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Exploration of Social Skill Deficit Level among Children with Autism Spectrum Disorder in Punjab and ICT

Imran Nazir[1], Hina Noor[2], Misbah Waqar[3]

[1]PhD Scholar, Department of Special Education, Allama Iqbal Open University, Islamabad.
[2]Assistant Professor, Department of Special Education, Allama Iqbal Open University, Islamabad.
[3]PhD Scholar, Department of Special Education, Allama Iqbal Open University, Islamabad.
Correspondence: imran.nazir2008@gmail.com[1]

ABSTRACT

Aim of the Study: To explore social skill deficit level of children with ASD in Punjab and ICT.

Methodology: The study was descriptive research with survey research design. All the confirmed and diagnosed children with ASD in ICT and Punjab special education institutes were the population and sample of the study. Social Responsiveness Scale (SRS-2) developed by John Constantino (2005) was used to measures social skill deficit level of children with ASD in following five subscales i.e., social awareness, social cognition, social communication, social motivation and restricted interest & repetitive behavior. Data was collected through the tool containing statements in Urdu and English language in both soft (google form) and hard version.

Findings: More than 82% of children were having moderate to severe deficit level of social skills. Parental qualification and financial status were found as major factors which make the significance difference in social skill scores of the children with ASD.

Conclusion: No significant difference was found in the scores of children with ASD having enrolment of one year or many years in schools which raise the question about efficacy of existing services provided to the children with ASD.

Keywords: Autism Spectrum Disorder, Social Skills, Social Communication, Social Motivation, Repetitive Behavior.

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Introduction

Children with Autism Spectrum Disorder have severe difficulties interacting and using their social and communication skills. The life of children with ASD is badly affected by these deficiencies, which also have a harmful influence on other aspects of their development. It is necessary for professionals and parents to completely focus on this area in order to address the social reciprocity deficits because issues in the social domain are one of the crucial core symptoms of children with ASD (Dekker et al., 2019). It was found in a study that more than fifty percent students were facing moderate to severe deficit in social

skills (Fazil, 2021). Children with ASD may benefit from an adequate educational curriculum adapted to their particular needs in the three areas of behavioral, affective, and cognitive social skills impairments (Yeo & Teng, 2015). Children with ASD have to face the social anxiety due to deficit in social competency (Espelöer et al., 2021) .

Social skills play an important role to interact with others for every individual in life. Children with impairments have ambitions and plans for the future just like other kids do. To increase their abilities and reach their full capacity, they need quality education. Each institute must provide a variety of services and assistance to support the range of special needs (UNESCO and MES, 1994). Different types of services may be helpful for them to increase their social skills. Children with ASD showed improvement in joint attention skills with the help of in-home social robot for a long term (Scassellati et al., 2018) . Human robot interaction is one of the methods for developing social skills among children with ASD (Raptopoulou et al., 2021) The key concept an inclusive school is that all students, despite of problems or differences, must learn jointly when possible. Through appropriate curricula, managerial structures, teaching strategies, consumption of resources and connection with their communities, inclusive schools have to admit and react to the varied needs of their students, accommodating both different learning styles and rates. They must also make sure that each student reach an immense education (Dreyer, 2017). Children with ASD having social skill deficit were found to be difficult to include with non disabled children (Yeo. & Teng, 2015). Though, policymakers often don't take into description the requirements of children with special needs, which limit their ability to participate in social, economic, and political life as well as their educational opportunities. These children are almost those in the world who are neglected in the school. They experience barriers continuously to their education caused by stigma, discrimination, and the common negative response of decision-makers to include disability in educational programs (UNICEF). It is possible through inclusive education to make it sure that each child has the same opportunity to learn, study, and gain the skills they need to succeed. Every child with special needs must attend the same schools and classrooms. Real opportunities for learning are needed for people who have traditionally been neglected, such as children with special needs and learners of minority languages. Despite the slow pace of change, inclusive systems admit the various efforts that students from all backgrounds make in the classroom and facilitate a variety of groups to survive and develop beside one another. It demands all kinds of social changes. The building must be modernized, instructional materials for the kids must be easily available, and teachers need to be trained. Stigma and racism must be eliminated locally, and the advantages of inclusive education must be highlighted. Data must be frequently gathered and analyzed, laws and policies must be in agreement with the Convention on the Rights of Persons with Disabilities, and governments have to be confident that the services they provide to children are effective. The ultimate aim of provision of these services to the children studying in segregated system must be to prepare them for the placement in inclusive schools. For the purpose, socialization skills are first to be targeted as effective social awareness, social communication, social motivation and social cognition provide as lifelong learning of these children with ASD.

