability coefficient, the children were ascribed to groups based on the CBA pretest scores.

Due to the requirement that the program be carried out with small groups consisting of approximately six individuals according to the principles of implementation (Bywater, Hutchings, Whitaker, Evans, & Parry, 2011), and was planned that each group comprise eight children to take account of the possibility of loss of subjects over the course of the experiment. Bearing in mind the conditions of the kindergarten, and the duration of attendance of children, it was decided to carry out the research with two concurrent experimental groups and control groups, resulting in a total of 32 children aged 48–66 months. The first 32 children meeting the criteria based on their CBA scores were selected for the experimental and control groups. Thus, in this stage of the research, among teleological sampling methods, the group were determined using criterion sampling. Criterion sampling entails forming units with individuals, objects, incidents or conditions having specific qualifications; those meeting the criteria are included in the sample (Büyüköztürk, Çakmak Kılıç, Akgün, Karadeniz, & Demirel, 2009).

In the following step of the research, individuals were randomly assigned to the different groups (Creswell, 2012). The 32 children, attending different classes and attaining the highest scores in the criterion sampling method, were divided through the random draw method into two groups, each consisting of 16 individuals. To determine the equivalence of the groups, differences in the average scores of the children were evaluated using an independent group t-test. Based on the principle that the experimental groups and control groups are required to be equivalent in an experimental study, after observing that there were no differences between the averages of the groups, these groups were again assigned to the experimental and control groups through a random draw method. The kindergarten assigned a classroom equipped with the materials of the EY program as the implementation classroom, and in each session the children in the experimental groups, otherwise attending different classes, attended and participated in the IY Child Training program sessions in this classroom.

The study group participating in pretest consisted of 142 children (50% male, 62% aged 5 years, and 54.2% aged 0–1 years), all undertaking early childhood education. The participants of the experimental and control groups consisted of 32 children (56.3% male, 81.2% aged 5 years, and 59% aged 0–1 years), also in early childhood education.

In terms of the pretest sample, 62% of mothers and 76.1% of fathers were graduates of higher education; 49.5% of mothers were not working and 30.3% of fathers were working in various fields; 92.3% were from elementary (nuclear) families and in 88% of cases the mothers and fathers had care of them. Among the children in the experimental and control groups, 43.8% of mothers and 65.6% of fathers were graduates of higher education; 50% of mothers were not working and 46.9% of fathers were working various fields; 93.7% of them were from elementary (nuclear) families and in 90.6% of cases the mothers and fathers had care of them. Moreover, 50% of the teachers of children included in the pretest study group had been serving in the profession for 6–10 years and 62.5% had been working at the kindergarten for 2–5 years. Among the teachers of children in the experimental and control groups, 50% had been serving in the profession for 6–10 years and that 66.6% had been working at the kindergarten for 2–5 years.

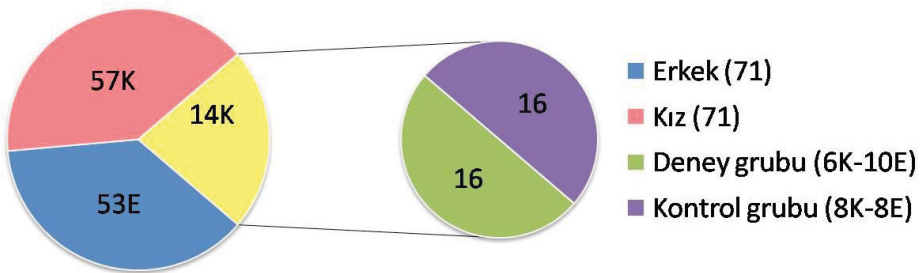


Figure 1. Gender of participants in the pretest and experimental groups.

### Content and Application of the Independent Variable

The IY Child Training Program consists of seven units: (i) making new friends and learning the school rules, (ii) being successful at school (listening, cooperating), (iii) understanding and recognizing emotions, (iv) learning the steps of problem solving 1 (defining the problem and solutions, finding more solutions, thinking about the results), (v) learning the steps of problem solving 2 (anger management and problem solving), (vi) learning to become friends (helping each other, sharing, team work at home and at school), (vii) and learning to talk with friends (talking, listening, requesting). Examples regarding the content of each unit are provided in Table 1. Each unit is built on the previous unit and skills. For this reason, it is important not

to skip the units and to complete them in order. However, the group leader is able to make relevant changes based on the requirements of the children within the group in accordance with children's development.

To personalize the program suggestions, dummies are used. Initially this entails performing talk using dolls together with the child regarding her/his emotions about the problem at hand, asking the child to think about possible solutions, and then suggesting effective means of cope with the situation (Webster-Stratton & Reid, 2008b). Dolls named "Wally" and "Molly" (the size of a four-year-old child) are employed to play the role of the child in speaking about their emotions and problems, and discussing what the optimal solutions might be. Negative emotions are viewed as clues to a problem that needs to be solved. The children learn to gain enriched ways of describing their emotions. Dino is the head teacher of Dinosaur School, and he makes visits to follow up on progress and bring courage.

In the program, videos are shown of children and dolls modeling the processes of solving problems that the children may frequently encounter at home and at school. The videos direct them to discuss effective strategies, and the children then implement the problem-solving skills. The principles of problem solving are reinforced through home events. Throughout the program, the positive social behaviors of children are strengthened through awards and reinforcements. Behavioral problems are diminished by ignoring the behavior, or by removing the reinforcements for good behavior, for example through the technique of having a break (Hutchings et al., 2004).

To realize the purposes of the research, the IY Child Training Program was adapted to the Turkish culture, bearing in mind the objectives identified following the literature review and expert opinions. Before the implementation of the program and prior to the WSPS test, completed with the children on a face-to-face basis, the children were engaged in small play sessions and conversations to gain their trust and to obtain robust results. The adapted program and the 2013 Pre-School Education Program of the MoNE were then applied by the researcher with the children in the experimental groups on the basis of 18 sessions, lasting 2 hours on 2 days per week. Before each session, the materials required for the content of the sessions were put in place prior to the attendance of the children, and the learning process was prepared with regard to the purpose determined for the session. The content of the learning process consisted of greeting and a brief reminder of the previous session (around 10 minutes), playing accompanied by the group leader (10–15 minutes), initial circle time (20 minutes), the initial event (10 minutes), second circle time (20 minutes), a second event (10–15 minutes), playing accompanied by the group leader (10–15 minutes), counting the tokens and award exchange with tokens (5 minutes), and closing the circle time with praise and talking to the families/teachers (10 minutes).



Table 1  
*Examples of Content in the IY Child Training Program*

	Name of Unit	Content of Unit
1	Dinosaur Curved Neck Unit: Making Friends and Learning the School Rules	Participation in the rule formation process
2	Horned Dinosaur Unit: Recognizing and Understanding Emotions	Learning how someone is feeling based on verbal and non-verbal expressions
3	Dinosaur Small Tail Unit: Detective Wally is Teaching Problem-Solving Steps	Learning the importance of cooperating with the teacher and with other children
4	Thorny Dinosaur Unit: Anger Management	Learning how to limit impulsive reactions
5	King Dinosaur Unit: Dino is Teaching How to be Successful at School	Understanding the story of the small turtle about anger management and asking for help
6	Toothed Dinosaur Unit: Molly is Teaching How to Become Friends	Understanding the benefits of sharing, assisting, and teamwork
7	Tall Dinosaur Unit: Molly is Teaching How to Speak with Friends	Understanding when and how to apologize and compliment

### Data Collection Tools

To collect the data, a personal information form, the SCBE scale, the CBA scale, and the WSPS test were used in this research; the SCBE and WSPS tests are presented as required measurement tools to evaluate the IY Child Training Program (*The Incredible Years, n. d.*).

