

# Research Paper: Effect of Cognitive Behavioral Therapy on Social Competence in Physically Disabled Adolescents



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## ABSTRACT

**Objectives:** This study aimed to evaluate the effect of social group work interventions with cognitive behavioral approach on social competence in physically disabled adolescents.

**Methods:** This was a quasi-experimental study with a pre-test and post-test and control group design. The statistical population included physically disabled adolescents aged 13-18 years who were referred to the Center of Rehabilitation and Vocational Training in Sanandaj City, Iran, to participate in educational programs. To this end, 30 physically disabled adolescents were selected based on inclusion criteria and were divided into 2 matching groups (intervention and control). Social competence questionnaire was completed by both groups at the beginning and at the end of training. The intervention group was trained for 8 weeks in terms of social competence, whereas the control group received no special training. The obtained data were analyzed using SPSS. The Chi-square, Independent samples t-test, and Paired t test were used to verify the study assumptions.

**Results:** Comparing the intervention group with the controls before and after training revealed that teaching patients with cognitive behavioral strategies had a significant impact on increasing their social competence (Mean±SD, 181.66±17.88 versus 120.93±10.47; P=0.0001) and its dimensions (cognitive, behavioral, emotional and motivational) of the former group.

**Discussion:** It seems that one of the efficient methods to increase social competence among physically disabled adolescents is cognitive behavioral therapy within the social group work. Thus, coaches and teachers of this group are recommended to use this method, to increase their social competence and subsequently increasing their presence in public areas.

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## Highlights

- Social competence refers to the quality of peer communication and social behavior in social settings.
- Children's social competence is one of the most important predictors of children's development.
- Adolescents with early problems in social behaviors are at risk for experiencing negative consequences.

## Plain Language Summary

People with disabilities need to adapt with their environment. However, family members of disabled people might take an avoidance attitude, rejection, or too much support that add to already many problems for these people. Disabled people in dealing with these issues may develop negative attitudes, prejudices, discrimination, and maladaptive behaviors. The consequences of these issues are psychosocial barriers and deficiencies in health and social capabilities. Thus, the disabled people have lower self-esteem and self-confidence and in general have less social interactions. Some of these factors can be explained by lower "social competence" in persons with disabilities.

### 1. Introduction

**D**isability goes beyond physical dysfunction and includes activity restrictions, stigma, discrimination, and social participation limitations [1]. The Global Burden of Disease (GBD) has defined disability as the loss of health in areas such as mobility, cognition, hearing, and vision [2]. More than 15% of the world population suffer from disabilities that restrict their function in family, community, and politics. Eighty percent of them live in low- and middle-income countries [3]. According to the International Classification of Functioning, disability and health (ICF), social stigma and discrimination are considered as significant 'environmental factors' that contribute to disability [2, 4, 5].

As the National Information Center for Children and Youth with Disabilities (2015) describes, a physical disability is defined as a physical condition that negatively affects at least one main living activity of an individual [6]. People with disabilities need an ability to be compatible and adapt to their environment. Moreover, because of unfavorable attitudes in society, the family members of physically disabled people are avoidant, rejectful, or too much supportive to them, that creates many problems. Once dealing with such issues, disabled individuals may experience negative attitudes, prejudice, discrimination, and maladaptive behaviors that affect various aspects of their lives. The consequences of these issues are psychosocial barriers and deficiencies in health and social capabilities. This leads to lower self-esteem and self-confidence in this population, compare to other healthy people. It also makes them uncomfortable in social com-

munication, ultimately resulting in less social interaction. Some of these factors can be explained by lower "social competence" in persons with disabilities.

Social competence is a basic characteristic of child's psychological adaptation [7]. It refers to the ability to interact positively and get along well with others [8]. In other words, social competence is described by a set of essential social skills to interact well with others and act effectively in peer groups. Children with inadequate social skills are more exposed to various adverse social outcomes in subsequent lifetimes [9]. Children's social competence is among the most important determinants of children's development [10, 11]. Moreover, adolescents with early problems in social behavior are at risk of negative consequences such as academic failure, peer rejection, and delinquent behavior [12].

In the current study, we conducted Cognitive Behavior Therapy (CBT) to reduce emotional distress and behavioral problems in persons with physical disabilities, in order to increase their social competence. The efficacy of CBT on social work domains is evident by the constant increase in the number of therapists who consider CBT as their preferred approach of practice [13]. In the CBT approach, clients are assumed to participate in their own changing process. CBT is an empowering model [14].