Literature Review

Autism spectrum disorder (ASD), is a lifelong phenomenon, contain mild to severe social and communication ability impairments. Children with ASD also display repetitive pattern behavior as a symptom. However, unless a child is not capable to meet social, educational, occupational, or other significant needs of living in a normal life, social deficiencies and behavioral patterns may not be recognized as symptoms of ASD (Maenner et al., 2020). It is surprising that high prevalence of male children with ASD within 15 years in comparison to females, who suffer ASD three to four times more frequently (Lai et al., 2015). Emotional disability is a roadblock in the path of children with ASD engaging in appropriate social functioning (Baron-Cohen & Wheelwright, 2004). As reported by Leaf (2017), children with ASD have social impairments, varying from a lacking of tolerance for peers to promoting and encouraging social acceptance. Children with ASD who do not develop appropriate social skills are more likely to face negative outcomes like depression, rejection, isolation, and even suicidal

ideation. Social interactions are affected by social skill limitations at home, school and in the community. Having low number of friendships, poor quality of friendship, inappropriate social commitment, social engagement during unstructured times (such as lunch or recess at school), and more discriminated attitudes are frequent among children with ASD (Calder, Hill, & Pellicano, 2013; Humphrey & Symes, 2011; Kasari et al., 2011; Mazurek, Kanne, & Wodka, 2014). According to Bauminger and Shulman (2003), children with ASD are unable to form lasting relationships and are ultimately unable to develop social skills like helping, cooperating, and sharing.

For children with ASD, social skill is most affected area, and it is extremely difficult to communicate with those who don't possess these skills. Making communication perfect, autonomous, and independent, social abilities are essential for success in life at various settings, including the home, workplace, and educational institution (LaGasse, 2014). Children with ASD exhibit impaired cognition, social communications or interactions, strange behavior, and lack of social or emotional balance in addition to cognition impairment (Wilkinson, 2014). Social skills are used to interact with one another by signals, statements, and general appearance, both verbally and nonverbally. Socialization is the method of learning these skills (Reichow et al., 2012). Absence of social skills in children with ASD can result in social anxiety, communication and conversation challenges, self-isolation, poor team involvement, and unsatisfying relationships with peers. Knowing the readiness of children for inclusive education at their current level is important for the inclusion process. The social competence level of ASD adolescents must also be assessed. Without knowing the social skills of the children who are prepared, we can't include them. We have to find out how long they have attended the special school and what problems they are now struggling with. We cannot make kids competent, independent, and self-governing in their homes, societies, and jobs without a certain level of social skill development. Even though the number of children with autism is growing, there are extremely few to no social skills training programs offered by our special education institutions (Ahmad & Bano, 2020), despite the fact that successful integration of children with ASD into many societal settings, like the home, school, and workplace, can be advantageous (LaGasse, 2014).

Research Objectives

The study was aimed:

- To determine the social skill deficit level of the children with ASD studying in special education schools in Punjab and ICT.
- To compare the effects of different demographic variables on social skill deficit level of children with ASD in Punjab and ICT.

Hypothesis

Ho: There is no significant difference in the social skill deficit level of children with ASD with respect to change in parental qualification.

H_1: There is no significant difference in the social skill deficit level of children with ASD with respect to change in economic status.