**Personal information form.** The personal information form, developed by the researchers, asked for the name, gender, and age of the child, the educational background and field of work of the child’s mother and father, family structure, order of birth, number of siblings, whether anyone was taking care of the child except the mother and father. This aimed to determine the demographic attributes of the child. In addition, it sought information on the teacher’s general professional period of service and period of service in the kindergarten.

**Social Competence and Behavior Evaluation Scale.** The SCBE scale, developed by LaFreniere and Dumas (1996) to be completed by teachers, provides brief scores on certain aspects (social competence, internal orientation problems, and external orientation problems), balanced for positive and negative items. The SCBE scale, which covers an extensive list of behaviors commonly observed in early childhood educational environments, has a good internal consistency in terms of the Cronbach’s alpha coefficient, varying between .80 and .89 (Webster-Stratton, Reid, & Hammond, 2001a). This instrument comprises 80 items measured on a six-point Likert-type scale. The Turkish adaptation, undertaken by Uysal and Akman, has been subjected to validity and reliability testing. The Cronbach’s alpha coefficient was .81 for application of the SCBE pretest in this study, .70 for the application of the posttest, and .82 for the result of the permanence test (Uysal, 2016). The SCBE summarizes items covering eight positive attributes (cheerful, confident, patient, integrated, calm, prosocial, autonomous, cooperative), and four negative attributes (angry, aggressive, selfish, resistant).

**Child Behavior Assessment Scale.** The CBA scale, developed by Sübaşı and Şehirli (2010) for completion by teachers, comprises 73 items related to 3 dimensions (rebellious behaviors, harmony and social anxiety), measured on a 5-point Likert-type scale. For the CBA, scores provided for the items are summed. As 21 items of the scale are phrased positively, they are reverse scored. The highest score that may be obtained on the CBA is 365 and the lowest is 73. Cronbach's alpha coefficient, applied to determine reliability, was found to be .95 for the whole scale. The reliability coefficients for the sub-dimensions of rebellious behaviors, harmony, and social anxiety were determined as .96, .93, and .88, respectively. In the application of the CBA pretest administered to the study group included in this research, Cronbach's alpha was found to .95 for the whole scale, and .91 for the sub-dimension of rebellious behaviors, .94 for the sub-dimension of harmony, and .87 for the sub-dimension of social anxiety. The Cronbach's alpha was .92 for the whole scale in the posttest application and .86 for the permanence test.

**The Wally Social Problem-Solving Test.** The WSPS test was compiled by Webster-Stratton within the scope of IY projects by combining the Preschool Problem-Solving Test of Spivak-Shure and the Child Social Problem-Solving Test of Rubin-Krasnor. In the test, 15 color pictures—distinct for female and male children, and covering 11 categories—are shown to the children by the researcher. They are asked what they would do in the given situation. The social behavior recounted by the child is rated as positive or negative, with 1 point given for each positive social behavior, and zero for each negative social behavior (Yılmaz, 2012). As a result of adaptation to the Turkish context, validity and reliability tests were performed by Yılmaz (2012). The KR-20 reliability coefficient was found to be .79, and the test-retest correlation coefficient was .95. In terms of the application of the WSPS pretest among the study group included in this research, the KR-20 reliability coefficient was .79. In addition the KR-20 reliability coefficient was .81 in the WSPS posttest application, and .80 for the permanence test.

## Procedure

The data for this research were collected following approval from the Ethics Commission of Hacettepe University's Senate. In this section, the phases followed during the collection of research data are detailed. Correspondence was undertaken to attain permission for the adaptation of the IY Intervention Child Training Program for use in Turkish. As a result of participation in workshops led by Dr. Reid in the US, the certificates required for implementation were obtained.

In the initial phase of adaption of the seven units comprising the IY Child Training Program, 12 independent translators, specialized in English language, undertook the translation. The content of the IY Child Training Program was re-arranged in the light

of the opinions of 10 field experts in psychology and in social services, together with 10 field experts in early childhood education and child development; great care was taken to adhere to the main dimensions and the program as a whole. Within the scope of this adaptation, a football game was used instead of the baseball game frequently referred to in the program, English names for boys and girls were replaced with Turkish names, and the dinosaurs included in the units were renamed based on the votes of children in the study group.

Moreover, the content of three DVD videos in the IY Child Training Program lasting 254 minutes was transcribed and translated into Turkish, the texts were put in order, and the characters were determined. For the dubbing operation, doctorate students engaged in preschool teaching were matched with roles suiting the timbre of the characters, and dubbing texts were provided to them after discussion of their roles. The dubbing operation was completed, adhering to the text and content. The sound recordings were integrated with the videos using the Corel VideoStudio Pro X7 program (<http://www.videostudiopro.com/en/products/videostudio/ultimate/>). When the eventual recording was produced, the intervention program was reviewed by the researcher, and the final form of the IY Child Training Program, encompassing the cultural characteristics of Turkish children, was developed following the amendments required based on the guidance of a consultant.

The appropriate use of the SCBE in Turkey was determined, and its validity and reliability for application in the study were established. The necessary permits were obtained to use the CBA and WSPS tests, and to increase the researcher's familiarity with applying the WSPS test, the test was applied with five children.

Prior to the implementation of the IY Child Training Program, the CBA, SCBE, and WSPS tests were applied as pretests to determine the experimental groups and control groups, and to measure the effectiveness of the program. The groups were formed paying attention to the equivalence of differences between the average scores on the CBA among the children in the experimental groups and in the control groups. The videos, materials, and games to be used in each session, as well as home events and events in the sessions were determined according to the characteristics of the experimental groups.

Within the scope of the adapted IY Child Training Program, 18 sessions were undertaken with children in the experimental group. The application of the 2013 Preschool Education Program of the MoNE was also maintained. No measures other than those in the 2013 Preschool Education Program were applied with the control group. In the application of the IY Child Training Program, letters were sent to the families of children in the experimental groups and to the teachers. Moreover, at the end of each session, home events (required to be performed at home with the support

of their families prior to the next session) were sent; at the beginning of each session, home events relevant to the previous session were collected, along with the feedback of the children, and evaluated.

At the end of the IY Child Training Program intervention, the CBA, SCBE, and WSPS were applied as posttests to the experimental groups and control groups in order to determine whether the intervention program of 18 sessions had resulted in differences between the groups. To evaluate the permanence of the effect of the intervention on children in the experimental group, and to reveal more concretely the effect of the intervention on behavioral problems, social competence, and social problem-solving skills, the CBA, SCBE and WSPS were applied with the children in the experimental and control groups four weeks after the application of the posttest.

### **Data Analysis**

The data obtained were analyzed using Cliff's Delta Calculator (<http://iipus.webs.com/>), NCSS PASS 13 software (<http://www.ncss.com/software/pass/>), and SPSS version 11.5 (SPSS Inc., 2002). To determine whether the scores obtained for continuous variables showed normal distribution or not, kurtosis and skewness coefficients, Q-Q plot, histogram graphs, and Shapiro–Wilks test results were examined. Based on the results of the Shapiro–Wilks test, it was determined that the scores were not normally distributed. Moreover, the statistics for kurtosis and skewness showed that the coefficients were not in an acceptable range. When the Q-Q plot and histogram graphs were examined, it was observed that the curves did not show a symmetrical distribution. Thus, parametric tests could not be applied to the data and non-parametric tests were used for the analysis.

