# The Effect of Social Skills Training on Decreasing the Aggression of Pre-school Children

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**Objective:** Social skills training (SST) aims to increase the ability to perform key social behaviors that are important in achieving success in social situations. The purpose of this study was to examine the effectiveness of social skills intervention for aggressive pre-school children.
**Method:** The sample consisted of 25 children (13 for the experimental group, 12 for the control group). Children in intervention and Control groups were assessed by parent ratings, teacher ratings at-home and kindergarten. Assessments were made at pre-treatment, post-treatment, and three-month follow-ups. The assessment battery consisted of the social skills rating system-teacher form, teacher-rated aggression, and intelligence test. These skills were carried out in 11 sessions and on two stages and were taught twice a week.
**Results:** Significant results emerged with respect to aggression and social skill levels. With respect to parent ratings, aggressive behaviors decreased more so in the treatment group than the control group. In addition, social skills significantly increased between post-treatment and follow-ups in the treatment group compare to the control group. In other words, teacher ratings of social behavior showed improvement over time.
**Conclusions:** The results of this study indicate that aggression would decrease in the treatment group largely over time than the control group. Several directions for future research are discussed, including the addition of more sessions to the curriculum, a parent-involvement component, and a contingency management program. It would also be helpful to evaluate SST in a larger number of pre-school centers and to extend follow-up assessments beyond three months periods.
**Key Words:**
*Aggression, Preschool child, Prevention and control,Psychological adaptation*

Aggressive behavior may be considered one of the most substantial social problems in many societies (1). Childhood aggression has long been a focus of clinical intervention research. This focus is clearly warranted as children's aggressive behavior is remarkably stable over time and predictive of a number of negative outcomes throughout childhood and on into adulthood (2, 3). Such outcomes include the fostering of negative images among peers and teachers, peer rejection, and increased loneliness in childhood as well as an increased likelihood of school dropout, alcohol and drug use, delinquency in adolescence, eventual criminality and psychopathology in adulthood (4-9). On the other hand, positive peer relationships are associated with increased self-esteem and superior social problem solving (10,11). Like antisocial behavior, pro-social behavior has important implications for social and school-related adjustment of children. Whereas aggressive and oppositional behavior are associated with school problems, pro-social behavior (e.g., empathic, socially responsible behavior) has been linked to higher test scores, peer acceptance, and high status (12).
In addition, teacher reports suggest that children come

into school with differing levels of social skills and that these skills are critical for early school success. For example, a recent monograph emphasized the importance of social and emotional competence in preschool children for a successful transition to kindergarten (13). Another study found that some teachers  reported at least 50% of children entering their kindergarten class did not have the basic competencies needed to do well in school such as following directions, working independently, and having adequate academic skills (13, 14) .
 In other words, Social competence in interpersonal relationships has a significant long-term influence upon psychological, academic and adaptive functioning (15, 16).Poor social skills and relationship difficulties with peers, family and teachers are associated with many forms of psychopathology including depression (17), conduct disorders (18, 19), social phobia (20) , autism , aspergers syndrome and early onset of schizophrenia (21). Not surprisingly, attempts to enhance social competence, social skills and the quality of relationships, form an important component of treatment and prevention of many mental health problems (22). For example, teaching social skills improve the attitude, assertiveness management, and

self- efficacy of students (22).

Three decades of concentrated efforts have resulted in the development of a variety of effective treatment approaches that range from those focusing more directly on the aggressive child, including operant procedures, social skills training (SST), and the use of stimulant medication to those targeting broader systems such as parent management training and school based interventions (23, 24).

SST emerged as a treatment option because of increasing dissatisfaction with the more traditional operant approaches. The use of reinforcement to increase pro social behavior and punishment to inhibit aggressive responses proved successful in achieving immediate improvements but failed to demonstrate more long-term maintenance and cross-setting generalization. Further, such short-term decreases in aggressive behavior were not necessarily accompanied by increases in pro social behavior or gains in peer acceptance. The more durable improvements in behavior and peer acceptance produced by early SST interventions have led to the increased use of these procedures with aggressive children and adolescents (24).

In addition to efficacy, Filming; Sovanstrum; Ralie about SST reported structured method in decreasing aggression on adolescents was more effective than individual and group discussion methods. Also the results suggest that, as Cartledge and milburn have noted, children and adolescents would have been more successful in using social skills (empathy, perspective taking, assertive behavior and self Control) had they have been taught by structured methods (25).

Therefore, treatment at the preschool age can function as both prevention and intervention. The most prominent treatments for aggression and general social skills deficits are stimulant medication, parent training, and social skills training.

