



# Effectiveness of Social Skills Training on Social Anxiety Disorder in Students with Learning Disabilities

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## Abstract

**Background:** Children with learning disabilities (LDs) may be at risk of social anxiety because they are less socially accepted and more anxious than their peers. Approximately 70% of students with LDs experience a high level of anxiety symptoms, and they have clinical symptoms of anxiety more than their peers.

**Objectives:** This study aimed to determine the effectiveness of social skills training on social anxiety disorder in students with LDs.

**Methods:** This randomized controlled trial study included a pretest-posttest control group. Data were collected using Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (SCID-5), Spence Children's Anxiety Scale (SCAS), and Matson Evaluation of Social Skills with Youngsters (MESSY). In total, 30 participants with diagnosed LDs and high social anxiety were randomly assigned to intervention and control groups. The intervention group received a social skills treatment over 12 sessions of 90 minutes. After collecting the data, SPSS version 24 was used with 95% CI for data analysis. The Levene test was used to assess the equality of variances, and analysis of covariance (ANCOVA) employed to assess the main effect of social skills intervention.

**Results:** The results of the ANCOVA test showed that social skills training reduced social anxiety in the intervention group ( $P < 0.01$ ). The covariate (pretest of anxiety) was also significant ( $P < 0.01$ ).

**Conclusions:** This study showed that social skills training could reduce social anxiety in children with LDs. This result can be a guideline for clinicians to provide the appropriate intervention for the emotional problems of students with LDs.

**Keywords:** Child, Learning Disability, Social Anxiety, Social Skills

## 1. Background

Learning disability (LD) refers to heterogeneous and developmental disorders manifested by difficulties in the acquisition and use of academic skills (1). LD diagnosed when a person's achievement in individually administered and standardized tests is considerably under that expected for their age, schooling, and level of intelligence. LD is classified as a reading disorder, mathematics disorder, or disorder of written expression (2). Learning disorders are among the most often diagnosed developmental disorders in childhood, with a prevalence rate of 4 - 9% for deficits in reading and 3 - 7% for deficiencies in mathematics (3).

Children with LDs may be at risk of developing mental problems because they are less socially accepted and more anxious than their peers without LDs (4). Nelson and Harwood indicated that approximately 70% of students with LDs experienced high anxiety symptoms (5). A study in 2016 compared different kinds of anxiety disorders in children with LDs and showed that social anxiety disorder was

significantly higher in children with LDs than in normal children (6). High levels of anxiety have adverse effects on academic performance, and the impact of persistent anxiety on academic performance may lead to poor educational outcomes (7, 8).

There is evidence that children with LDs have social skills deficits in how they see themselves, how others perceive them as socially competent, how they are seen to be effective in social interactions, and how they act in social situations (9). Social skills deficits are considered important because of their negative effects not only on the social field but also on the achievement field (10, 11).

Children with specific LDs usually lack appropriate social skills and cannot fully participate in the social life of their peers (12). Children with LDs experience deficits in social information processing abilities and provide inadequate solutions to social problems (13). There is a hypothesis that people experiencing social anxiety have social skills deficits (14). Social skills training is a common treatment

for social anxiety (15). Currently, social skills training is viewed as an experimental intervention (10). Given the fact that students with LDs have anxiety, it is necessary to consider it in assessments and interventions. In previous studies, the emotional requirements of students with LDs have usually been neglected because they have typically been served only for LD itself (5). Although some studies have shown that social skills affect social anxiety, few studies have used and provided a protocol of this method for children with LDs.

## 2. Objectives

In this study, we aimed to examine the effectiveness of social skills training on social anxiety disorder in students with LDs and propose an effective treatment plan.