The Friedman test was applied to measure whether the differences between the averages of the pretest, posttest, and permanence test scores for the experimental groups and the control groups were significant or not. In the case of a significant difference, the Wilcoxon signed rank test was used to determine which measures were responsible for the difference. For iterative measures, the equivalent of analysis of variance (ANOVA) in non-parametric terms is the Friedman test (Singh, 2007). The significance of differences between the scores of two related measurement sets is tested using the Wilcoxon signed rank test. This is used instead of a dependent t-test when the scores are not normally distributed in within-group studies carried out with a few subjects (Büyükoztürk, 2008).

To establish whether there was a significant difference between the pretest, posttest, and permanence scores for the experimental groups and the control groups, the Mann–Whitney U test was applied. This tests whether the scores obtained from two independent samples exhibit significant differences from each other or not. When

scores do not meet the normality premise in experimental studies with a few subjects, it is an alternative for the independent t-test (Büyüköztürk, 2008).

To analyze the scores that the experimental and control groups attained on the SCBE and CBA scales and the WSPS test in the pretest, posttest, and permanence test measurements, the Friedman test and Wilcoxon signed rank test—non-parametric statistical techniques—were used. Moreover, Bonferroni correction was applied to the comparison test. Bonferroni correction is a statistical correction used in multiple comparison tests and prevents type 1 error (Rubin & Babbie, 2011). The calculations for these techniques were performed in SPSS version 11.5. For this research, the significance level was determined as  $.05/3 = .017$  with the Bonferroni correction. Thus, the significance level for the Mann–Whitney U test, employed to test differences following the analysis of the Friedman test and Wilcoxon signed rank test scores, was taken as  $p = .017$ .

To determine the effectiveness of the program— this being the independent variable—the size of the effect was examined. In non-parametric measurements, Cliff’s delta statistic is used as the effect size tool, indicating the degree to which the independent variable exerts an effect on the dependent variable (Büyüköztürk, 2008; Macbeth, Razumiejczyk, & Ledesma, 2011). Cliff’s delta can take a value between -1 and +1; a value approaching +1 indicates that group 1 is larger than group 2 (pretest > posttest), a value approaching -1 indicates that group 2 is larger than group 1 (pretest < posttest), and a zero value indicates that there is no effect (pretest = posttest), i.e., there is no difference between the groups in the experimental study (Macbeth et al., 2011). To determine the Cliff’s delta value, Cliff’s Delta Calculator—a program designed to calculate this value—was used.

The iterative application of the scales—pretest, posttest, and permanence test—with the experimental and control groups was the criterion for determining the reliability of the measurement tools based on test-retest method. With regard to permanence, in educational studies the scores of permanence tests performed after about one–three months are deemed sufficient evidence (Büyüköztürk, 2008; Fraenkel & Wallen, 2006). To observe the permanence of the application in this research, the various tools were applied again four weeks after the experiment.

## Results

This section presents the results of the analysis.

### **Descriptive Statistics for the CBA, SCBE, and WSPS Scores of the Children**

The descriptive statistics for the CBA, SCBE, and WSPS scores of the children are provided in Table 2.

Table 2  
*Descriptive Statistics for the CBA, SCBE, and WSPS Scores of the Children*

		n	Minimum	Maximum	Median	Mean
CBA pretest		16	118.94	246.91	148.50	152.94
CBA posttest	Experimental	16	95.00	196.00	147.93	140.81
CBA permanence		16	89.76	206.50	111.75	127.43
CBA pretest		16	86.00	202.00	128.23	134.49
CBA posttest	Control	16	95.00	191.19	114.51	122.08
CBA permanence		16	85.76	171.00	117.75	122.18
CBA pretest		16	243.00	349.94	267.22	271.94
CBA posttest	Experimental	16	216.27	307.00	272.73	276.17
CBA permanence		16	196.00	328.54	276.42	275.70
SCBE pretest		16	123.00	351.67	269.50	266.45
SCBE posttest	Control	16	240.00	305.45	263.96	269.01
SCBE permanence		16	220.00	313.00	262.00	267.15
WSPS pretest		16	1.00	14.00	7.00	7.37
WSPS posttest	Experimental	16	12.00	15.00	13.00	13.25
WSPS permanence		16	12.00	15.00	14.00	14.00
WSPS pretest		16	2.00	14.00	10.00	10.50
WSPS posttest	Control	16	7.00	14.00	11.00	11.18
WSPS permanence		16	6.00	14.00	10.00	10.25

Considering the values shown in Table 2, the high averages for skills measured by the SCBE and WSPS may be interpreted as an increase in the relevant skills of children in the experimental groups due to the application of the intervention program, whereas the low averages for skills measured by the CBA may be interpreted as a decrease in the relevant aspects of children due to the application of the intervention program.

### Effects of the IY Child Training Program on the CBA, SCBE, and WSPS Scores of the Children

The results of the Friedman test, which examined whether there were significant differences in the behavioral problems, social competence, and social problem-solving skills of children or not before and after the application are provided in Table 3.

Table 3  
*Results of the Friedman test on the Experimental Groups' Scores Obtained from the Pretest, Posttest, and Permanence Test*

		n	mean of rank	X <sup>2</sup>	p
CBA	Pretest	16	1.63	3.875	.144
	Posttest	16	2.06		
	Permanence	16	2.31		
SCBE	Pretest	16	1.94	1.625	.444
	Posttest	16	1.81		
	Permanence	16	2.25		
WSPS	Pretest	16	1.00	29.789	.001
	Posttest	16	2.22		
	Permanence	16	2.78		

Based on the results of the Friedman test provided in Table 3, there are no significant differences between the averages of the scores obtained for the CBA and SCBE pretest, posttest, and permanence measurements ( $p_{\text{cdd}} > .144$ ;  $p_{\text{sydd}} > .444$ ). However, a significant difference is found between the averages of scores obtained for the WSPS pretest, posttest, and permanence measurements ( $p < .001$ ). Based on these results, to examine for which measurement the difference was significant, the Wilcoxon signed rank test was applied to the experimental groups' WSPS pretest, posttest, and permanence test results (Table 4). First, analysis was conducted to establish whether there was a significant difference between the WSPS total scores for the pretest and posttest. Then, the test was applied to evaluate whether there was a significant difference between the WSPS total scores for the pretest and permanence test and posttest and permanence test.

Table 4  
*Results of the Wilcoxon Signed Rank Test on Experimental Groups' of Scores Obtained From the WSPS Test*

		n	mean of rank	sum of rank	z	p
WSPS posttest–WSPS pretest	Negative rank	6	10.92	65.50	3.44*	.001
	Positive rank	24	16.65	399.50		
	Equal	12				
WSPS permanence–WSPS pretest	Negative rank	8	14.00	112.00	2.67*	.008
	Positive rank	23	16.70	384.00		
	Equal	1				
WSPS permanence–WSPS posttest	Negative rank	8	14.00	112.00	.26	.790
	Positive rank	12	8.17	98.00		
	Equal	12				

Based on the values in Table 4, which examined the WSPS scores of the children participating in the intervention before and after the application, a significant difference is found between the pretest–posttest ( $z = 3.44$ ,  $p < .017$ ) and pretest–permanence test ( $z = 2.67$ ,  $p < .017$ ). Considering the mean rank and sums of difference scores, it is found that the observed difference is in the positive rank (in favor of the posttest–permanence test). According to these results, it can be said that the IY Child Training Program had a very significant effect in improving the social problem-solving skills of the children. Moreover, it is determined that there is no significant difference between the posttest–permanence test ( $z = .26$ ,  $p > .017$ ). This finding indicates that the effects of the IY Child Training Program continued after the intervention. Thus, not only did the social problem-solving levels of the children participating in the intervention increase over the duration of the IY Child Training Program, they continued to do so in the permanence phase.