There is a wealth of literature describing positive consequences of CBT in emotional distress and behavioral problems such as anxiety, depression, and aggression [15-17]. However, there is a gap in investigating the positive consequences of CBT with regard to social factors like social competence. On the other hand, various

studies have reported that social competence can play a substantial role in the social life of disabled persons [18-20]. Thus, this study evaluated the effect of CBT (including assertiveness skills, self relaxation techniques, cognitive restructuring, stress inoculation training, and self-efficacy) on social competence in physically disabled adolescents.

## 2. Methods

### Study design

The study was designed as a pre-test and post-test with a control group and was conducted at a single site (Center of Rehabilitation and Vocational Training) in Sanandaj City, Iran from June to August 2016.

### Study participants

As shown in Figure 1, from the 34 prospective participants recruited from the center of rehabilitation and vocational training, 4 participants were excluded because of not meeting the inclusion criteria. By matching allocation (based on age, gender, education and type of

disability), 15 disabled persons were assigned into the intervention group and 15 others into the control group. The inclusion criteria were physically disabled adolescents being 13 to 18 years old, having normal IQ, being educated, and having physical ability to attend the training sessions. The excluding criteria were unwillingness to participate and absence in more than 2 training sessions. The objective and protocol of the study were described to the participants before signing the written informed consent. In addition, one of the physically disabled adolescents, who was close with other members and had a training experience, served as the facilitator in the training sessions.

### Intervention plan and study tools

The tools employed in the current study were demographic data questionnaire and Felner social competence scale [21]. The socio-demographic data questionnaire included data on age, gender, educational level, and disability type. In addition, Felner social competence scale contained 47 questions in 4 dimensions of cognitive (e.g. sense of responsibility and criti-

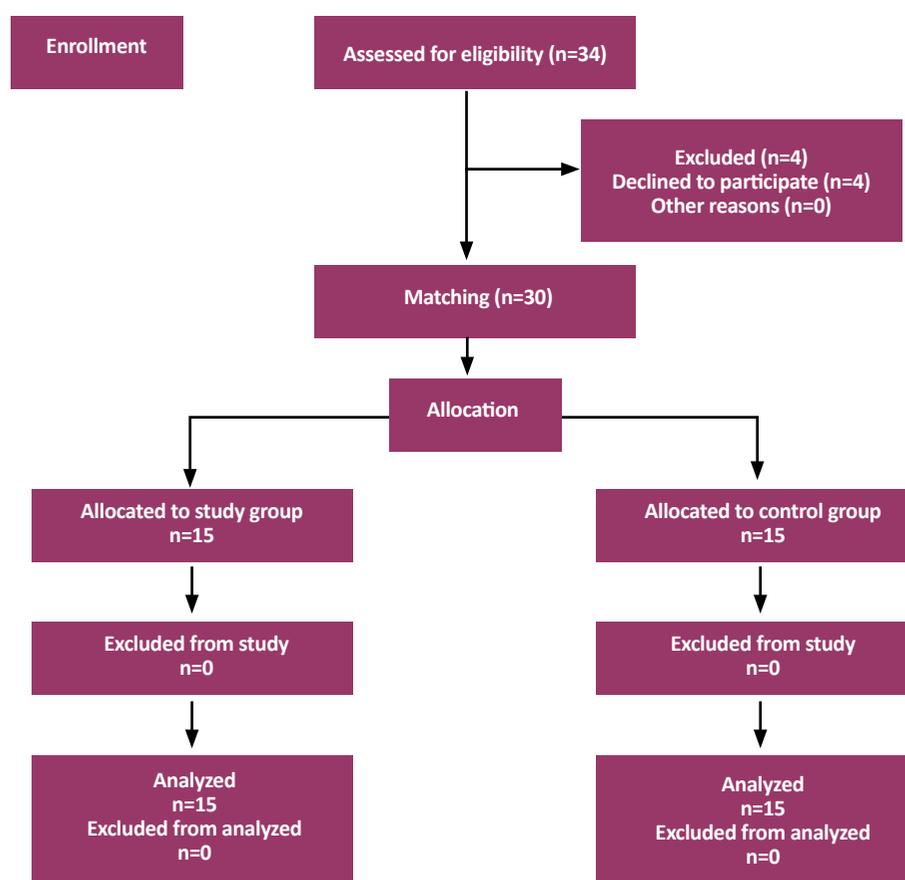


Figure 1. Flowchart of the study

cal reception), behavioral (e.g. escape from school and completing homework), emotional (e.g. affection for parents and friends), and motivational skills (e.g. doubt in personal abilities and optimism about the future). It had a Likert-type Scale with 7 response options ranging from “strongly agree” to “strongly disagree”. The validity and reliability of the questionnaire has been confirmed in previous studies [21, 22].

