

Effects of Multi-therapy Approaches on Social Skills and Communication Development among Children having Autism Spectrum Disorder

Asmaa Azeem* Rukhsana Bashir** Zikra Faiz*** Waqar Younas Warraich****

*Assistant Professor Special Education, Department of Education, University of Management and Technology
asmaa.nouman@umt.edu.pk

**Assistant Professor, Institute of Special Education, University of the Punjab rukhsana.dse@pu.edu.pk

***Lecturer Special Education, Department of Education, University of Management and Technology zikra.faiz18@gmail.com

****M.Phil Scholar, Department of Mass Communication, University of Central Punjab, Lahore, Pakistan
waqaryounaswarraich@gmail.com

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Abstract: The casual comparative research design of positivism paradigm (quantitative approach) was adopted to examine the effects of multiple-therapies on social skills and communication development among children having autism spectrum disorder (ASD). The (n=108) therapists were selected randomly from special institutions of Punjab Province of Pakistan, who were providing multi-therapies treatment to autistic children. The researchers developed a questionnaire to collect data regarding occupational therapy, play therapy, cognitive behavior therapy, and speech therapy, social skills, and communication development. The results showed applied behavior analysis therapists use cognitive behavior therapy and reinforcement techniques to change the behavior of the children, develop social skills, and work effectively. While speech therapists improve vocal streaming of the children with ASD that can pronounce single or four words sentences after therapy. Moreover, occupational therapy improves the fine and gross motor skills of ASD children. Linear regression analysis results indicated that all four therapies have a significant effect on ASD children's social skills and communication development. It is recommended that therapists should give therapies twice a week.

Keywords: Autism spectrum disorder, speech therapists, occupational therapists, psychologists

1. Introduction

Children with autism usually encounter many issues in critical areas of developmental milestones such as vocal and other communication domains, socialization and related personal interactional problems imaginary/creative play, and also low to higher levels of concerns in sensory processing. Hence, autism spectrum disorder (ASD) incorporates a few neurological issues that influence conduct, the capacity to impart, communicate and play in socially fitting ways. Checked quantitative and subjective contrasts exist in

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the play of youngsters with mental imbalance range issues. An ongoing report from the Centers for Disease Control and Prevention gauges that 1 of each 150 youngsters conceived in the United States is on the mental imbalance range scale (Ramey & Ramey, 2006). ASD is an exceptionally pervasive neurodevelopmental issue that impacts one in 110 children in the United States, and the American Academy of Pediatrics has endorsed that all children be screened for ASD at their 18 and multi-year good infant registration. In Canada, the prevalence rates of ASD children are 6.5 per 1000. The ratio of known those with ASD is around 10% to 15%, with higher commonness in people with lower intellectual capacities (Burstyn & Sithole, 2010). In this manner, the requirement for viable medications for ASD has never been increasingly noticeable. There are not very many approved restorative mediations that address the inside gathering of three autism side effects, which incorporate subjective impedances in social association and correspondence and a limited scope of practices and activities. Direct mediations, in any case, can be ground-breaking for improving the results of children with ASD (Warren et al., 2011). Behavioral interventions and therapies for kids with ASD and presumed that both far-reaching and focused on social intercessions can be compelling in improving correspondence, social aptitudes, and the board of issue conduct for kids with ASD. There is a new enthusiasm for creating mediation for babies in danger of ASD (Brosnan & Healy, 2011). People who have ASD usually experience tension about social collaboration and social circumstances.

Cognitive behavior therapy (CBT) is a prescribed treatment for social tension (ST) in the non-ASD populace. Treatment regularly includes intellectual mediations, symbolism-based work, and for certain people, social intercessions. Regardless of whether these are helpful for the ASD populace is misty (Spain et al., 2017). ASD in children delays communication and verbal skills. With the help of some medication and treatment, many changes occur in ASD children (Weitlauf et al., 2014). Lack of social functioning and problems with anxiety is a sign of autism. In autism, social skills training is included with a variety of techniques such as group intervention. Drama therapy is very commonly used for autism. To practice social skills within the children of autism and this communication, emotional problems are carried out in children with autism (Corbett et al., 2011). Children with autism spectrum disorder also have a comorbid disorder that causes functional impairment. A modular cognitive behavior therapy program test has been done inside this study for children with autism. The results of the study show that 78.5% of the CBT gathering met Clinical Global Impressions-Improvement scale criteria for positive treatment reaction at post-treatment when contrasted with just 8.7% of the shortlist gathering. CBT additionally beat the shortlist on symptomatic results and parent reports of kid uneasiness, however not kids. Utilized in this examination is one of the primary adjustments of a proof-based treatment for kids with a chemical imbalance range issue. Reduction of uneasiness issue has all the earmarks of being a feasible objective among advanced kids with chemical imbalance (Wood et al., 2009).