H_2: There is no significant difference in the social skill deficit level of children with ASD with respect to change in years of enrolment in special school.

Theoretical Framework

According to the theory of mind science, there are three stages involved in the formation of social skills: agent detection, agent identification, and anticipation to agent behaviors. All people go through these three stages of social skill development, either he/she has a disability or not. They develop fundamental imitation, facial detection, eye detection, gaze following, and other skills in the first stage. They learn how to follow basic coordination, shared attention, mentalization, etc. in the second stage. They discover

complex interaction and cooperation in the third stage. The growth of social skills in children with ASD is stopped at the early stages of development, so it is crucial to track the growth of these kids and to find out their social awareness and social motivation level which leads to increase of social cognition and social communication skills. They struggle with mentalization, eye contact, joint attention, face recognition, and other skills (Soto-Icaza et al., 2015).

Research Methodology

The study was descriptive in nature with survey research design.

Population and Sample

Population of the study was the students with ASD studying in public, private and semi-govt institutes in ICT and Punjab special education schools. All the confirmed and diagnosed children with ASD in these institutes who had gone through the assessment criteria by the psychologists were the population of the study. All students were taken as sample of the study Age range of the ASD children was 5-15 years.

Tool of the Study

The Social Responsiveness Scale, Second Edition (SRS-2) school age form age range 4-18 years measures the social ability of children (Constantino & Gruber, 2005). The SRS-2 consists of a questionnaire of 65 items on a 4-point Likert Scale divided into five subscales i.e., social awareness, social cognition, social communication, social motivation, and restricted interests & repetitive behavior. The individual having score 60-65 associated with mild level of deficits in social interaction, 66-75 moderate and >76 is considered severe level of deficit in social interaction of ASD. The reliability was reported with high internal consistency (0.88–0.89), test-retest reliability (0.82–0.83). This form was filled by the psychologist/teachers of the children with ASD studying in Punjab and ICT.

Pilot Testing

Reliability of the tool (SRS-2) was established in Pakistani context. For this purpose, Urdu translation for Social Responsiveness Scale (SRS-2) was done by the researcher with the guidance of supervisor. Validation of the Urdu statements of all items of SRS-2 was done by four experts having M.Phil in Urdu and Masters in English. Suggestions were incorporated for items no 8, 9, 13, 16, 17, 19, 25, 36, 39, 40, 42, 52, 56 and 64 in SRS-2 The final form was containing both English and Urdu statements of each item in soft and hard form as well was finalized for the data collection. The reliability and validity of the questionnaire was calculated through pilot testing and valued of Cronbach's alpha was 0.713.

Process of Data Collection

The version containing both English and Urdu statements of items of SRS-2 was delivered in both soft and hard form by the researcher. Data was collected from the psychologist/teachers of ASD working in schools of children with ASD for the sampling. Filled forms were collected in both soft and hard version. List of students with mild, moderate and sever level of social skill deficit was prepared. After the data collection the data was analyzed with the help of SPSS.

Findings/Results

The table below shows the details of the schools from where the data of 194 children with ASD was received. Forms (298) were sent through WhatsApp, google form and Postal services to other schools also but the response was not obtained. The response rate was 65%.

Table 1: *List of public, private, and semi-government institutes for children with ASD in ICT and Punjab.*