The social competence questionnaire was completed by the groups both at the beginning and the end of training program. The intervention group was trained for 8 weeks in terms of assertiveness skills, self-relaxation techniques, cognitive restructuring, stress inoculation training, and self-efficacy. The control group received no special trainings. Each session content included the following items:

First week: Creating a positive and supportive relationship among members and the social worker, as well as creating positive impressions among group members. Second week: Promoting trust and group interactions, creating a positive environment for the members, and implementing group activities to enhance member confidence. Third week (skills related to the cognitive dimension): Understanding the efficient and inefficient beliefs when working on issues, educating the participants about cognitive restructuring to change the beliefs and perceptions about problems and inefficient behaviors. Fourth week (skills related to the behavioral dimension): Assertiveness training through role playing exercises. Fifth week (skills related to the motivational dimension): Educating participants about self-efficacy and its stages (self-regulation, succession experiences, and self-talk), and helping members with creating life purpose, and self-regulation. Sixth week: Making progress in training regarding the previous session. Practicing self-talk techniques in a challenging situation. Seventh week (skills related to the emotional dimension): Stress inoculation training, and practicing self-relaxation techniques. Eighth week: Finalizing the teamwork and reviewing the whole process.

All techniques were applied for all 15 participants in the intervention group and in a similar manner. Training sessions lasted 60 minutes and were held once per week. All training sessions were held in the Center of Rehabilitation and Vocational Training in Sanandaj. A trained social worker delivered the intervention sessions. All of the participants completed the treatment protocol. There was no missing data on the intervention sessions.

### Data analysis

The obtained data were analyzed using SPSS. Descriptive statistics including mean and standard deviation scores were computed for all variables. In addition, the Chi-square, Independent samples t-test, and Paired t test were used to verify the study assumptions. The significance level was set at  $P < 0.05$ .

### 3. Results

According to the demographic findings, the Mean±SD age of the intervention and control groups were  $15.47 \pm 1.40$  and  $15.80 \pm 1.56$  years, respectively. The participants included 8 boys and 7 girls in both groups. In the intervention group, 27% were educated up to the elementary school, 60% intermediate school, and 13% high school. In the control group, 27% were educated up to the elementary school, 46% intermediate school, and 27% high school. In addition, 80% of participants suffered from congenital disabilities and 20% were disabled because of accidents (in both groups). In terms of type of disability, 20% of the participants in the intervention group suffered from ataxia, 47% from Cerebral Palsy (CP), 13% from Spinal Cord Injury (SCI), 13% from amputations, and 7% from poliomyelitis. While in the control group, 13% suffered from ataxia, 54% from CP, 13% from SCI, 13% from amputations and 7% from poliomyelitis. According to the Mann-Whitney U Test and Chi-square Test results, both groups had the same type of disability and educational level. Moreover, no significant difference was observed between the intervention and control groups in terms of demographic data (Table 1).

The results of Independent samples t test were calculated based on the differences between mean scores of social competence and its dimensions in pre-test and post-test, obtained from the intervention and control groups (first P) (Table 2). As a result, the mean score of social competence and its dimensions were higher in the intervention group compared to the control group ( $P = 0.001$ ).

As presented in Table 2, it is suggested that social group work interventions and CBT had a positive effect on social competence (and its cognitive, behavioral, emotional and motivational dimensions) in the intervention group. In order to confirm the validity of the results, the means score of all 5 main variables were evaluated. According to Table 2, the differences were significant in the intervention group (second P).

**Table 1.** Demographic information of the intervention and control groups<sup>a</sup>

Demographic Factors		Intervention	Control	Total	P
Gender	Male	7(46.7)	8(53.3)	15(50)	1
	Female	8(53.3)	7(46.7)	15(50)	
	Total	15(100)	15(100)	30(100)	
Type of disability	Ataxia	2(13.3)	3(20)	5(16.7)	0.761
	Cerebral Palsy	8(53.3)	7(46.7)	15(50)	
	Spinal cord injury	2(13.3)	2(13.3)	4(13.3)	
	Amputations	1(6.7)	1(6.7)	2(6.7)	
	Poliomyelitis	2(13.3)	2(13.3)	4(13.3)	
	Total	15(100)	15(100)	30(100)	
Educational level	Elementary school	4(26.7)	4(26.7)	8(26.7)	0.438
	Guidance school	9(60)	7(46.7)	16(53.3)	
	High school	2(13.3)	4(26.7)	6(20)	
	Total	15(100)	15(100)	30(100)	
Age, y	Mean±SD	15.47±1.40	15.80±1.56	15.64±1.48	0.652

a: Data are presented in No. (%) or Mean±SD.