## 3. Methods

This study was designed as a randomized controlled trial 2-group pretest-posttest study. All study procedures were approved by the Ethics Committee of Zahedan University of Medical Sciences (code: IR.ZAUMS.REC.1397.274). The participants were selected using the convenience sampling method from students with LDs that have comorbid social anxiety disorder in Zahedan schools from September 2018 to September 2019. First, students were referred to a psychiatrist to be diagnosed based on the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5). Then, students diagnosed with comorbid LD and social anxiety were referred to a clinical psychologist to be assessed by structured clinical interview for DSM-5 (SCID-5), Spence Children's Anxiety Scale (SCAS), and Matson Evaluation of Social Skills with Youngsters (MESSY). Finally, they were randomly assigned to intervention and control groups. All intervention protocols were performed in the Clinical Psychology and Psychiatry Department of Baharan Psychiatric Center, a university hospital in Zahedan (south-east of Iran).

The inclusion criteria included: (1) Informed consent of their parents; (2) Having diagnostic criteria for LD based on DSM-5; (3) Without any other treatments; (4) Without any comorbid disorder except for anxiety disorder

The exclusion criteria included: (1) Participants who were not willing to continue the study; (2) Starting any treatment between sessions.

The pretest included SCAS and MESSY administered to both intervention and control groups. The social skills treatment was applied for the experimental group in 12 sessions of 60 minutes at the Baharan Psychiatric Center of Zahedan University of Medical Sciences. The control group

was not given any intervention. One week after the last session, the posttest was given to both groups.

### 3.1. Instruments

SCID-5 was used to assess and identify severity dimensions of mental disorders. It can determine lifetime diagnostic criteria and current criteria for disorders, and it sometimes determines current criteria first, then lifetime criteria (16). The reliability of the Persian version was 0.99, and the validity was 0.69 (17).

SCAS contained a total of 45 items using a 4-point Likert scale ranging from "never" to "always." It measures 6 types of anxiety in children aged between 8 and 12, including social phobia, separation anxiety, panic-agoraphobia, obsessive-compulsive disorder, fears of physical injury, and generalized anxiety. In this study, only the social phobia factor was used (18). The Cronbach  $\alpha$  of the Persian version was 0.92, and the validity was 0.56 (19).

MESSY contained a total of 61 items using a 5-point Likert scale ranging from "never" to "always." It is used for children aged 4 to 18 to evaluate both appropriate and inappropriate social skills (20). The Cronbach  $\alpha$  of the Persian version was 0.95 (21), and the validity was 0.55 (22).

### 3.2. Intervention

The structure of social skills training sessions was as follows (Table 1): In the first session, children and therapist were acquainted, and the importance of social skills was discussed. In the second session, students learned and practiced how to start, continue, and end conversations and daily compliments. In the third session, students learned appropriate emotional expression and how to demand from others. In the fourth session, they learned and practiced how to express specific emotions such as anger, sadness, and self-control. In the fifth session, they practiced how to make the right decisions and learned to say "NO." In the sixth session, they learned and practiced how to deal with criticism and how to apologize appropriately. In the seventh session, they learned cooperation and coping with communication problems with peers and family members. In the eighth session, they learned and practiced how to take responsibility and how to express positive opinions about themselves. In the ninth session, they learned how to encounter and solve problems. In the 10th session, students learned how to accept and comply with laws and rules at home, school, or community. In the 11th session, assertiveness was trained. The 12th session concluded and summarized previous sessions.

**Table 1.** The Social Skills Intervention Protocol

Intervention Protocol	
<b>Session 1</b>	Introduction; Talking about the importance of social skills
<b>Session 2</b>	Learning about daily compliments; How to start a conversation, continue, and terminate it
<b>Session 3</b>	Learning how to demand; Positive and negative emotional expression skills
<b>Session 4</b>	Teaching how to express certain emotions such as anger, sadness, and self-control by using a pattern and practicing
<b>Session 5</b>	Making the right decisions and learning to say "NO" with practice and assignments
<b>Session 6</b>	Dealing with criticism and apology skills with practice and assignment
<b>Session 7</b>	Teaching and practicing partnership/cooperation and coping with problems and crises in relationships with peers and family members
<b>Session 8</b>	Learning about responsibility with practice; Expressing positive opinions about themselves
<b>Session 9</b>	How to encounter and solve problems
<b>Session 10</b>	Learning about how to accept and comply with laws and rules at home, school, or community
<b>Session 11</b>	Assertiveness training
<b>Session 12</b>	Conclusion and evaluation of sessions

### 3.3. Statistical Analyses

Data were analyzed using SPSS version 24 (SPSS Inc, Chicago, Ill, USA). The Levene test was used to assess the equality of variances, and analysis of covariance (ANCOVA) employed to assess the main effect of social skills intervention.

