

**Original Article****Effectiveness of Adapted Program for the Education and Enrichment of Relational Skills (PEERS) in Adolescents with ASD**Saima<sup>1</sup> and Rizwana Amin<sup>1\*</sup><sup>1</sup>Bahria University Islamabad Campus, Islamabad, Pakistan

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## ABSTRACT

PEERS® for Adolescents is an evidence-based social skills intervention for autistic youth and adolescents with other social challenges. **Objective:** To examine the effectiveness of the PEERS intervention in Pakistani adolescents with ASD. **Methods:** Total 98 parents (Mean age = 41.60, SD = 3.90), and 63 teachers (Mean age = 36.63, SD = 7.80) of 98 adolescents (Mean age = 14.39, SD = 1.80) with ASD were recruited from two schools of Islamabad and one school of Rawalpindi via purposive sampling. **Results:** Findings demonstrated significant improvements in social skills knowledge of adolescents with adopted PEERS,  $F(1, 93) = 36.38, p < .001$ . **Conclusions:** Results indicated that PEERS is an effective program to enhance the overall socialization of Pakistani Adolescents with ASD.

## INTRODUCTION

Autism spectrum disorder (ASD) is a group of neurodevelopmental disorders that causes social and behavioral issues. ASD is "impaired social, linguistic, and behavioral development that is often manifested before age 3 years and frequently coexists with abnormalities in cognitive functioning, learning, attention, and sensory processing" [1]. The Diagnostic and Statistical Manual of Mental Disorders, states that people with ASD have symptoms that make it hard for them to function in school, work, and other areas of their lives [2]. These include repetitive actions, limited interests, and problems socializing and communicating. ASD affects all races, ethnicities, and socioeconomic groups. Even though ASD is a lifelong disorder, programs and treatments can help

children's symptoms and daily functioning. Caregivers should discuss ASD screening and evaluation with their doctors. Social impairment, a hallmark of many neurodevelopment diseases, affects ASD patients at all cognitive and linguistic levels [3]. Low socioeconomic status, high prenatal issues, and poor maternal and newborn health services may explain this higher rate of learning challenges. However its frequency is rising in developed countries, with 1 in 110 children diagnosed with autism [4]. Conversely, the condition is just being known in Pakistan. Due to the intimate association between learning disabilities and autism, many Pakistani studies have found higher prevalence of both. 6.5% of 6,365 children in a cluster sample study had mild mental impairment, whereas

1.9% had considerable cognitive handicap [5, 6]. Adolescence phase can be difficult for children with ASD since they are more motivated to socialize with their peers but also more aware of their social disability [7]. Poor social skills often lead to peer rejection and victimization, inadequate social support, a lack of fulfilling friendships, feelings of loneliness and isolation, difficulties in school and work, and the development of anxiety and mood disorders [8, 9]. This vulnerable demographic needs thorough social skills training during adolescence. Social skills intervention programs for adolescents with ASD are becoming more popular, however research suggests they do not improve social outcomes [10]. Programs that show potential have limited generalization and short treatment advantages [11, 12]. Reichow and Volkmar reviewed evidence-based social skills therapies and found many treatment delivery strategies that could improve social outcomes for ASD patients [12]. Applied behavior analysis, naturalistic methods, parent and family participation, peer training, group therapy, visual aids, and video modelling can help teach social skills. Behavioral rehearsal exercises, coaching with performance feedback in small groups, and time-limited social skills instruction using behavioral modelling and role-play demonstrations are all effective intervention strategies for teaching social skills [13]. Evidence-based treatment manuals, didactic training using social etiquette norms and stages, and in-person socialization homework assignments improve treatment outcomes for adolescents with ASD [14-16]. Clinical investigations have indicated that the PEERS program improves social functioning in adolescents with ASD. The Program for the Education and Enrichment of Relational Skills (PEERS) uses CBT teaching methods. UCLA's evidence-based social skills curriculum teaches relationship development, peer dispute, and peer rejection. Laugeson *et al.*, found that adolescents who participated in the program had improved social skills as reported by parents, increased knowledge of social skills, and increased frequency of hosted peer get-togethers compared to a waitlist control group [15]. Treatment gains were maintained five years later [17]. Another study found that adolescents who participated in the PEERS program improved their social cognition, social awareness, social motivation, assertiveness, cooperation, responsibility, knowledge, and responsiveness in these areas, reduced autistic mannerisms, and increased peer interactions [18]. Thus, Overall, the PEERS program has had favorable results, although more research is needed as it is still young. This study examines the program's influence on a Pakistani community. Hence present study aimed to adapt and introduce the adapted UCLA PEERS model in educational setups in Pakistani schools in order to improve