S. No	Name of Institute	Region	No of Students with ASD	No of responses
1	Rehabilitation Centre for Children with Developmental Disorder (RCCDD), H-8/4 Islamabad.	ICT	25	10
2	National Training Centre for Special Persons, G-9/2 Islamabad.	ICT	07	07
3	Shadab, Gulrez near Swan Adda, Rawalpindi.	Punjab	05	Nil
4	Army special Education centre, Fort road Rawalpindi.	Punjab	30	30
5	Chambeli Institute for Mentally Challenged, Rehmanabad Rawalpindi.	Punjab	20	15
6	Govt special education centre, Kallar Syedan	Punjab	02	02
7	Govt special education centre, Gujar khan	Punjab	10	09
8	Govt special education centre, Kahota	Punjab	03	Nil
9	Govt special education centre, Kotli Sattiyan	Punjab	02	02
10	Autism Resource Centre (ARC), Chohar Chowk Rawalpindi.	Punjab	40	35
11	Well Being Centre (WBC), Mid City Apartments, Khokhar Road Azeem Town, Rawalpindi	Punjab	15	12
12	Step to Learn, I-8 Islamabasd	ICT	10	Nil
13	ASAS International School, Nazim-ud-Din Road, F/8-3 Islamabad.	ICT	10	Nil
14	Care for special persons, I/8 Islamabad	ICT	05	Nil
15	Umed-e-Noor center for special children, H/8-1 Islamabad.	ICT	15	10
16	Bahria College of Special education, Shangrilla Road, Naval Complex, E-8 Islamabad.	ICT	12	08
17	Behavior and Special Education Services, (BASE), E-9 Islamabad.	ICT	20	17
18	Center for Profound Education (CPE), 151-A Sir Syed Avenue, Gulrez 6 Rawalpindi.	Punjab	10	Nil
19	Shining Star Special Education school, Jhelum	Punjab	02	02
20	Ali Rafay Early Intervention Centre (AREIC), Rawalpindi	Punjab	30	27
21	Rising Sun Institute for ASD, Lahore	Punjab	20	03
22	Govt Special Education Centre, Millat Town, Faisalabad	Punjab	05	05
	Total		**298**	**194**

Table 1 elaborates the description of institutes having diagnosed number of responded children with ASD. Out of which 27% were in ICT and 73% in Punjab. Most of the schools (58%) were in private institutes in Punjab as compared to government institutes.

Table 2: *Gender and age wise detail about the ASD participants of the study*

Gender	Frequency	Percentage	Age	Frequency	Percentage
Male	156	80.4%	4-8	99	51
Female	38	19.6%	9-13	51	26.3
-	-	-	14-18	37	19.1
-	-	-	19-23	7	3.6
Total	194	100	Total	194	100

Table 2 describes the gender wise details of ASD children that the male participants were 60% more than the female. The ratio of male to female children with ASD is 4:1. More than fifty percent of the sample was falling in the range of 4-8 years.

Table 3: *Description of years of enrollment in special school and monthly income of parents of children with ASD*

Years	Frequency	Percentage	Monthly Income	Frequency	Percentage
1	50	25.8	15000-30000	50	25.8
2	32	16.5	31000-50000	61	31.4
3	28	14.4	51000-75000	38	19.6
4	21	10.8	76000-100000	30	15.5
5	17	8.8	101000-125000	6	3.1
6	15	7.7	126000-150000	9	4.6
>6	31	16	-	-	-
Total	**194**	**100**	**Total**	**194**	**100**

Table 3 Illustrates that it was observed more than fifty percent of the children with ASD had enrolment (1-3) years in different institutes for the children with ASD and 31% of the participants had been enrolled for 5 or more than five years. Only 8% parents had high economic level, 35% were spending middle economic level and 57% parents were facing with low economic level in their lives.

Table 4: *Description of parents' Qualification of children with ASD*

Parents Qualification	Fathers Frequency	Percentage	Mothers Frequency	Percentage
Illiterate	5	3	36	19
Primary	11	6	23	12
Matric	37	19	41	21
FA	27	14	27	13.9
BA	43	22	31	16
MA	59	30	32	16
MBBS	12	6	4	2.1
Total	194	100	194	100

Table 4 delineates that the qualification of 50% of the fathers were found graduate or above. It was observed that 36% of them were found masters or above. Qualification of mothers children with ASD was matriculation or below the matriculation qualification. One third was graduates or masters.