Despite the fact that aggressive behavior becomes stable by the elementary school years, there has been relatively little interest in intervening with preschool-aged children. The present study evaluated a social skills training procedure (structured learning method) designed to reduce aggression levels and promote positive social skills in preschoolers center.

This study emphasized the training procedures of instruction, rehearsal, and feedback in an effort to enhance skill knowledge, performance, and generalization/maintenance of social skills acquisition.

The main hypotheses of the present study propose that in the treatment group, in comparison to the control group, a) negative social behavior, including aggression, would decrease at post-treatment and follow-up as measured by teacher ratings; b) positive social behavior would increase at post-treatment and follow-up as measured by parent ratings.

The results indicate that aggressive behavior causes concerns in pre school centers. Instead of addressing these concerns repeatedly on a case-by-case basis, it would be more beneficial to develop a systemic form of intervention (26).

As a result, examination of the effects of treatment on the aggressive subgroup would provide insights into the beneficial effects of social-cognitive skills training on aggression in preschoolers.

## Materials and Methods

### Participants

A preschool population was chosen for a variety of reasons. Preschool teachers recognize disruptive behavior as the biggest challenge they face in managing their classrooms. Preschool is a prime time for language development and since language is a social instrument, gains in one area are often related to gains in the others. Acceptance by peers is not only correlated with positive attitudes toward school but it also is a powerful predictor of social adjustment throughout life. Social competence is a universal concern of parents and families.

The present study was conducted in the city of Uromia. A list of pre-school centers was prepared and from this list, eight pre-school centers were selected at random from high, medium and low zones by stratified sampling. Of these kindergartens, four were randomly assigned as active treatment sites and four others were randomly assigned as control sites. The sample consisted of 25 children. In the pretest phase, 24 subjects participated, 12 experimental and 12 controls. The subjects were aged 6-7 years. Thus, the groups did not differ by intelligence level.

Conditions for inclusion were as follows: (a) parent and kindergarten personnel agreed to random assignment to either the intervention or control groups, (b) kindergarten personnel agreed to refrain from implementing any new social competence programs for the duration of the study, and a written consent form was taken from the subjects' parents. However, those aggressive children whose parents did not complete the consent form and those who were generally diagnosed as having some specific disorders such as hyperactivity/attention deficit disorder, oppositional defiant, conduct disorders, mental retardation, depression, etc by DSM-IV criteria were excluded from this study.

### Procedure and Instruments

For the purposes of this study, subjects were divided into two groups based on their initial scores (teacher ratings) on the aggressive behavior such that children scoring greater than one SD above the mean were assigned to the groups (N = 24).

### Aggressive Behaviors

Aggressive behaviors of children in the pre-school centers were assessed with the help of an inventory developed by Vahedi and colleagues (in press). This inventory consisted of 43 behavioral items on a Likert type scale. Class teachers were requested to observe aggressive behaviors of children for a period of one week before filling up the inventory. Then they were

rated on a four-point scale (0=Never, l=once in month, 2=once in a week, and 3=Very Often). The coefficient of Cronbach's alpha was 0.98 for total scores. Factor analysis produced four factors that included dimensions of physical assault, verbal assault, relational and impulsive aggression (27).

*Social Skills Rating System-Teacher Form (SSRTS)*
SSRTS was included to provide a comprehensive assessment of social skills typically displayed in the classroom. The preschool level (ages 3-0 to 4-11) of the SSRS-T consisted of 40 items such as, "Finishes classroom assignments within time limits," scored on a 3-point scale (0=Never, l=Sometimes, and 2 =Very Often). The SSRS-T composed of two main scales: social skills (e.g., makes friends easily; Gives compliments to peers; Waits turn in games or other activities) and problem behaviors (e.g., has temper tantrums; appears lonely). The social skills scale had standard scores ranging from 40 to >130, whereas the problem behaviors scale scores ranged from 85 to 145. Both scales had a mean of 100 and a standard deviation of 15. The social skills scale had three subscales: cooperation, assertion, and self-control. The problem behaviors scale had two subscales: externalizing and internalizing (26).

The SSRS which is currently considered the most comprehensive rating scale assessment of social skills was used in the present study as a broad measure of social behavior. One advantage of this study was the fact that the items were primarily behavioral and therefore required a low level of inference on the part of the teacher (28). Furthermore, the psychometric properties of the SSRS-T indicated adequate reliability and validity. Internal consistency using Cronbach's alpha was 0.94 for the social skills scale and 0.82 for the problem behavior scale of the SSRS-T (. Four-week test-retest reliability coefficients were 0.85 for the Social Skills scale and 0.84 for the problem behaviors scale of the SSRS-T at the elementary level). These results indicate that the SSRS-T preschool level is reliable. Successful attempts have been made to directly validate the SSRS-T preschool level. In several studies, the SSRS-T was able to discriminate between typical preschoolers and those who were developmentally delayed, diagnosed with attention deficit/hyperactivity disorder, and enrolled in head start (26, 28, 29).