Pakistani adolescents' adaptive behavior skills, social skills, and quality of play by involving primary caregivers such as parents and teachers. Objective of this study was to evaluate the effectiveness of the adapted UCLA PEERS model in experimental group. Hypothesis states that there is likely to be a significant improvement in post social skill knowledge with respect to pre assessment, after the training of participants of with adapted UCLA PEERS model in experimental group.

## METHODS

Experimental research design and purposive sampling technique was used in the present study for the recruitment of the participants. Total 98 parents and 63 teachers of 98 adolescents with ASD were recruited from two schools of Islamabad and one school of Rawalpindi. An introductory session has been conducted in a group to inform the participants about the purpose of the study (See table 1 for complete descriptive statistic). A total of 57 parents of 57 adolescents with ASD and 31 teachers of these adolescents showed their interest to be part of an experimental group (EG). Whereas, remaining 41 parents of 41 adolescents with ASD and 32 teachers of these adolescents became part of the control group (CG). Adolescents (who were able to communicate verbally and had been diagnosed with mild ASD), Parents and teachers of adolescents with mild ASD diagnosis, who were proficient in English language, and those who provided signed consent form to take part in the adapted version of UCLA PEERS, were included in the study. Children, adolescents and adults (who weren't able to communicate verbally and had been diagnosed with moderate to severe ASD), and Parents and teachers of children, adolescents and adults with other intellectual or neuro-developmental disability (e.g. ADHD, severe ASD), and who were not proficient in English language. Study use demographic data sheet constructed by author that include age, gender, education, family system, socioeconomic status, occupation and number of children. Moreover, the TASSK questionnaire that was originally that was developed by Norris *et al.*, was used to measure pre and post assessment of social skill knowledge of participants [19]. Scores range from 0 to 26, with higher scores indicating stronger understanding of adolescent social skills. The test is treatment-sensitive, with a Cronbach's alpha of 0.56 [20]. This study included total of 98 parents and 63 teachers of 98 adolescents with ASD which were recruited from two schools of Islamabad and one school of Rawalpindi. An introductory session with each parent and teacher has been conducted in a group form, to inform the participants about the purpose of the study. Parents and teachers were the main participants, who participated in the adapted

UCLA PEERS program and they were assigned activity sheets and homework assignments to deliver the learned social skills to the adolescents with ASD. After taking formal permission from the original author, PEERS program manual was adopted according to indigenous culture. Afterward, the adapted UCLA PEERS program was implemented on the parents and teachers of adolescents. Aim of the study was described in terms of confidentiality concerns, anonymity of the participants and their right to withdraw from participating in the adapted UCLA PEERS program. Pre assessment of participants was done on social knowledge questionnaire. The Adapted UCLA PEERS model included 14 weekly sessions (1 session per week). These sessions mainly involved parents and teachers to enhance the comprehensive knowledge, understanding and quality of socialization of adolescents with ASD. A trained therapist, who was certified in UCLA PEERS model by the developer of original UCLA PEERS model (Dr. Laugeson), educated the parents and teachers about conversational skills, peer relationships, rejection and problem-solving skills and therapist provided homework assignments to both teachers and parents along with the activity sheets throughout the intervention phase. Afterward the post assessment was done on same participants. Ethical considerations were considered particularly while conducting this research. Permission and approval from the Research Ethics Board, Institutional Review Board, author of the scales and significant authorities was taken before conducting research. Every participant of the research received a consent form along with the brief description about the aim of the present research. Only those participants were considered as the part of study who were interested to take part in the present research.