When the results for the effect sizes of children’s CBA, SCBE, and WSPS scores on the pretest, posttest, and permanence test, measured using Cliff’s delta statistic, and the results for the statistical strength of children’s scores based on strength analysis are examined, the Cliff’s delta value was -.54 for WSPS between the pretest–posttest, and -.52 for WSPS between the pretest–permanence test. The WSPS posttest confidence interval was .05, level of error .07, and observed strength .93; the permanence test confidence interval was .04, level of error .05, and observed strength .95. When these values are considered, while there is an effect in favor of the pretests for behavioral problems, the effect in terms of social competence skills and social problem-solving skills is in favor of the posttests and permanence tests. In terms of effect size, a significant effect is observed for social problem-solving skills. In conclusion, it can be said that the children’s behavioral problems, social competence, and social problem-solving skills showed an effect in a negative direction, an effect arising from the fact that behavioral problems are negative social behaviors, unlike the other two social skills.

**Examination of CBA, SCBE, and WSPS Scores for Children in the Experimental and Control Groups**

The Mann–Whitney U test results obtained for the scores of the pretests, posttest, and permanence tests for the children observed to have deficiencies in social competence and social problem-solving skills, and behavioral problems who did and did not participate in the IY Child Training Program are provided in Table 5.

Table 5  
*Mann–Whitney U Test Results for Scores Obtained from the CBA and SCBE Scales, and from the WSPS Test as Per Experimental and Control Groups*

	Group	n	mean of rank	sum of rank	U	p
CBA pretest	Experimental	16	16.88	270.00	122.000	.821
	Control	16	16.13	258.00		
CBA posttest	Experimental	16	12.91	206.50	70.500	.030
	Control	16	20.09	321.50		
CBA permanence	Experimental	16	15.91	254.50	118.500	.720
	Control	16	17.09	273.50		
SCBE pretest	Experimental	16	18.44	295.00	97.000	.243
	Control	16	14.56	233.00		
SCBE posttest	Experimental	16	18.59	297.50	94.500	.207
	Control	16	14.41	230.50		
SCBE permanence	Experimental	16	18.19	291.00	101.000	.309
	Control	16	14.81	237.00		
WSPS pretest	Experimental	16	12.56	201.00	65.000	.017
	Control	16	20.44	327.00		
WSPS posttest	Experimental	16	21.84	349.50	42.500	.001
	Control	16	11.16	178.50		
WSPS permanence	Experimental	16	23.25	372.00	20.000	.000
	Control	16	9.75	156.00		



In terms of the values shown in Table 5, it is apparent that there is no significant difference between the behavioral problems exhibited by the children included in experimental groups and control groups as determined before the study ( $U = 122.000$ ,  $p > .05$ ). Examining the mean ranks, the scores for behavioral problems in the control groups and experimental groups are nearly the same. After the experimental study, consisting of 18 sessions, a significant difference is found between the scores for behavioral problems among children who had and had not participated in the IY Child Training Program ( $U = 70.500$ ,  $p < .05$ ). When the mean ranks are considered, it can be observed that the scores for behavioral problems among children not participating in the program are higher compared to those of children participating in the program.

No significant difference is found between the social competence skills of children selected for the experimental groups and control groups before the application ( $U = 97.000$ ,  $p > .05$ ). However, when the mean ranks are considered, it is apparent that the scores for the social competence skills of children included in the experimental groups are higher than those of children in the control groups. After the experimental application, consisting of 18 sessions, again no significant difference is found between the scores for social competence skills of children who had and had not participated in the IY Child Training Program ( $U = 94.500$ ,  $p > .05$ ). However, when the mean ranks are considered, it can be observed that the scores for social competence skills among the children participating in the program are higher compared to those of children not participating in the program.

In terms of the social problem-solving skills of children included in the experimental and control groups, there is a significant difference in scores determined before the study ( $U = 65.000$ ,  $p < .05$ ). When the mean ranks are examined, the scores for social problem-solving among children in the control groups are higher compared to those of the children in the experimental groups. After the experimental study, consisting of 18 sessions, a significant difference is found between the scores for social problem-solving among children who had and had not participated in the IY Child Training Program ( $U = 42.500$ ,  $p < .05$ ). When the mean ranks are considered, it is apparent that the scores of children participating in the program are higher compared to those of children not participating in the program.

When the permanence measurements—performed four weeks after the experimental application—are examined, no significant difference is found between the scores for the experimental groups participating in this program and the scores for the control groups ( $U = 118.500$ ,  $p > .05$ ). However, when the mean ranks are considered, it is apparent that the scores for behavioral problems among children not participating in the program are higher compared to those of children participating in the program. These findings indicate that the IY Child Training Program is effective

in decreasing the behavioral problems of children, but it cannot be deemed to have a long-lasting effect. Concerning social competence skills, no significant difference is found between the scores for the experimental groups participating in the program and the scores for the control groups ( $U = 101.000, p > .05$ ). However, when the mean ranks are considered, it is apparent that the scores for social competence skills among the children participating in the program are higher compared to those of children not participating in the program. These findings indicate that the IY Child Training Program is not effective in increasing the social competence skills of children or sustaining an increase in skills. For social problem-solving skills, a significant difference is found between the scores for the experimental groups participating in the program and the scores for the control groups ( $U = 20.000, p < .05$ ). When the mean ranks are considered, it is apparent that the social problem-solving skills of the children participating in the program are higher compared to those of children not participating in the program. These findings indicate that the IY Child Training Program is effective in increasing the social problem-solving skills of children, and that this effect is sustained.

### Discussion

Following the experimental study of the effect of the IY Child Training Program, covering 18 sessions, significant differences were determined between the scores for behavioral problems and social problem-solving skills among children who had and had not participated in the program. When the permanence measurements were examined, it was observed that not did the social problem-solving levels of children participating in this program increase during the program, but the effects continued in the permanence phase.

In studies examining the IY Programs, it has been demonstrated that the parent, teacher, and child training measures are effective in decreasing the behavioral problems of the children in experimental groups (Webster-Stratton, 2004). It has been observed that the behavioral problems of children attending the classes of teachers included in teacher training decrease by the end of the program. It has also been found that the internal orientation problems of the children of parents participating in parent training decrease (Herman, Borden, Reinke, & Webster-Stratton, 2011); moreover, a study of children in an experimental group consisting of Turkish parents found that they exhibited fewer behavioral problems (Coşkun, 2008). A significant decrease was found to occur in the aggressive behaviors—both at home and at school—of children in an experimental group participating in parent and teacher training (Webster-Stratton et al., 2001a) and participating in parent, child, and teacher training (Webster-Stratton & Reid, 2010); they showed fewer behavioral problems at school and the effects were maintained for a year. Following the application of child training (Hutchings, Williams,

& Pritchard, 2011) among group frequently exhibiting behavioral problems, decreases in behavioral problems, especially in male children, were identified. Considering that behavioral problems may well become established in children by the end of the early childhood period, and that difficulty will be experienced in changing these afterwards, the application of intervention programs with children in the early childhood period increases the effect of such programs (Coşkun, 2008).