With respect to convergent validity, the social skills scale and the problem behaviors scale of the SSRS-T were found to correlate in the expected directions with the socialization domain of the Vineland adaptive behavior scales, teacher ratings of pro social behavior, and the Revised comers ratings scales teacher form (26, 28, 29).

Fantuzzo et al. attempted to validate the SSRS-T preschool level with head start children. The overall social skills scale and the problem behaviors scale were found to be inversely related, indicating that these two subscales represent opposite poles of the overall construct of social competence. The degree of overlap between peer ratings, peer nomination and the SSRS-T was less than six percent, indicating that measurements of peer acceptance is relatively independent from the measurement of social competence in preschoolers. As such, the SSRS-T preschool level does not substitute for the measurement of peer acceptance (30).

Direct evidence of the validity of the SSRS-T preschool level is also found in studies that have employed the SSRS-T as a dependent variable. In a study examining the treatment of withdrawn, maltreated preschoolers attending head start, the SSRS-T preschool level was sensitive to treatment effects, as indicated by increased social skills and decreased problem behaviors (31). Similarly, McKinney and Rust found a pre- treatment to post-treatment decrease in problem behavior scores in a sample of African-American preschoolers. Therefore, the SSRS-T is an assessment device capable of revealing effects in treatment studies (29). We used the previously translated Persian version that has formally been used in Iran (32).

*Design*
A randomized pretest-posttest control group design (two group×three assessment session designs) was utilized in the study. In order to compare the social skills ratings and aggressive behavior for the treatment and control groups at the three assessment points, analyses were conducted using a repeated measures multivariate analysis of variance. The within subjects independent variable was time (T1, T2, T3) and the between subjects independent variables were groups (treatment, control). All these children were assessed for social skills aggression behavior.

*Program implementation*
The teacher had a bachelor degree in psychology. Prior to program implementation, she participated in an initial two day training sessions. She was introduced to the program's content, and practiced teaching methods and exchanged ideas regarding modeling and support of skills throughout the school day. During pre-intervention, the teacher was directed to interact with the children and taught them social skills in two 10-minute sessions. Then the researcher video taped those sessions and after confirming by advisors, the researcher and teacher watched the video of the teaching activity. During the pre-intervention, the teacher received feedback while watching the video. The teacher typically taught two or three program lessons collectively per week.

Factor and Schilmoeller also investigated the effects of a social skills training program on aggression and sociability in preschoolers (24). Their training program involved teaching the concepts of communication, participation, cooperation, and validation support to children. Like Zahavi and Asher's program (24), this program employed verbal instructions/prompts to teach concepts, but added the behavioral components of

**Table 1- Comparison of Means±SD for Aggression scale and Social Skill System Form Scale between Control vs. Case group during Pre-Treatment. Treatment, Post-Treatment, and Follow-up**

| variables | Statistics | Pre-Treatment | | Post-Treatment | | Follow-up | |
|---|---|---|---|---|---|---|---|
| | | Control | Treatment | Control | Treatment | Control | Treatment |
| **Aggression** | Mean | -14.41 | -23.91 | 4.75 | 2.83 | -2.25 | -26.33 |
| | SD | 12.04 | 18.52 | 4.97 | 2.92 | 23.64 | 15.63 |
| | n | 12 | 12 | 12 | 12 | 12 | 12 |
| **SSRS-Social Skills** | Mean | 3.16 | -10.84 | 1.08 | .6154 | 11.25 | 13.53 |
| | SD | 4.15 | 12.22 | 2.93 | 2.87 | 12.54 | 11.94 |
| | n | 12 | 13 | 12 | 13 | 12 | 13 |

modeling, positive reinforcement (i.e., attention and praise), role play, feedback, behavior rehearsal and translating it to another context(structured learning method).In this study, instructional materials involved various skills including self–knowledge, empathy, interpersonal communications, responding to social interactions, initiating social interactions, coping with emotional issues, and maintaining social interactions and social problem solving. The instructional materials are part of preschool's life skills book that Iran welfare organization has published (33) . These skills were carried out in 11 sessions on two stages and were taught twice a week. The researcher provided the teacher with a written description of the skill, verbally reviewed the skill with her, and provided suggestions for teaching the skills. The teacher was trained to use the following strategies to teach social skills to the children: 1) discussing the importance of the skills; 2) identifying the steps necessary to complete the skills; 3) modeling the skills; 4) providing feedback to children as they role-played the skills and providing tasks for the subjects at home.