There is a lack of writing on social skills therapy for children with autism spectrum disorder, uncovering a pressing requirement for extra research. Past research has concentrated on the utilization of little groups or single-case investigation plans. The present investigation looks at the adequacy of a social skills therapy program for school-age kids ages 11 through 18. The program utilizes art therapy and cognitive behavior therapy in a gathering treatment organization to widen and extend the cutting-edge systems utilized in helping kids with social formative issues to improve their social abilities. Scores uncovered a critical improvement in attestation scores, combined with diminished disguising practices, hyperactivity scores, and issue conduct scores in the children (Epp, 2008). The autistic spectrum range

includes a wide scope of scatters described by obstruction with correspondence and social collaborations and roundabout examples of intrigue, exercises, and conduct. Pervasive developmental disorders (Pdd) are an analytic classification, as indicated by the DSM-IV (American Psychiatric Association, 1994), which incorporates the ASD. The conditions incorporated into the demonstrative classification of Pdd are an autistic spectrum, Rett disorder, youth dis integrative issue, Asperger's disorder, and inescapable formative issue not generally determined (Al-Shammari, 2006).

Behavioral interventions are very effective for adolescence with an autism spectrum disorder. The primary randomized controlled preliminary (RCT) of an extensive early intercession for babies with ASD showed gains in language, intellectual capacities, and versatile conduct. Behavioral interventions are powerful for improving language, psychological abilities, adaptive conduct, and social aptitudes, and lessening nervousness and animosity (Dawson & Burner, 2011). The essential job of school-based occupational therapy is to help children with uncommon needs in taking part in and boosting their presentation in an instructive environment. For small kids with autism spectrum disorder (ASD), the control of understudy can be particularly mind-boggling and testing. The class condition displays a tangible rich background of commotion and development against which students must take care of academic action and schedules (Umeda & Deitz, 2011). Gattino et al. (2011) stated that autism is an inescapable advancement issue, portrayed by impairment in three fundamental zones: correspondence, social connection, and limited, dreary practices and interests. In music treatment inquire about; one of the principal issues is the impact of music treatment on correspondence troubles of kids with autism. Kids with autistic range issues (ASDs) present problems particularly vacant correspondence. The backings of early mediation projects have advanced as ameliorative, to help the upsurge of kids with exceptional needs. Regardless of whether the expansion is because of administrative help or progression in identification techniques, the multiplication of intercession projects has powered evaluative research (Ramey & Ramey, 2006). To improve working for a large number of youngsters with ASD, facilitated and coordinated administrations are required. To play of youngsters with autism spectrum issues is more monotonous and less adaptable and expounds than neuron typically creating companions, thus they experience trouble in playing with other kids (Hess, 2009).

Most of the studies and literature are based on the effectiveness of therapies on autism spectrum disorder children and the effect of therapies in these children. This study is very unique to investigate the effects of social skills and communication on therapies for students with an autism spectrum disorder. This study also checks the relationship of therapies and social skills and communication on ASD children. Speech therapists, applied behavior analysis therapists, and occupational therapists help to develop social communication and behavior modification in ASD children. Speech therapists enhance the vocal skills in ASD children. Applied behavior analysts with the help of ABELLS protocol change the behavior of a child, increase the on-seat behavior and attention span in a child. Occupational therapists improve the ASD child's gross motor and fine motor skills.

Therapies help to change the behavior of ASD children. Therapists modify the behavior of ASD children and develop different skills like communication, academics, socialization, eye coordination, running, language skills, etc. Today, in such a challenging era we need to upgrade our therapies to get better results and develop more social skills and development in ASD children. Before selecting the topic, researchers personally visited special and general education schools of different districts of Punjab. After the searching, it is finally seen that in special education centers sends parents their children because they think

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he or she is disabled and cannot do anything in whole life. Even teachers, psychologists, and therapists cannot play their roles positively as they play. Therapies in special centers on ASD children are very weak that's why the researcher chooses this topic to cover this gap and find out the solution. This study was undertaken because it was felt that therapies play an important role during counseling and medication of ASD children in clinics. The purpose of this study was to examine the relationship between the effects of therapies on ASD children's social skills and communication. The objective of the study was to examine the effects of multiple therapies on the social skills and communication of students with an autism spectrum disorder. The research questions of the study were that what is the relationship between social skills and communication and therapies on the students with autism spectrum disorder? Is there any significant difference between social skills and communication and therapies on the students with autism spectrum disorder based on demographic variables i.e. male and female and public and private school?