The findings obtained from studies interested in the effects of IY Programs on the behavioral problems of children tally with the descriptive statistics of this research. The IY Child Training Program has a positive effect on reducing behavioral problems. While it is not possible to claim that this program has a long-term effect on the behavioral problems of Turkish children, the findings show that the effect is maintained to a limited extent, and the permanence of the effect is also supported by other research. It may be that adults who become acquainted with what to do and what not to do in addressing behavioral problems through the letters sent to families and teachers within the scope of this program will be able to make the behavioral and emotional regulation acquired by the children permanent as a result of their support both at home and at school. Indeed, the lack of a significant difference in terms of permanence may be due to a lack of continuity of adults’ support. This program, which is based on social cognitive theory, adopts the perspective that learning will be attained through taking someone as model. In this respect, lack of presentation of the practices relevant to the program by teachers and families in the natural environment of the child may have caused inconsistencies among those the child would take as model, and this may have caused the inability to ensure the permanence of behaviors. In this context, lack of concurrent application of teacher and parent training alongside child training, addressing the program in a holistic manner, may also be a cause of the inability to maintain the program’s effects on skills.

Considering the long-term negative results of difficulty with emotion regulation and deficiencies in social skills, it is very important to those children who are at risk in an early period of development, and to direct them to early intervention programs (Çorapçı, Aksan, Arslan-Yalçın, & Yağmurlu, 2010). It has been demonstrated that the application of the IY Programs for parents, teachers, and children is effective in terms of fostering positive interactions between the parent and teacher and the child, and exerting a positive effect on the social competence of the child (Webster-Stratton, 2004). Moreover, the IY Child Training Program is effective in terms of improving children’s skills in establishing positive relations with peers (Bywater et al., 2011), and there are significant improvements in the social competence of children participating in the IY Programs providing parent and teacher training (Webster-Stratton et al., 2001a). The findings of research revealing the positive effects of IY Programs on children and reduction in undesired behaviors are similar to those of this research. Behavioral

problems and deficiencies in skills that arise in the early childhood period, and become permanent problems in the following years without intervention also constitute problems for Turkish children. In this context, operational intervention programs for children in the early childhood period are crucial. In Turkey, lack of an intervention program applied as a national education policy results in the problem of multiple intervention programs—the validity and reliability of which need to be tested—only for a specific segment, and the results are thus limited to that segment. However, teachers could be trained in appropriate skills through the application of an intervention program implemented through national education policy as part of education programs; moreover, measures that could be implemented synchronously at home could be shared with the family. Crucially, the application of the IY Child Training Program could be made widespread by enabling uniform application in schools.

The IY Child Training Program was not found to have a positive or long-term effect in increasing the social competences of Turkish children in this study. The reason for this may be that many teachers attach importance to academic competences rather than social competences, and they have some difficulties in determining the social status and competence levels of children in their classes as they do not generally interact with the children during free play (Lau, 1997). In this vein, it is considered that the lack of a significant difference in the social competence levels of participants in the experimental group may be due to the possibility that they bear the referred variable characteristics. In-service training regarding behavioral problems, problem solving, and social competence skills may be prepared and presented to the teachers, and workshops may be organized for the teachers to become skillful in applying the IY Child Training Program. The teachers should also improve their own social competence and social problem-solving skills. For this, they may improve their practices by participating in various workshops on this subject.

It has been determined that early childhood education programs—implemented in institutions that are enriching their educational programs through different educational approaches—are more effective at enhancing social problem-solving skills and alternative solution thinking skills of children aged 5 years (Anliak & Dinçer, 2005; Dinçer, 1995). It has been observed that the IY Child Training Program is effective in improving children's friendship and social problem-solving skills (Baker-Henningham, Scott, Jones, & Walker, 2012; Bywater et al., 2011; Hutchings et al., 2012). The findings obtained from studies examining the effect of IY Programs on the social problem-solving skills of children tally with those of this research, namely that IY Child Training Program has a positive effect on children's social problem-solving skills. Moreover, this effect was observed to be sustained among the Turkish children in this study.

This research suggests that the IY Program is very promising for Turkish children in terms of the effect on and permanence of social problem-solving skills. Moreover, the suggestion made in the study by Hyland, Mháille, Lodge, and McGilloway (2014) that classroom management strategies be sought to support the social and emotional wellness of children at school, and minimize behavioral problems has been realized by this research through the application of the IY Child Training Program adapted for Turkish children. In addition, it is considered that programs featuring such strategies can be used effectively by practitioners. This research was carried out at an independent kindergarten in the province of Ankara to determine the effect of the IY Child Training Program on behavior, social competence, and social problem-solving skills. Future research may be undertaken using more extensive samples, and at various school types located in regions of different socio-economic levels. Moreover, consensus on the validity of the results could be achieved by measuring the effect of the program on children’s skills through different measurement tools, and the results of the research may be strengthened by employing diverse techniques, such as undertaking regular observations in the classroom, in addition to using existing measurement tools. By examining best practice in the world regarding prevention and intervention programs aimed at improving the social competence of children, studies could be performed with a view to improving the culturally specific application of programs.

It has been revealed that the destructive behaviors of children subjected to interventions—applied with children showing high levels of behavioral problems in the early childhood period—decrease (Williford & Shelton, 2008). As the result of intervention, children can understand that their peers may be upset by their aggressive behaviors, and that their aggressive behaviors will give rise to negative social behaviors (Mahoney, 2010). A study that examined the IY Programs determined that significant decreases occurred in the total intensity of behavioral problems of Norwegian children as a result of parent and child training (Mørch et al., 2004); in addition, significant decreases occur in behavioral problems as a result of the IY Child Training Program. Processes such as those in the IY Prevention Program are needed to identify children requiring a more intense program, such as the IY Child Training Program (Hutchings et al., 2004). Among studies examining the results of the IY Child Training Program, it has been found that the majority of children aged 4–7 with resistance disorder reacted positively to the intervention (Reid, Webster-Stratton & Hammond, 2003), it decreased behavioral problems (Webster-Stratton, Reid, & Hammond, 2001b), external orientation problems and resistance disorders (Webster-Stratton, Reid, & Beauchaine, 2011; Webster-Stratton et al., 2013) of children both at home and at school, and that it decreased the social, emotional, and behavioral problems of Welsh children (Bywater et al., 2011). When the permanence of the effects of the IY Program is examined, it can be observed that the effects of

intervention on the behavioral problems of children show permanence as a result of parent training (Posthumus, Raaijmakers, Maassen, Van Engeland, & Matthys, 2012); indeed, that the attainments of Welsh and British children continued for at least 12 months (Jones, Daley, Hutchings, Bywater, & Eames, 2008). However, the findings obtained from these studies indicating that the IY Programs reduce the behavioral problems of children are not reflected in this research.