Table 5: *Description of number of siblings and Birth order of children with ASD*

No of Siblings	Frequency	Percentage	Birth order	Frequency	Percentage
None	6	3.1	1	76	39.2
1	21	10.8	2	62	32
2	58	29.9	3	41	21.1
3	66	34	4	9	4.6
4	27	13.9	5	2	1
5	10	5.2	6	4	2.1
6	6	3.1	7	Nil	-
Total	**194**	**100**	**Total**	**194**	**100**

Table 5 describes the number of siblings of the children with ASD and their birth order. 64% of the children had 2 or 3 siblings and 71% of the children had 1st or 2nd birth order.

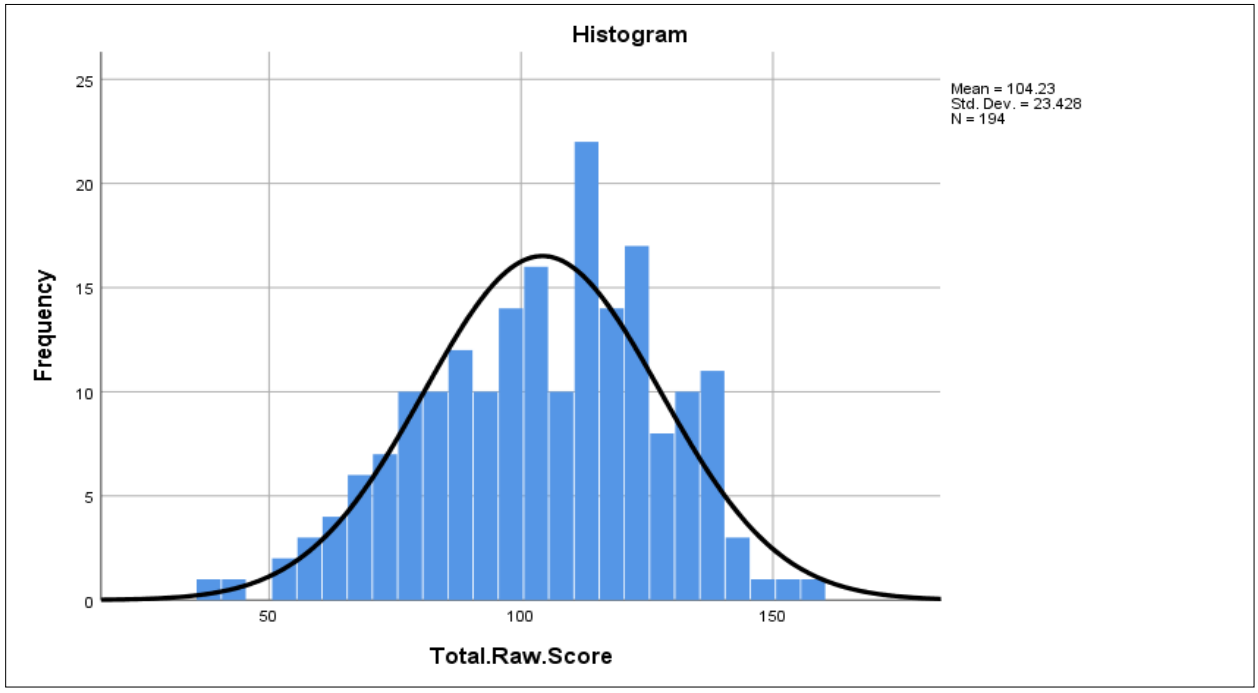

Figure 1: *Social Skills Raw scores distribution.*

The distribution of the Raw Scores shows almost normal distribution with mean = 104.23 and SD = 23.428.

Table 6: *Total T-Score of each respondent & Social Skill deficit level*

Class Boundary	Frequency	Percentage	Social Skill level
46-50	1		
51-55	4	6.2%	Normal
56-60	9		
61-65	22	11.9%	Mild
66-70	30		
71-75	36	35%	Moderate
76-80	44		
81-85	31	46.9%	Severe
86-90	17		
Total	194	100	

Table 6 describes the total scores of children with ASD. Scores were converted according to criteria given in tool (SRS-2). Almost 47% of the students had severe level of social skill deficit and one third of the students had moderate level of social skill. 12% children with ASD had mild level of deficit and only 6% fall in the normal range. Following the cut-point were used to interpret the social skill deficit level of the children with ASD.