This study will be very helpful for pre-psychologists, school principals (to increase knowledge when hiring therapists for students with an autism spectrum disorder in special institutions that how different therapists work differently), and in-service and pre-service speech therapists, occupational and applied behavior analysis therapists to further improve the therapies strategies. Therapists will be adapt new innovative collaborative techniques and develop social and cognitive behavioral skills in ASD children. Results of the study may be significant for the professional therapists and team members to promote therapeutic services in every public and private special institution. Through therapies teachers and therapists enhance the language and communication skills of ASD children. It may be significant for education to enhance the workshops and seminars in teacher training institutes. Future researchers may get benefits from the results of this study. Researchers research ASD children's cognitive development and counseling to see the changes in ASD children.

2. Research Methodology

The casual comparative research design of a quantitative approach was adopted to examine the effects of multiple therapies on social skills and communication development among children having autism spectrum disorder (ASD). All therapists who have academic and professional qualifications in clinical psychology, speech therapy, and occupational therapy were considered as the population of the study. Hence inclusion criteria of the participants were therapists working in public and private sector special education institutes as therapists, having two years of experience of giving therapies to children with ASD.

Sample

The random sampling technique was used to select 108 participants from the special education institutions of three districts of Punjab (i.e., Lahore, Gujranwala, and Faisalabad) because in these districts all therapists were appointed to teach all types of disabled children to improve and change the behavior, speech and sensory issues in children. While a cross-sectional survey method was used to collect data from speech therapists, psychologists, and occupational therapists.

Instrumentation

The researchers developed a questionnaire that comprised of four parts (i.e. demographic information, speech therapist's knowledge, Occupational therapist's knowledge, and Psychologist's perspectives). The first part consisted of demographic information of the participants such as age, gender, academic qualification, professional qualification, school, therapy experience in years, and field of the therapist. While the second part was about the speech therapist's knowledge (working criteria with special

children to improve communication skills) consisted of 10 items. Moreover, the third part was related to occupational therapist’s knowledge (improve fine motor and gross motor skills for social development) consisted of 12 items, and the last part was about psychologists’ perspectives (different therapies used during counseling) consisted of 13 items. All statements were validated by special education experts and suggested few statements should modify before ensuring reliability. The reliability was calculated at 0.869 which was accurate according to the criteria. Hence, the revised instrument consisted of 35 items which were constructed on five-point-rating scales range strongly disagree to strongly agree.

3. Data Collection and Analysis

Researchers informed the participants they withdrawal anytime if they feel they are not feeling comfortable or if they feel statements of the instruments are not clear. Each questionnaire was filled within 20 minutes. The study's purpose was to examine the effects of multiple therapies on the social skills and communication development of students having autism spectrum disorder. Hence, regression analysis was applied. Moreover, t-tests were also applied to find out the difference between male and female therapists and public and private schools’ differences about the effect of therapies for ASD children.

Results

The results show that therapies play an important role to develop social and communication skills in autism spectrum disorder children. Psychologists use cognitive behavior therapy, play therapy with reinforcement techniques to change the behavior of the children, develop skills and work effectively. Psychologists increase the on-seat behavior timing, eye contact and decrease the tantrum of a child. All public and private sector special schools use all therapies for ASD children. Speech therapy is also effective but, in some cases, and according to the level and severity of the children. Speech therapists improve the vocal streaming of children with ASD. Therapies' styles change according to the child's disability and severity level. Children with ASD can pronounce single or four words sentences. Occupational therapy uses OT therapists during the session to improve the motor skills of an ASD child. A child is fully able to hold and point things to another person. Therapies improve the ASD children handshake skill, sitting behavior, repetitive behavior how to smile, coordinate with other, right and wrong concept. All the skills develop in a child through different therapies. Psychologists use CBT therapy that helps to reduce the anxiety level in ASD children. Both male and female therapists have the same perceptions and thinking about therapies and their effectiveness. Play therapy helps to maintain ASD children's focus on the thing. This therapy helps to engage the child in different activities with the help of play. Therapists through play therapy check the interest of a child and taught by playing the concept of coloring and counting, sorting, follow instructions anything else.