Research evaluating the IY Program has found a greater change in the opinions of fathers participating in parent and child training regarding the social competence of the child than the mothers (Drugli, Larsson, & Clifford, 2007). Significant increases have been found in the social competence levels of Portuguese (Homem, Gaspar, Seabra-Santos, Canavarro, & Azevedo, 2014) and Norwegian children (Mørch et al., 2004). Teacher training has shown benefits for social and emotional competence, school readiness (Baker–Henningham & Walker, 2009), and social competence (Baker–Henningham et al., 2009) among Jamaican children in the early childhood period. Moreover, child training has been found to result in positive changes in conflict management strategies, social skills and suitable playing skills, social competence, emotion regulation (Webster-Stratton et al., 2001b, 2011, 2013), and in academic success and the school attendance of Welsh children (Bywater et al., 2011). However, the findings obtained from studies asserting an increase in the social competence levels of children after participation in the IY Program do not tally with the findings of this research, namely that there is no significant difference as a result of participation in the IY Child Training Program.

Teachers applying the IY Child Training Program may wish to apply the program especially in autumn, alongside family education, to obtain more effective results from the intervention program. Moreover, a pool of measures supporting those used in the application of the IY Child Training Program may be formed, and teachers may also improve their implementation of intervention events by evaluating those they use. Research could be advanced through the concurrent application of the IY Child Training Program and the IY Prevention Program, as well as the adoption of the IY Parent Training Program, and the results may be compared. The three IY Programs—aimed at children, parents, and teachers—could be used in the same research, and the results examined.

This study found no positive effect of the IY Child Training Program on the social competences of Turkish children. The reason for this may be the fact that parents and school personnel, including teachers, focus on children’s behavioral problems rather than social competence levels when interacting with them. Thus, they may strengthen their theoretical and application frames related to the behavioral problems arising and solutions, and the children’s social competence levels—covering positive social behaviors—remain in the background. A further reason may be that at the end of the

intervention program, the children are return to their classrooms and continue with their normal programs, which do not cover the same strategies, and that the families and teachers do not consistently maintain their support related to the intervention applications, either at home or at school. Moreover, despite the effectiveness of the program based on scientific evidence, it may be that many differences in group characteristics, culture, and application conditions between US and Turkish children explain the lack of positive attributes in terms of the effectiveness of the program on the social competence levels of the children. Teachers may provide positive support for the skills of children by using children’s picture books, videos, and role-playing games covering examples of positive social behaviors, social competences, and social problem solving, rather than non-social behaviors.

The IY Child Training Program was developed for children being raised in American culture. There are many basic differences between the Turkish groups in this research and the American children for whom the program was designed in terms of behavioral problems and familial characteristics. One key differences between the children living in the two countries is the fact that while many children in the US benefit from early childhood education, only a minority of Turkish children of the same age group have such an opportunity. Considering that children engaged in early childhood education have more cognitive stimulation, and more social experience with those around them, it can be suggested that there are cultural differences in terms of the positive/negative social behaviors of Turkish children, as well as the knowledge of adults concerning behavioral management, and thus that the program has been found to ineffective in terms of social competence. By undertaking longitudinal studies, children included in an experimental group in the early childhood period could also be monitored in the primary education period. In addition, intercultural research could be performed, comparing the results of this research with the results of overseas applications of the IY Child Training Program, and the socio-cultural causes of the results could be discussed.

A positive effect of the IY Child Training Program on social problem-solving skills has been found and this is maintained among Turkish children in the experimental groups. This result may suggest that these children experienced their previous behavioral problems due to deficiencies in their social problem-solving skills, and that this program caused a decrease in behavioral problems through the effective enhancement of social problem-solving skills, enabling the children to perform behavioral management. This proposition is supported by the opinion of Rafe (2006), who states when dealing with behavioral problems, simply increasing the social problem-solving skills of the child will often be sufficient.

A study of Romanian children participating in interventions to develop their social and emotional competence found them to be more successful in social problem

solving (Ştefan & Miclea, 2013). Studies examining the IY Child Training Program have also observed improvements in the social problem-solving skills of children among whom the program is applied (Webster-Stratton et al., 2001b, 2011, 2013). In addition to these studies, it has been observed that the social problem-solving skills of Welsh children (Bywater et al., 2011) and Norwegian children (Mørch et al., 2004) with severe behavioral problems developed significantly. Thus, the findings of other studies concerning the social problem-solving skills of children and of this research are congruent.

In many studies related to IY Programs, effect sizes have been calculated. In research considering the effect of the IY Program on behavioral problems of children at school, effect sizes were found to be in the small range by Webster-Stratton and Reid (2010), medium range by Herman et al. (2011), Fergusson, Horwood, and Stanley (2013), and Baker-Henningham et al. (2012), and large range by Coşkun (2008). The effect size for behavioral problems at home was found to be in the medium range by Webster-Stratton and Reid (2010). In terms of social competence, effect sizes were found to be in the medium range by Webster-Stratton and Reid (2010) and Coşkun (2008); in terms of social skills, effect sizes were found to be in the medium range by Baker-Henningham et al. (2012); in terms of school readiness and harmony, effect sizes were found to be in the large range by Webster-Stratton and Reid (2010). Thus, the majority of the effect sizes found in prior research are in line with the results of this study.

The effectiveness of the IY Child Training Program may further be evaluated by increasing the application period of the intervention, or by postponing the permanence test to a later period. In addition, besides considering how the application period might affect the results of the program, variables such as the educational level, working status, and marital status of parents, and previous diagnosis of children may be examined. Moreover, possible changes in the effectiveness of the program may be examined by including functional behavioral evaluations and applications of positive social support for the program.

## References

- Anlıak, Ş., & Dinçer, Ç. (2005). Farklı eğitim yaklaşımları uygulayan okulöncesi eğitim kurumlarına devam eden çocukların kişiler arası problem çözme becerilerinin değerlendirilmesi [The evaluation of the interpersonal problem solving skills of the children attending to the preschools applying different educational approaches]. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 38(1), 149–166.
- Arda, T. B. (2011). *Alternatif düşünme stratejilerinin desteklenmesi programının okul öncesi çocuklarının sosyal becerileri üzerinde etkililiğinin değerlendirilmesi* [Evaluation of promoting alternative thinking strategies (PATHS) curriculum on preschool children's social skills] (Master's thesis, Ege University, Izmir, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>