## Result

Two primary hypotheses were examined in the following analyses. The first hypothesis was that a greater decrease in aggressive behavior would occur at post treatment and follow-up in the treatment condition as opposed to the control condition. The second hypothesis was that a greater increase in social skills would be evidenced in the treatment condition in comparison to the control condition at post-treatment and follow-up. In order to test these hypotheses, the data were first examined for site differences and then a multivariate analysis of variance approach was adopted.

To control the site differences, difference scores were created to account for change between the three time points. The difference between pre-treatment and post treatment scores accounted for change between pre-treatment and post-treatment time points. The difference between post-treatment and follow-up scores

accounted for change between post-treatment and follow-up time points. Finally, the difference between pretreatment and follow-up scores accounted for the three time points replaced the within-subjects factor of general change between pre-treatment and follow-up time points, regardless of post-treatment. Each of these three variables was created for each of the two dependent variables in a repeated measures design. In other words, three separate scores representing the time. Moreover, the use of difference scores was controlled for site differences by measuring score change regardless of the actual levels of the original scores. In order to adopt this approach, all of the two dependent variables were converted to difference scores, and not just those variables found to have site differences. One advantage of adopting a difference score approach was that the original MANOVA plan could still be employed and each of the hypotheses could be examined under this protective scheme, diminishing the possibility of making a Type I error. Moreover, the use of difference scores clearly outlines the treatment effects with respect to time in the initial analysis. Because each difference score represents a particular change across time, post-hoc comparisons are rendered unnecessary, thereby simplifying the analyses.

### Decreased Aggression Hypothesis

In order to determine whether the treatment group experienced larger decreases in aggression across time than the control group, a 2×3 (condition×time) two way repeated measure multivariate analysis of variance was conducted. The between-subjects factor of condition had two levels: treatment and control.

To examine decreased aggression, aggressive behavior scale scores which are dependent variables, were included in the MANOVA .The dependent variable was broken down into three difference scores: post-treatment minus pre-treatment (time1); follow-up minus post-treatment (time2); and follow-up minus pre-treatment (time3). 12 preschoolers comprised the control group while 12 preschoolers were in the treatment group.

An examination of the means revealed that the control group decreased slightly while the treatment group

**Table 2.  Result of Paired comparison of multiple levels**

| Levels of factors | | Paired Differences | | | | | t | df | p |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | SE | 95% CI | | | | |
| | | | | | Lower | Upper | | | |
| | time1 - time2 | -22.36 | 16.68 | 3.34 | -15.47 | -29.24 | -6.69 | 24 | 0.001 |
| factor | time1 - time3 | -4.875 | 19.87 | 4.06 | 3.52 | -13.26 | -1.20 | 23 | 0.242 |
| | time2 - time3 | 18.08 | 22.72 | 4.63 | 8.48 | 27.68 | 3.89 | 23 | 0.001 |

**Table3. Results of Paired comparison of multiple levels among variables**

| Levels of factors | | Paired Differences | | | | | t | df | p |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | SE | 95% CI | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | social1 - social2 | 2.16 | -4.96 | 2.43 | .06 | -9.98 | -2.04 | 24 | 0.05 |
| Pair 2 | social1 - social3 | 16.42 | -16.56 | 3.28 | -9.77 | -23.34 | -5.04 | 24 | 0.001 |
| Pair 3 | social2 - social3 | -11.6 | 11.05 | 2.21 | -7.04 | -16.16 | -5.24 | 24 | 0.001 |

and follow-up, treatment group decreased and the control group was not varied. Similarly, between pre-treatment and follow-up, irrespective of post-treatment, in the treatment group, aggression decreased largely compare to the control group (Table 1).

Overall, the findings manifested social skills training interaction with threefold time test decreased aggression significantly.

The main effect of condition was statistically significant at the multivariate level (Wilks' Lambda=.32, p<0.001). Similarly, the interaction between condition and aggression was significant at the multivariate level (Wilks' Lambda=0.75, p<0.001). To identify significant levels of these effects, we used two fold comparison methods with multiple levels of the variables. Inspection at the univariate level revealed that the difference between pre-treatment and post-treatment was marginally significant, t(24)=6.7, p<0.001; the difference between post-treatment and follow-up was significant, t(23) = 1.2, p< .05; and the difference between pre-treatment and follow-up was also significant to their experiences, t(23)=3.9, p<0.001 (Table 2).