Table 1

Independent Sample T-Test on Gender

Factors	Male (42)		Female (66)		<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Occupational Therapy	24.54	5.433	24.03	4.627	106	.529	.465	0.101
Play Therapy	28.78	9.264	27.28	4.295	106	1.137	.095	0.208
Cognitive Behavior Therapy	31.85	6.602	32.07	6.773	106	-.165	.855	0.033
Speech Therapy	12.50	3.365	12.80	2.281	106	-.558	.045	0.104
Overall Therapies	136.30	23.998	136.30	12.563	106	.893	.087	0.001

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The table 1 shows the results of independent sample *t*-test that there was no significant difference in therapies ASD children social development on the basis of gender in all four sub-scales and overall effect of therapies $t(106) = .529, p = .465$; $t(106) = 1.137, p = .095$; $t(106) = -.165, p = .855$, $t(106) = -.558, p = .045$ and $t(106) = .893, p = .087$ respectively which were higher than alpha 0.05. Male and female both used therapies equally. Both believed that therapies effect the social skills and communication of ASD children.

Table 2

Independent Sample T-Test on School

Factors	Public (44)		Private (64)		<i>df</i>	<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Occupational Therapy	23.04	4.685	25.04	4.977	106	2.102	.870	0.414
Play Therapy	28.04	9.142	27.75	4.327	106	.225	.175	0.041
Cognitive Behavior Therapy	35.86	5.223	29.32	6.279	106	5.681	.260	1.132
Speech Therapy	13.47	2.619	12.14	2.713	106	2.551	.735	0.499
Overall Therapies	140.54	19.408	135.45	16.549	106	1.464	.276	0.282

The table 2 shows the results of independent sample *t*-test that there was no significant difference in therapies ASD children social development on the basis of public and private schools in all four sub-scales and overall effect of therapies $t(106) = 2.102, p = .870$; $t(106) = .225, p = .175$; $t(106) = 5.681, p = .260$, $t(106) = 2.551, p = .735$ and $t(106) = 1.464, p = .276$ respectively which were higher than alpha 0.05. Public and Private both schools used therapies equally. Both schools used all therapies to treat with ASD children.

Table 3

Regression Analysis for Effect of Therapies

Factors	B	R ²	β	F	t	p
Occupational Therapy	1.30	.530	.728	119.502	3.145	.000
Play Therapy	.265	.040	.201	4.457	9.270	0.02
Cognitive Behavior Therapy	-.220	.028	-.167	3.305	11.566	.014
Speech Therapy	.283	.008	.088	.825	9.209	.366

Table 3 shows the effect of therapies (independent variable) on autism spectrum disorder children's social skills and communication (dependent variable) through linear regression analysis. Linear regression results were calculated to see the relationship of social skills and communication on ASD children based on therapies. A significant regression of occupational therapy was found ($F(1,106) = 119.502, p < .000$), and with an R^2 of .530, with 53% of participants confidently said that occupational therapy strongly affects the social development of ASD children. Participants predicted social development is equal to $9.247 + 1.300$ (therapies). A significant regression on play therapy was found ($F(1,106) = 4.457, p < .002$), and with an R^2 of .040, with 40% of participants confidently said that play therapy strongly affects the social development of ASD children. A significant regression on cognitive behavior therapy was found ($F(1,106) = 3.305, p > .014$), and with an R^2 of .028, with 28% of participants confidently said that cognitive behavior therapy strongly affects the social development of ASD children. A significant regression on speech therapy was found (F

(1,106) =.825, $p>.366$), and with an R^2 of .008, with 82% of participants confidently said that speech therapy strongly affects the social development of ASD children.

4 Discussion

The study tended to investigate the effects of social skills and communication on therapies. This study also investigates the male and female therapist's perceptions based on demographic information. This study showed that with the help of multi-therapies approaches the therapists may develop the social and communication skills in ASD children also discussed through some training and therapies create social skills in children. Social skills intervention develops positive behavior in children (Arter et al., 2012). The results of the study revealed that occupational therapy plays an important role in the early intervention of ASD children. Through this therapy Home sitting, hand coordination physical activities, and brainstorming develop in ASD children. Fine motor skills and gross motor skills improve through this therapy. Therapists provide different services and control their behavior through different approaches to therapy. Occupational therapy helps to participate autistic children in different social activities like toileting, feeding, dressing, right and wrong). With the help of occupational therapy child with ASD perform their daily life task like eat food independently, change the dress to use some dress changing techniques, change the setting of the room to move independently. In autism, children have mostly sensory issues like tactile issues, vestibular issues, prospection issues, and hand function issues. All OTs choose therapy according to the child's level. They never apply the same technique in all ASD children. OT also uses assessment tools to see the fine motor and gross motor skills in children. There are also some other tools for finding out the sensory issues. OT designs activities in which the child can do and participate easily. Foam box, pegboard activity, lacing, and beading use for hand function movement. Pinch grip, tripod, etc. use for gross motor skills. Functional skills are developed then task change into the complex task to increase more functional skills. If the child can move right and left and is not able to jump then OT starts working on jumping. Jumping is a currently working task and moving is considered a known task. OT does not work on how to write in a copy they work on gripping and holding like how to hold the pencil properly.