## RESULTS

Table 1 shows Mean  $\pm$  SD and frequency (%) of demographic characteristics of participants.

**Table 1:** Demographic characteristics of the participants

Variables	Adolescents		Parents		Teachers	
	M(SD)	f(%)	M(SD)	f(%)	M(SD)	f(%)
Age	14.39(1.80)		41.60(3.90)		36.63(7.80)	
Gender	Male	47(48)		63(64.3)		59(93.7)
	Female	51(52)		35(35.7)		4(6.3)
Education	8.03(1.42)		16.31(2.15)		17.49(1.76)	
No. of siblings	One	14(14.3)	-	-	-	-
	Two	38(38.8)	-	-	-	-
	Three	38(38.8)	-	-	-	-
	Four	8(8.2)	-	-	-	-
Birth Order	First	37(37.8)	-	-	-	-
	Middle	48(49.0)	-	-	-	-
	Last	13(13.3)	-	-	-	-
Children with Autism	One	-	-	86(87.8)	-	-
	Two	-	-	12(12.2)	-	-
Autism Diagnosis Age	-	-	2.95(0.94)		-	-
Living Status	Nuclear	-	-	58(59.2)	-	-
	Joint	-	-	40(40.8)	-	-
Working Status	Working	-	-	28(28.6)	-	-
	Non-working	-	-	70(71.4)	-	-
Yes	-	-	12(12.2)		-	-
	No	-	-	86(87.8)		-

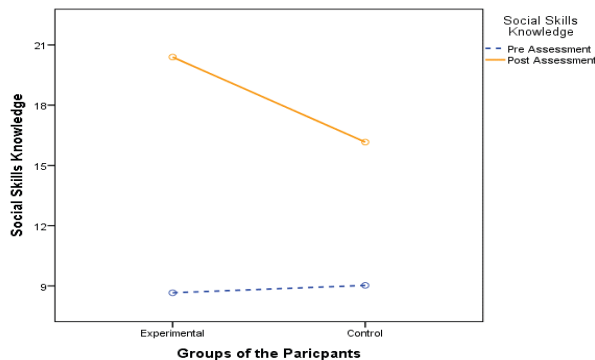
Results showed the adolescents who received UCLA PEERS intervention showed significant improvement in social skills knowledge in post assessment, as compared to the pre assessment (Table 2). However, no change was observed in social skills knowledge for the adolescents who did not receive the UCLA PEERS intervention across pre post assessments with  $F(1, 93)=41.23, p<.001$ .

**Table 2:** Mixed (2x2) Factorial ANCOVA for Pre-Post Assessments of Social Skills Knowledge across

Variables	Experimental Group		Control Group		F (1, 93)	P	$\eta^2$
	Pre	Post	Pre	Post			
	M $\pm$ SD	M $\pm$ SD	M $\pm$ SD	M $\pm$ SD			
Social Skills Knowledge	8.67 $\pm$ 1.46	20.25 $\pm$ 3.67	9.02 $\pm$ 1.56	16.30 $\pm$ 4.30	41.23	.00	.30

Note. M = mean, SD = Standard Deviation,  $\eta^2$  = eta square  
It was hypothesized that experimental group will show significant improvement in social skill knowledge with respect to the adapted UCLA PEERS model's outcomes.

Pre and Post assessments was done on social skills knowledge across experimental (EG) and control Groups (CG) of the adolescent with ASD. The interaction effects of groups (EG & CG) and assessments (pre & post) was found to be significant with the knowledge of social skills of adolescents with ASD (Figure 1).



Covariates appearing in the model are evaluated at the following values: Age of the Participants = 14.39, Gender of the Participants = .52, Education of Child = 8.03

**Figure 1:** Interaction Plot of Pre-Post Assessments of Social Skills Knowledge across Experimental and Control Groups of the Adolescent with Autism Spectrum Disorder

The results of two-way mixed factorial ANOVA showed that the significant main effect for Groups (EG & CG) across social skills knowledge for adolescent with autism spectrum disorder.