## 4. Results

Each group included 20 participants, among which 15 cases were included in the statistical analysis. Five participants from each group were excluded because they did not attend all protocol sessions or complete the questionnaire completely. Six participants in the intervention group and 8 participants in the control group were female (Table 2).

Table 3 shows the means and SDs of variables in the intervention and control groups.

The Levene test was not significant ( $F_{1,28} = 0.16$ ;  $P = 0.69$ ), indicating that the assumption of homogeneity of variance was approved. This finding shows that the variances across groups were equal, and no difference was observed between the 2 groups.

The results of the covariance (ANCOVA) test showed that the main effect of social skills intervention was significant ( $F = 138.05$ ;  $P < 0.01$ ), indicating that social anxiety level was lower in the intervention group ( $4.80 \pm 1.61$ ) than in the control group ( $11.93 \pm 2.22$ ). The covariate (pretest of anxiety) was also significant ( $F_{1,27} = 36.28$ ;  $P < 0.01$ ; partial  $\eta^2 = 0.57$ ). In other words, there was a positive relationship in the social anxiety scores between pretest and posttest (Table 4).

**Table 2.** Demographic Characteristic of Study Participants by Groups (N = 30)<sup>a</sup>

Variables	Intervention Group (N = 15)	Control Group (N = 15)
<b>Sex</b>		
Boy	9 (60)	7 (46.7)
Girl	6 (40)	8 (53.3)
<b>Age (education level)</b>		
10 years (4th)	12 (80)	8 (53.3)
11 years (5th)	3 (20)	7 (46.7)
<b>Father's education level</b>		
Illiterate	2 (13.3)	4 (26.7)
Elementary	6 (40)	5 (33.3)
Diploma	3 (20)	3 (20)
Bachelor's or higher	4 (26.7)	3 (20)
<b>mother's education level</b>		
Illiterate	4 (26.7)	3 (20)
Elementary	4 (26.7)	7 (46.7)
Diploma	4 (26.7)	2 (13.3)
Bachelor's or higher	3 (20)	3 (20)

<sup>a</sup>Values are expressed as No. (%).

## 5. Discussion

It has usually been assumed that students with LDs experience more emotional problems than students without LDs (23, 24). School-age children realize the importance of academic success by their teachers and parents. Conse-

**Table 3.** Means and SDs of Variables in the Intervention and Control Groups (N = 30)

Scale	Number	Mean $\pm$ SD
<b>SCAS</b>		
Experimental		
Pretest	15	10.53 $\pm$ 2.85
Posttest	15	4.80 $\pm$ 1.61
Control		
Pretest	15	12.80 $\pm$ 2.91
Posttest	15	11.93 $\pm$ 2.22
<b>MESSEY</b>		
Experimental		
Pretest	15	156.13 $\pm$ 15.46
Posttest	15	226.00 $\pm$ 9.68
Control		
Pretest	15	150.80 $\pm$ 11.17
Posttest	15	154.73 $\pm$ 8.71

quently, students who struggle to master academic skills may develop anxiety in anticipation of possible academic failure. The experience of anxiety may become a greater barrier to learning for students with LDs (25). To our knowledge, this is the first study that evaluates the effectiveness of social skills training on social anxiety disorder in children with LDs. For this purpose, 15 children with LDs and comorbid social anxiety disorder received 12-week social skills training and compared with the control group. The results showed that social skills training was significantly effective in the reduction of social anxiety symptoms.

Cognitive theories suggest that selective attention to threats increases anxiety levels and negatively affects judgment; besides, studies have shown that peers of students with LDs describe these students as nonsocial, worried, anxious, angry, and distressed. Identifying anxiety disorders in children with LDs is especially difficult, and they are usually missed by clinicians, primarily due to communication problems (26, 27).