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**Table 2.** Independent samples t-test results of differences between the study variables in the intervention and control groups (N=30)

Group		Mean±SD		P <sup>a</sup>	Mean±SD Difference	P <sup>b</sup> [Confidence Interval]
		Pre-Test	Post-Test			
Social competence	Intervention	124±14.16	181.66±17.88	<0.001	57.66±3.72	<0.001[53.89, 61.38]
	Control	123.66±16.85	120.93±10.47	0.93	-2.73±-6.38	
Cognitive dimension	Intervention	8.40±3.60	12.46±2.77	<0.001	4.06±-0.83	<0.001[3.79, 5.89]
	Control	7.73±2.52	8.40±2.32	0.75	0.67±-0.20	
Behavioral dimension	Intervention	87.20±13.02	132.8±14.12	<0.001	45.60±1.10	<0.001[44.50, 46.70]
	Control	88.93±12.81	88.06±8.85	0.14	-0.87±-3.96	
Emotional dimension	Intervention	8.46±2.94	11.46±3.16	<0.001	3.00±0.22	<0.001[2.78, 3.22]
	Control	8.06±3.03	7.46±2.32	0.08	-0.6±-0.71	
Motivational dimension	Intervention	19.94±2.71	24.93±4.74	<0.001	4.99±2.03	<0.001[2.96, 7.02]
	Control	18.93±2.49	17±1.32	0.09	-1.93±-1.17	

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P<sup>a</sup>: Test mean score during time by paired sample t-test; P<sup>b</sup>: Test mean score based on the differences between the two groups using student's t-test.

## 4. Discussion

In this study, the CBT improved social competence among physically disabled adolescents, so that after CBT, social competence significantly improved in the intervention group compared to the controls. This finding is in agreement with the results of similar studies conducted in this field [22-25]. Momeni et al. reported the positive impact of life skills training on enhancement of social and emotional competence in students [22]. It seems that CBT has a positive effect on social competence among physically disabled adolescents. The results also revealed that social work interventions using the CBT had a significant effect on all cognitive, behavioral, emotional, and motivational dimensions among adolescents with physical disability. This finding complies with the results of some studies such as Evans and Allze, Jansson et al. and Hronis et al. For example, Evans and Allze (2018) demonstrated that CBT decrease the client's feelings of anger and increase their self-esteem [26-28].

Previous studies have mainly focused on the role of CBT in reducing psychological and behavioral problems in the normal population. However, the current study focused on the effect of CBT on social competence in physically disabled adolescents.

There are not sufficient supportive recourses in the developing countries to address the needs of people with disabilities. In addition, disabled people face more social stigma in these countries and are seldom present in public areas. Therefore, applying assertiveness, self-relaxation, cognitive restructuring, stress inoculation, and self-efficacy techniques as a social group work intervention can be an effective way to promote the social competence. It could subsequently increase their attendance in educational and occupational fields. Therefore, social workers and professionals are recommended to benefit from these trainings to support physically disabled persons.

Although this study has accomplished its goals, a number of limitations need to be noted. The lack of a follow-up measure to examine whether the results are maintained in the future was among the main limitations. Another limitation in this study relates to the lack of standard training programs for social group work in physically disabled persons.

Further study should focus on the social dimensions of disabilities in order to better know about the effects and dimensions of this issue. Evaluation of the effectiveness of the intervention package introduced in this study with

the aim of improving social competence in other groups of adolescents and comparing them with people with disabilities are also suggested. A follow-up evaluation should be conducted to assess the validity of obtained results.

## 5. Conclusion

CBT within the social group work is an efficient method to increase social competence among physically disabled adolescents. Thus, the coaches and teachers of such adolescents are recommended to make use of this technique to increase their social competence and subsequently increase their presence in public areas.

## Ethical Considerations

### Compliance with ethical guidelines

The purpose and protocol of the study was fully explained to the participants and all of them provided a written informed consent. Furthermore, upon completion of the study, the control group received CBT with the same order. The study was approved by the Ethics Committee of the University of Social Welfare and Rehabilitation Sciences (IR.USWR.No.700.240).

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### Authors contributions

Study concept and design: Faeze Seyedi, Mansour Fathi, Asghar Dadkhah, Seyed Hossein Mohaqeqi Kamal; Interpretation of data: Poria Reza Soltani, Faeze Seyedi; Manuscript preparation: Seyed Hossein Mohaqeqi Kamal.

### Conflict of interest

The authors declared no conflict of interest.

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