*Increased Social Skills Hypothesis*
In order to determine whether the treatment group experienced more improvement in social skills across time than the control group, a 2 ×3 (condition × time) two way repeated measure analysis of variance was conducted. The between-subjects factor of condition had two levels: treatment and control. To examine increased social skills, the SSRS-social skills scale scores which are dependent variables, were included in the MANOVA. The dependent variable was broken down into three difference scores: post-treatment minus pre-treatment (social1); follow-up minus post-treatment (social2); and follow-up minus pre-treatment (social3).

This method resulted in three dependent variables. Twelve preschoolers comprised the control group while 13 preschoolers were in the treatment group (see table1). The main effect of condition was statistically significant at the multivariate level (Wilks' Lambda=0.40, p<0.001). The interaction between condition and SSRS was also significant at the multivariate level, F (2, 22) =0.66, p < 0.001.

Therefore, to identify significant levels of these effects, we used twofold comparisons methods with multiple levels of the variable. Inspection at the univariate level revealed that the difference between pre-treatment and post-treatment was marginally significant, t(24)=2.04, p < 05; the difference between post-treatment and follow-up was significant, t (24) = 5.04, p< .001; and the difference between pre-treatment and follow-up was also significant, t(24)=5.24, p<0.001 (Table2).

**Discussion**
The present study evaluated the efficacy of social skills training curriculum-targeting aggression in preschoolers. Specifically, two main hypotheses were tested through comparison of the treatment group to a control group. First, it was hypothesized that aggression would decrease in the treatment group largely over time than the control group. Second, the treatment group was hypothesized to increase the use of pro social skills to a greater degree than the control group at post-treatment and follow-up. While consistent with these hypotheses, significant differences between the treatment and control groups in either aggression or social skills emerged at the post- or two-month follow-up assessments.

Social skills training is based on the assumption that negative behaviors including aggression are often the result of a deficit in the skills needed for socially competent interactions with peers. It is expected that

the provision of the appropriate social skills would result in decreased negative behaviors. The goal is to adjust the thought processes that underlie negative behaviors rather than targeting the negative behaviors directly (24).

Social perception skills training refers to teaching the individual to monitor, discriminate and identify cues relating to (i) one's own emotions and feelings; (ii) the emotions, feelings and perspective of others in an interaction; (iii) the characteristics and social rules of specific social situation and context. Accurate social perception enables children to recognize when a social problem is present and when and how an adjustment to one's social behavior is required in order to produce a successful social outcome. Social perception skills, therefore, form an important component of social skills. Training in social perception skills does not appear to produce significant improvements in social competence when used in isolation. However, there is a strong theoretical rationale for proposing that training in social perception skills should be a fundamental component of SST (20).

Our study demonstrated that social skills training were more effective in reducing aggressive behaviors and improving social skills in the treatment group over time than the control group. These findings were in line with previously repeated research that utilized structured learning method for SST on preschool children (33-36). In addition, problem-solving treatments were more effective in reducing subjective anger experiences .

Therefore, Mastery of social– cognitive skills, plus the ability to control the valence of emotions, is related negatively to aggressive behavior and is thought to potentiate a child's ability to navigate social situations (37).

In addition to modeling, feedback and homework techniques are positively related to the magnitude of the effect size (38). As a result, increasing opportunities for practice would strengthen student learning and generalization (34 ) .

When considering these findings, it is important to remember that the subjects in our sample were not likely to have exhibited behavior classified as chronic or severe disorder as compared to subjects placed in special programs. Inherent in working with this population and in prevention research in general, therefore, is the challenge of ensuring enough statistical power through the effect size or sample size to detect relatively small improvements, particularly over a short term (39).

Notably, a vast majority of parents of the children with whom we have worked expressed that the subjects know what to do to control their behavior. Although peers, family, and neighborhood influences including reinforcement contingencies may compete strongly with a skill-based cognitive–behavioral intervention, we believe that teachers can increase student resilience in the face of behavioral risk factors through what they teach and model in schools. Our findings, though limited, support the continuing study of such efforts.

There are certain limitations to the interpretations of the results. One limitation is that teachers' ratings are subjective. Teachers may have expected that students would improve their social skills because they were receiving social skills instruction. These expectations could have led teachers to artificially inflate their ratings of students' social skills. The other limitation was the small sample size (N = 24). The selection and small sample limited the generalizability and power of the results. Thus, caution should be taken when applying these results to different populations of children. Future research will incorporate larger sample sizes, more information on teachers, and observational ratings in order to deal with the issue of nested ness and independence in repeated measurement more effectively. In addition, since the SST protocol has not been evaluated in the Iranian preschool population, conducting more research on SST to adopt it with Iranian children is suggested.

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