## DISCUSSION

Current study aimed to adapt and introduce the adapted UCLA PEERS model in educational setups in Pakistani schools in order to improve Pakistani adolescents' adaptive behavior skills, social skills, and quality of play by involving primary caregivers such as parents and teachers. This was done in order to assist Pakistani adolescents with ASD in a manner that was more accurate and consistent. Children with autism will benefit from this technique since it will help them become resourceful enough to speak, grasp, and carry on a good discussion. Present study hypothesized that there would be a significant improvement in post social skill knowledge with respect to post assessment after the training of participants with adapted UCLA PEERS model in experimental group. The interaction effects of groups (EG & CG) and assessments (pre & post) was found to be significant with the knowledge of social skills of adolescents with ASD (Figure 1). Results showed the adolescents who received UCLA PEERS intervention showed significant improvement in social skills knowledge in post assessment, as compared to the pre assessment (Table 2). Several studies reported that UCLA PEERS improved social skills knowledge [21-23] and social skills [24] after participation in UCLA PEERS intervention [25-26]. Another comparative study revealed that UCLA PEERS is an evidence-based social skills training which resulted in

improved social skills knowledge and reduced social skills impairment [27]. At a 14-week follow-up evaluation, teachers reported improved social skills and parents reported a decrease in problem behaviors, particularly self-control and externalizing behavior [21]. Another research found that the PEERS program reduced social anxiety symptoms [28]. Another study found that the PEERS program for high-functioning middle school and high school adolescents with autism spectrum disorders improved social skills more in children with higher baseline social skills and lower self-reported perceived social functioning [29]. Findings of adolescent's self-reports indicated significant improvement in social skills knowledge and frequency of hosted and invited get-togethers with peers, and parent reports suggested a decrease in adolescents' social skills deficits [30]. Additionally, a recent study also concluded a significant improvement in social skills knowledge and overall socialization skills of adolescents with ASD after participation in the UCLA PEERS program [31]. Moreover, UCLA PEERS efficacy study was performed by Laugeson et al., [15]. A total thirty-three ASD teens were randomly allocated to the PEERS group or a general social skills training group. The PEERS course helped teenagers understand nonverbal communication and social idioms better than the control group. Furthermore, Laugeson et al., in another study examined the long-term impact of PEERS on social skills and functioning [18]. 47 PEERS-enrolled ASD adolescents were observed for 14 weeks. Adolescents maintained their social skills knowledge six months following the session. The teenagers also improved socially, including social responsiveness and autism symptoms. In a recent study, Mandell compared PEERS to a control group getting normal treatment [32]. The study randomly allocated 152 ASD teenagers to the PEERS program or the control group. The PEERS course helped teenagers grasp emotions and social norms better than the control group. Hence, it's been proved that the UCLA PEERS model is an effective treatment plan to improve social skills knowledge in adolescents with ASD.

## CONCLUSIONS

The results concluded that the adapted UCLA PEERS intervention is an effective measure to enhance social skills knowledge, quality of socialization and social dimensions along with the improved general health. Quantitative tools were used to gather data, but a mixed approach could have provided more insight. Adolescents could have shared their stance with parents and teachers, and 1-5 years of follow up is needed to examine the long-term effectiveness of the program. Moreover, explorations of cross-cultural validation trials are needed. This research

will make a contribution to the treatment of children with ASD who have impairments in their social skills. It will provide valuable information for parents, teachers, psychologists, and mental health workers to practice the UCLA PEERS model to develop social skills, adaptive behavior skills, and the quality of play in children. It will also make it easier for mental health professionals to deal with a decline in developing social skills. The findings of this study will have a lasting effect on Pakistani society, particularly in the areas of autism spectrum disorder (ASD) management and the improvement of teenagers' overall social functioning.

### Authors Contribution

Conceptualization: S, RA

Methodology: S, RA

Formal analysis: S, RA

Writing-review and editing: S, RA

All authors have read and agreed to the published version of the manuscript.

### Conflicts of Interest

The authors declare no conflict of interest.

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