- Baker–Henningham, H., & Walker, S. (2009). A qualitative study of teacher’s perceptions of an intervention to prevent conduct problems in Jamaican pre–schools. *Child: Care, Health and Development*, 35(5), 632–642.
- Baker–Henningham, H., Scott, S., Jones, K., & Walker, S. (2012). Reducing child conduct problems and promoting social skills in a middle-income country: Cluster randomised controlled trial. *The British Journal of Psychiatry*, 201(2), 101–108.
- Baker–Henningham, H., Walker, S., Powell, C., & Gardner, J. M. (2009). A pilot study of the Incredible Years Teacher Training Programme and a curriculum unit on social and emotional skills in community pre–schools in Jamaica. *Child: Care, Health and Development*, 35(5), 624–631.
- Baydar, N., Küntay, A., Gökşen, F., Yağmurlu, B., & Cemalcılar, Z. (2010). *Türkiye’de erken çocukluk gelişim ekolojileri araştırması* [The study of early childhood developmental ecologies in Turkey]. Proje No: 106K347.
- Büyüköztük, Ş. (2011). *Deneyisel desenler: Ön test-son test kontrol grubu desen ve veri analizi* (3. baskı) [Experimental patterns pre-test post-test control group pattern and data analysis]. Ankara, Turkey: Pegem Akademi.
- Büyüköztürk, Ş. (2008). *Sosyal bilimler için veri analizi el kitabı* (9. baskı) [Manual of data analysis for social sciences]. Ankara, Turkey: Pegem Akademi.
- Büyüköztürk, Ş., Çakmak Kılıç, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2009). *Bilimsel araştırma yöntemleri* (3. baskı) [Scientific research methods]. Ankara, Turkey: Pegem Akademi.
- Bywater, T., Hutchings, J., Whitaker, C., Evans, C., & Parry, L. (2011). The Incredible Years Therapeutic Dinosaur Programme to build social and emotional competence in Welsh primary schools: Study protocol for a randomised controlled trial. *Trials*, 12(1), 39.
- Çorapçı, F., Aksan, N., Arslan-Yalçın, D., & Yağmurlu, B. (2010). Okul öncesi dönemde duygusal, davranışsal ve sosyal uyum taraması: Sosyal yetkinlik ve davranış değerlendirme –30 ölçeği [Emotional, behavioral and social adjustment screening at school entry: Social competence and behavior evaluation-30 scale]. *Çocuk ve Gençlik Ruh Sağlığı Dergisi*, 17(2), 63–74.
- Coşkun, L. (2008). *An adaptation and pilot implementation of an effective intervention program targeting externalizing behaviors in early childhood* (Master’s thesis, Koç University, İstanbul, Turkey).
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson Education, Inc.
- Diken, İ. H., Cavkaytar, A., Batu, S., Bozkurt F., & Kurtyılmaz, Y. (2011). Effectiveness of the Turkish version of “First Step to Success Program” in preventing antisocial behaviors. *Education and Science*, 36(161), 145–158.
- Diñçer, F. Ç. (1995). *Anaokuluna devam eden 5 yaş grubu çocuklarına kişiler arası problem çözme becerilerinin kazandırılmasında eğitimin etkisinin incelenmesi* [The examination of the effect of ‘problem solving’ training on the acquisition of interpersonal problem solving skills by five year old children attending a kindergarten] (Doctoral dissertation, Hacettepe University, Ankara, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Drugli, M. B., Larsson, B., & Clifford, G. (2007). Changes in social competence in young children treated because of conduct problems as viewed by multiple informants. *European Child & Adolescent Psychiatry*, 16(6), 370–378.
- D’Zurilla, T. J., Nezu, A. M., & Maydeu-Olivares, A. (2004). Social problem solving: Theory and assessment. In E. C. Chang, T. J. D’Zurilla & L. J. Sanna (Eds), *Social problem solving: Theory, research, and training* (pp. 11–27). Washington, DC: American Psychological Association.

- Fergusson, D. M., Horwood, L. J., & Stanley, L. (2013). A preliminary evaluation of the Incredible Years Teacher Programme. *New Zealand Journal of Psychology, 42*(2), 51–56.
- Fraenkel, J. R., & Wallen, N. E. (2006). *How to design and evaluate research in education* (6th ed.). New York, NY: McGraw-Hill International Companies, Inc.
- Heller, T. L., Baker, B. L., Henker, B., & Hinshaw, S. P. (1996). Externalizing behavior and cognitive functioning from preschool to first grade: Stability and predictors. *Journal of Clinical Child Psychology, 25*(4), 376–387.
- Herman, K. C., Borden, L. A., Reinke, W. M., & Webster-Stratton, C. (2011). The impact of the Incredible Years Parent, Child, and Teacher Training Programs on children's co-occurring internalizing symptoms. *School Psychology Quarterly, 26*(3), 189–201.
- Homem, T. C., Gaspar, M. F., Seabra-Santos, M. J., Canavarro, M. C., & Azevedo, A. (2014). A pilot study with the Incredible Years Parenting Training: Does it work for fathers of preschoolers with oppositional behavior symptoms? *Fathering, 12*(3), 262.
- Hutchings, J., Bywater, T., Gridley, N., Whitaker, C. J., Martin-Forbes, P., & Gruffydd, S. (2012). The Incredible Years Therapeutic Social and Emotional Skills Programme: A pilot study. *School Psychology International, 33*(3), 285–293.
- Hutchings, J., Lane, E., Owen, R. E., & Gwyn, R. (2004). The introduction of the Webster-Stratton Classroom Dinosaur School Programme in Gwynedd, North Wales: A pilot study. *Educational and Child Psychology, 21*, 4–15.
- Hutchings, J., Williams, M. E., & Pritchard, R. O. (2011). Levels of behavioural difficulties among young Welsh school children. *The University of Wales Journal of Education, 15*(1), 103–115.
- Hyland, L., Mháille, G. N., Lodge, A., & McGilloway, S. (2014). Conduct problems in young, school-going children in Ireland: Prevalence and teacher response. *School Psychology International, 35*(5), 516–529.
- Jones, K., Daley, D., Hutchings, J., Bywater, T., & Eames, C. (2008). Efficacy of the Incredible Years Programme as an early intervention for children with conduct problems and ADHD: Long-term follow-up. *Child: Care, Health and Development, 34*(3), 380–390.
- Joseph, G. E., & Strain, P. S. (2003). Comprehensive evidence-based social-emotional curricula for young children: An analysis of efficacious adoption potential. *Topics in Early Childhood Special Education, 23*(2), 65–76.
- LaFreniere, P. J., & Dumas, J. E. (1996). Social competence and behavior evaluation in children ages 3 to 6 years: The short form (SCBE-30). *Psychological Assessment, 8*(4), 369–377.
- Lau, M. W. C. (1997). Kindergarten teachers' rating of children's social competence and strategies they use to guide appropriate behaviour (Doctoral thesis, The University of Hong Kong, Hong Kong). Retrieved from <http://www.hkta1934.org.hk/NewHorizon/abstract/2001n/page77.pdf>
- Macbeth, G., Razumiejczyk, E., & Ledesma, R. D. (2011). Cliff's Delta Calculator: A non-parametric effect size program for two groups of observations. *Universitas Psychologica, 10*(2), 545–555.
- Mahoney, A. J. (2010). *Aggression in preschool and predictions of peer reactions: How do children expect their peers to feel in response to their behaviors?* (Doctoral dissertation, George Mason University, Fairfax). Retrieved from <http://ebot.gmu.edu/handle/1920/5839?show=full>
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*(4), 674–701.
- Mørch, W., Clifford, G., Larsson, B., Rypdal, P., Tjeflaat, T., Lurie, J., ... Reedtz, C. (2004). *The Incredible Years: The Norwegian Webster-Stratton Programme 1998–2004*. University of Tromsø.