The results of the current study are consistent with the results of Spence et al. on 7- and 14-year-old children; they showed that social skills training could reduce the social and general anxiety; their results showed that only a few children in the treatment group continued to experience social anxiety; however, these children also could reduce the social and general anxiety in 12-month follow-up treatment (14). The research of Beidel et al. on children aged 8 - 12 showed that behavioral treatment programs on social skills could increase social skills, reduce social fear and anxiety, decrease associated psychopathology, and increase social interaction, and 67% of their inter-

vention group did not meet diagnostic symptoms for social phobia in 6-month follow-up treatment (28). Also, in the study by Caballo et al. on children aged 9 - 12 with social anxiety, it was shown that social skills training reduced social anxiety in 6-month follow-up treatment (29).

Children with social anxiety tend to expect poor social performance and reflect negatively on their performance in social interactions. A large body of studies have reported a relationship between childhood social anxiety and lower self-reported social performance predictions and concluded that children with social anxiety have more deficient social skills than their peers (30, 31). In contrast, Halldorsson et al. showed that children with social anxiety did not usually underestimate their past social performance and were just as likely as other peers. However, the findings suggested that children with social anxiety are harder on themselves and more likely to criticize themselves than their peers when their social performance is inadequate (30).

Many studies agree that social skills deficits may underlie social anxiety disorder. Social communication problems in children have been linked to the development of social phobia. Notably, it has been declared that social skills deficits may lead to adverse reactions from peers, which develop anxiety disorders (32). Consistently, it has been reported that children with higher levels of social anxiety score higher on how anxious they felt than peers (33).

One of the crucial components of social skills is peer relation, for example, friendships, peer liking, and cooperation in social activities. Notably, youth with social anxiety may have an increased risk for peer problems. Generally, children with anxiety disorders are neglected by their peers; they have less communication with other children and speak less or have a shorter duration than healthy peers (34). Peer responses may reveal a history of social interaction patterns (35).

However, not all theorists have accepted the suggestion that social phobic individuals have social skills deficits. Deficits in social skills probably have a more critical role in the social phobia for children than adults. Adulthoods probably have several coping strategies and compensating social skills. In line with this probability, findings showed that adults with social phobia did not have socially skilled deficits (36).

It is clear that socially phobic children have limited success in learning to discriminate and label emotional expressions. One assumption is that socially phobic children have social skills deficits in performing the behaviors that enhance the possibility of achieving successful social outcomes and being judged positively by others (37).

This study has some limitations: first, small sample

**Table 4.** The Results of Analysis of Covariance for the Effectiveness of Social skills on Social Anxiety

Dependent Variables	Sum of Squares	Df	Mean Square	F	P	Partial eta Squared	Observed Power
<b>Social anxiety</b>							
Pretest of social anxiety	60.39	1	60.39	36.28	< 0.01	0.57	1.00
Groups	229.81	1	229.81	138.05	< 0.01	0.84	1.00
Error	44.94	27	1.66	-	-	-	-

size; second, lack of follow-up program; and third, using a heterogeneous group of LDs; also, we did not compare our method with other psychotherapies.

### 5.1. Conclusions

As the findings of this study show, social skills intervention is an effective treatment for social anxiety disorder in children with LDs. Since many children with LDs suffer from this psychological condition, it is better to consider this treatment plan to reduce their anxiety and social problems. This may improve their social interactions and the efficacy of their primary treatment.

### Footnotes

**Authors' Contribution:** Study concept and design; critical revision of the manuscript for important intellectual content; analysis and interpretation of data; and study supervision: Nour-Mohammad Bakhshani and Shahab Lotfinia. Acquisition of data: Reihaneh Tafreshi. Drafting of the manuscript and statistical analysis: Shahab Lotfinia. Administrative, technical, and material support: Nour-Mohammad Bakhshani.

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**Informed Consent:** Informed consent was taken from all participants.

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