- <59 = Normal
- 60-65 = Mild
- 66-75 = Moderate
- >76 = Severe

Table 7: *Mean scores of Subscales of SRS-2*

Subscales	Social Awareness	Social Cognition	Social Communication	Social Motivation	Restricted Interest & Repetitive Behavior
Mean	64.28	69.41	73.85	70.30	77.40
SD	10.395	10.472	8.672	9.667	10.330

Table 7 elaborates the social skill deficit mean score in five subscales. It was observed that the children with ASD had to face more social skill deficit in social communication with mean score 73.85 as compare to other subscales.

Table 8: *One Sample t-test of Subscales of SRS-2*

Subscales	Social Awareness	Social Cognition	Social Communication	Social Motivation	Restricted Interest & Repetitive Behavior
T	86.131	92.322	118.601	101.298	104.365
Sig	0.000	0.000	0.000	0.000	0.000

Table 8 shows that the significant difference among the children with ASD was found in all the five subscales of social skill deficit. In order to further compare the causes significant difference analysis with demographic variables was carried out.

Table 9: *Analysis of data by using ANOVA on the basis of father's qualification of children with ASD.*

Comparison of scores	Df	Mean Square	F	Sig
Between Groups	6	1.900	2.527	.022
Within Groups	187	.752		
Total	193			

Significance level **P<.05

Table 9 reflects that the significance value is less than the standard value of 0.05, so results reflect that there was significant difference in social skill deficit level of children with ASD with respect to their fathers' qualification.

Table 10: *Post Hoc analysis of father's qualification*

MBBS	Qualification	Mean difference	Sig	Lower Bound	Upper Bound
	Illiterate	-.783	.091	-1.69	.13
	Primary	-1.038*	.005	-1.75	-.32
	Matric	-1.070*	.000	-1.64	-.50

FA	-.880*	.004	-1.47	-.29
BA	-.816*	.004	-1.37	-.26
MA	-.736*	.008	-1.28	-.19

The Post Hoc analysis was carried out and it was found that there was significant difference between the highly qualified (MBBS) and low qualified fathers. Further exploration is required so that we can get the knowledge that whether the scores of highly qualified mothers are different from low qualified mothers, or not.

Table 11: *Analysis of data by using ANOVA on the basis of mothers' qualification of children with ASD.*

Comparison of scores	Df	Mean Square	F	Sig
Between Groups	6	3.320	4.700	.000
Within Groups	187	.706		
Total	193			

Significance level **P<.05

Table 11 reflects that the significance value is less than the standard value of 0.05, so results reflect that there is significant difference in mothers' qualification.

Table 12: *Post Hoc analysis of mothers qualification*

MBBS	Qualification	Mean difference	Sig	Lower Bound	Upper Bound
	Illiterate	-2.000*	.000	1.03	2.79
	Primary	-2.098*	.000	-2.87	-1.13
	Matric	-2.213*	.000	-3.00	-1.20
	FA	-2.083*	.000	-3.08	-1.34
	BA	-1.782*	.000	-2.97	-1.20
	MA	-1.906*	.000	-2.66	-.90

The Post Hoc analysis was carried out and it was found that there was significant difference between the highly qualified (MBBS) and low qualified mothers.

Table 13: *Analysis of data by using ANOVA on the basis of monthly income.*

Comparison of scores	Df	Mean Square	F	Sig
Between Groups	5	1.747	2.293	.047
Within Groups	188	.762		
Total	193			

Significance level **P<.05

Table 13 reveals that the significance value is less than the standard value of 0.05, so results reveal that there is significant difference in social skill scores of children with ASD.