- Pérez-Escoda, N., Filella, G., Alegre, A., & Bisquerra, R. (2012). Developing the emotional competence of teachers and pupils in school contexts. *Electronic Journal of Research in Educational Psychology, 10*(3), 1183–1208.
- Posthumus, J. A., Raaijmakers, M. A., Maassen, G. H., Van Engeland, H., & Matthys, W. (2012). Sustained effects of Incredible Years as a preventive intervention in preschool children with conduct problems. *Journal of Abnormal Child Psychology, 40*(4), 487–500.
- Rafé, E. (2006). *A meta-analysis of the interventions targeting preschool children with externalizing behaviors and an intervention program for Turkish preschool children* (Doctoral dissertation, Koc University, Istanbul, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Reid, M. J., Webster-Stratton, C., & Hammond, M. (2003). Follow-up of children who received the Incredible Years intervention for oppositional-defiant disorder: Maintenance and prediction of 2-year outcome. *Behavior Therapy, 34*(4), 471–491.
- Rubin, A., & Babbie, E. R. (2011). *Research methods for social work* (7th ed.). Belmont, CA: Brooks/Cole, Cengage Learning.
- Sayal, K., Daley, D., James, M., Yang, M., Batty, M. J., Taylor, J. A., ... Hollis, C. (2012). Protocol evaluating the effectiveness of a school-based group programme for parents of children at risk of ADHD: The “PArents, Teachers and CHildren WORKing Together (PATCHWORK)” cluster RCT protocol. *BMJ Open, 2*(5), e001783.
- Semrud-Clikeman, M. (2007). *Social competence in children*. New York, NY: Springer.
- Shaw, D. S., Gilliom, M., Ingoldsby, E. M., & Nagin, D. S. (2003). Trajectories leading to school-age conduct problems. *Developmental Psychology, 39*(2), 189–200.
- Singh, K. (2007). *Quantitative social research methods*. Thousand Oaks, CA: Sage Publications Inc.
- SPSS Inc. (2002). *SPSS for Windows 11.5.0*. Chicago, IL: Author.
- Ştefan, C. A., & Miclea, M. (2013). Effects of a multifocused prevention program on preschool children’s competencies and behavior problems. *Psychology in the Schools, 50*(4), 382–402.
- Sübaşı, G., & Şehirli, N. (2010). Çocuk davranışlarını değerlendirme ölçeğinin geliştirilmesi: Geçerlik ve güvenirlik çalışması [Developing the child behaviour evaluation scale: The validity and reliability study]. *Kastamonu Eğitim Dergisi, 18*(3), 789–804.
- Tennant, R., Goens, C., Barlow, J., Day, C., & Stewart-Brown, S. (2007). A systematic review of reviews of interventions to promote mental health and prevent mental health problems in children and young people. *Journal of Public Mental Health, 6*(1), 25–32.
- The Incredible Years. (n. d.). *Measures and forms for researchers and clinicians*. Retrieved December 12, 2013 from <http://incredibleyears.com/for-researchers/measures/>
- US Department of Health and Human Services. (2013). *Incredible years. National registry of evidence-based programs and practices*. Retrieved December 28, 2013 from <http://www.nrepp.samhsa.gov/View Intervention.aspx?id=311>
- Uyanık Balat, G., Şimşek, Z., & Akman, B. (2008). Okul öncesi eğitim alan çocukların davranış problemlerinin anne ve öğretmen değerlendirilmeleri açısından karşılaştırılması [A comparative study on mothers’ and teachers’ evaluation of behavior problems of children attending preschool education]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 34*, 263–275.
- Uysal, H. (2016). *Eşsiz Yıllar Müdahale Programı Çocuk Boyutu'nun uyarlanması ve programın etkililiğinin araştırılması* [Adaptation of Incredible Years Intervention Program Child Training and investigation of the effectiveness of the program] (Doctoral dissertation, Hacettepe University, Ankara, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>

- Weare, K., & Nind, M. (2011). Mental health promotion and problem prevention in schools: What does the evidence say? *Health Promotion International*, 26(S1), i29–i69.
- Webster-Stratton, C. (2004). Quality training, supervision, ongoing monitoring, and agency support: Key ingredients to implementing the Incredible Years Programs with fidelity. *Treatment Description*, 1–14.
- Webster-Stratton, C. (2009). Affirming diversity: Multi-cultural collaboration to deliver the Incredible Years Parent Programs. *International Journal of Child Health and Human Development*, 2(1), 17–32.
- Webster-Stratton, C. (2010). *How to promote children's social and emotional competence*. Thousand Oaks, CA: Sage Publications Inc.
- Webster-Stratton, C. (n. d.). *The Incredible Years Dinosaur Social Skills and Problem-Solving Curriculum*. Retrieved December 12, 2013 from <http://incredibleyears.com/download/resources/childpgrm/classroom%20dina%20summary%20paper%20IY.pdf>
- Webster-Stratton, C., & Herman, K. C. (2010). Disseminating Incredible Years Series early-intervention programs: Integrating and sustaining services between school and home. *Psychology in the Schools*, 47(1), 36–54.
- Webster-Stratton, C., & Reid, M. J. (2004). Strengthening social and emotional competence in young children—The foundation for early school readiness and success: Incredible Years Classroom Social Skills and Problem-Solving Curriculum. *Infants & Young Children*, 17(2), 96–113.
- Webster-Stratton, C., & Reid, M. J. (2008a). *A school-family partnership: Addressing multiple risk factors to improve school readiness and prevent conduct problems in young children*. Seattle, WA: University of Washington.
- Webster-Stratton, C., & Reid, M. J. (2008b). Adapting the Incredible Years child dinosaur social, emotional, and problem-solving intervention to address comorbid diagnoses. *Journal of Children's Services*, 3(3), 17–30.
- Webster-Stratton, C., & Reid, M. J. (2010). Incredible Years Parents Teachers, and Children Training Series: A multifaceted treatment approach for young children with conduct disorders. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 194–210). New York, NY: Guilford Press.
- Webster-Stratton, C., & Reid, M. J. (2011). The Incredible Years: Evidence-based parenting and child programs for families involved in the child welfare system. In Rubin, A. (Ed.), *Programs and interventions for maltreated children and families at risk: Clinician's guide to evidence-based practice* (Vol. 9, pp. 11–30). Hoboken, NJ: John Wiley & Sons.
- Webster-Stratton, C., Gaspar, M. F., & Seabra-Santos, M. J. (2012). Incredible Years Parent, Teachers and Children's Series: Transportability to Portugal of early intervention programs for preventing conduct problems and promoting social and emotional competence. *Psychosocial Intervention*, 21(2), 157–169.
- Webster-Stratton, C., Reid, J., & Hammond, M. (2001b). Social skills and problem-solving training for children with early-onset conduct problems: Who benefits? *Journal of Child Psychology and Psychiatry*, 42(07), 943–952.
- Webster-Stratton, C., Reid, M. J., & Beauchaine, T. (2011). Combining parent and child training for young children with ADHD. *Journal of Clinical Child & Adolescent Psychology*, 40(2), 191–203.
- Webster-Stratton, C., Reid, M. J., & Beauchaine, T. P. (2013). One-year follow-up of combined parent and child intervention for young children with ADHD. *Journal of Clinical Child & Adolescent Psychology*, 42(2), 251–261.

- Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001a). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child Psychology*, 30(3), 283–302.
- Webster-Stratton, C., Reid, M. J., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: Evaluation of the Incredible Years Teacher and Child Training Programs in high-risk schools. *Journal of Child Psychology and Psychiatry*, 49(5), 471–488.
- Wells, J., Barlow, J., & Stewart-Brown, S. (2003). A systematic review of universal approaches to mental health promotion in schools. *Health Education*, 103(4), 197–220.
- Williford, A. P., & Shelton, T. L. (2008). Using mental health consultation to decrease disruptive behaviors in preschoolers: Adapting an empirically-supported intervention. *Journal of Child Psychology and Psychiatry*, 49(2), 191–200.
- Yılmaz, E. (2012). *60–72 aylık çocukların duyguları anlama becerilerinin sosyal problem çözme becerilerine etkisinin incelenmesi* [Studying effect of emotion understanding skills of 60-72 months old children on their social problem solving skills] (Master’s thesis, Selcuk University, Konya, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>