Table 14: *Post Hoc analysis of monthly income*

	Monthly income in Rs.	Mean difference	Sig	Lower Bound	Upper Bound
126000-150000	15000-30000	-.904*	.005	-1.53	-.28
	31000-50000	-.641*	.041	-1.26	-.03
	51000-75000	-.681*	.037	-1.32	-.04
	76000-100000	-.644	.054	-1.30	.01
	101000-125000	-.111	.809	-1.02	.80

The Post Hoc analysis was carried out and it was found that scores of the children whose parents belonged to high (126000-150000) or middle (101000-125000) socio economic status was significantly different from the score of the children whose parents were in the category of low (15000-30000) socio economic status.

Mean difference analysis was also carried out with other demographic variables i.e., age, gender, years of enrolment in institute, no of siblings and birth order. No significant difference in the social skill deficit level of the children with ASD was found with these variables.

Table 15: *Analysis of data by using ANOVA on the basis Years of enrolment*

Comparison of scores	Df	Mean Square	F	Sig
Between Groups	3	1.221	1.563	0.200
Within Groups	190	0.781		
Total	193			

Table 15 describes those years of enrolment in an institute was not found significant different. It didn't affect either the child has spent one or more years in the school.

Discussion

Autism Spectrum Disorder (ASD) is a developmental disorder of a varying severity that affects social, communication skills and behavior of children. It has an impact on kids' behavior and communication skills. Although symptoms typically start to show in the first two years of life, the wide range of illnesses covered by the spectrum can be identified at any stage of life (DSM-V, 2013). A study in Malaysia revealed that 6% of the children with special needs were ASD and social deficit was a challenge for these children to be included with non-disabled children (Yeo. & Teng, 2015). This study aims to identify the social skill deficit level of children with Autism Spectrum Disorder (ASD). Major finding of the current study was that majority of the children (82%) were having moderate to severe level of social skill deficit and significant difference was found in five subscales of social skill. The significant difference was found due to parental qualification and financial status per month. One of the local studies describes that more than fifty percent students were facing moderate to severe deficit in social skill (Fazil, 2021). The ratio of male to female children with ASD in the current study was found to be 4:1 whereas the reported prevalence rate of children with ASD of male to female is 3:1 (Looms, 2017). The findings of a study done in Korea were that no significant difference was found in social skill scores with respect to age. Same result was found in this study. Moreover, no significant difference in scores of social skill level was found due to gender variation. Percentage of male children with ASD (79%) was higher than the female (21%). It means that it doesn't matter either the child is male or female but the deficit was found almost same for both. It also doesn't matter that either the age of the child with ASD is under the age of ten years or above yet they have to face the problem of lack in social skill. A Korean study depicts that the age range of the children did not influence the SRS-2 scores in subscale of social skills (Cheon, 2016).

Conclusion

Half of children with ASD were suffering from moderate and one third was suffering from severe level of social skill deficit. A few of them were in normal range and some of them with mild level of social skill deficit. Whether the child is receiving special education services for 1 year or 5 years, it does not make any difference in their score of social skills therefore we can conclude that existing system again was unable to deal this area therefore the new strategies are required to be explored. Only children belonging to families of highly qualified parents and high socio-economic statues are having good scores of social skill level.

Recommendations

We need to review the teaching strategies and activities that why they are not addressing area of social skill. Parental education, teacher's training programs, awareness campaigns or new methods may be

designed. Our teachers can use the new methods to develop the social skill level of the children with ASD. Parental qualification was found the significance difference among the social skill deficit level of the children with ASD; hence it is needed to improve the literacy rate. Government may determinate such studies among the people so that the parents should focus on the study. NGOs may take positive steps for this purpose. Policy makers can play a vital role in this regard. Further study is recommended to get the data for other areas of the country as this study only depicts for the ICT and Punjab.

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Conflict of Interest

Authors declared no conflict of interest.

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ORCID iDs

Imran Nazir [1] https://orcid.org/0000-0003-2748-399X
Hina Noor [2] https://orcid.org/0000-0003-1132-3641
Misbah Waqar [3] https://orcid.org/0000-0001-6766-4053

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