Some checklists use therapies before starting therapies: Autism checklist Childhood Autism Rating Scale (CARS), Sensory Profile and Diagnostic criteria for autism spectrum disorder- DSM-IV. Results show that therapies have 79% effects on ASD children's social skills and communication. All the participants strongly believed that play therapy, occupational and CBT therapies develop the eye to eye contact skills, peer groups, and relationship skills, and the sense of interaction with others. Through therapies ASD children's non-verbal communication improves also works on child speech. Register, modulate, and act on a sensory input different activity used for during therapy time. Therapists use different sensory strategies to enhance self-regulation in ASD children. Warren et al.'s (2011) study reflect the results of my study. His study discussed the effectiveness of therapies for ASD children in his study. Therapies and interventions come with a positive outcome and social skills. Therapists do different activities and games during session time for modifications in ASD children. These activities are push, pull games like tug of war, wheelbarrow walking, play dough, ropes pulling, thereby and activity and sand play. The study discusses that CBT controls the anger of a child and also use anger management technique with CBT. Reinforcement techniques are also used with CBT. Positive and negative reward through therapists creates a great impact on a child mind. Cognitive issues resolve with the help of CBT. This study strongly believed that the effect of speech therapies and cognitive behavior therapy and play therapy had a great impact on ASD children's social and communication skills. In ASD children repetitive behavior, streaming, splitting, scratching, on

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seat behavior, tantrum, lack of social interaction decrease with therapy works after two to three years. An autistic child cannot speak with anyone, has a communication problem, language issues, and a lack of understanding words and sentences easily. CBT helps to clear the concepts and discussed them in every session. ASD children get homework like reading one paragraph.

5. Conclusion

After careful analysis, the study revealed that all three speech, applied behavior, and occupational therapies have a great effect on the social skills and communication of students with an autism spectrum disorder. Therapies improve the sitting behavior, repetitive behavior, communication way, hand, and eye coordination, clear the concept of wrong and right, clear the concept of God. Different therapies work at different levels and in different ways. Multiple uses of therapies change the behavior and personality of a child in a negative way. ASD child has a delay in speech, lack of reading non-verbal clues, difficult way to understand others matter and give unrelated answers of the questions. Through therapies, all these behavior problems can be improved. Therapist increases the confidence level of ASD children through peer friendship and interaction. The study concluded that play therapy, occupational therapy, cognitive-behavioral therapies have more effect on ASD children's social skills and communication. With the help of therapies, therapists work on how to play, talk, share and work with other children. Some sessions are also conducted in a group setting to encourage children to apply what they have learned.

Recommendations

The present study revealed the positive effect of therapies in social skills and communication of students with an autism spectrum disorder. Following recommendations are suggested according to the research:

- 1- Therapists must give therapies in routine. Don't give sessions after one month.
- 2- The therapy schedule must be designed before the session.
- 3- Therapists concepts should be cleared
- 4- Government should arrange some seminars, workshops in special centers for parents and teachers for awareness.
- 5- Therapists choose an individual session for better results.
- 6- Every school must hire therapists in their school/center
- 7- Must introduce new and innovative therapies for ASD children.

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Appendix

The items of the instrument were defined below:

- 1- Only 0-12 years old child has a problem of autism spectrum disorder
- 2- ASD children have different behavioral, emotional, developmental, or speech problems.
- 3- ASD children have a problem with social interaction.
- 4- Autistic children have a problem with communication.
- 5- ASD children have features of Repetitive behaviors, interests, and activities.
- 6- Create Social skills in autistic children is the most difficult for you.
- 7- Attention, sleep, play, anxiety all exist in autistic children as challenging behaviors.
- 8- Behavior programs like parent interaction, reinforcement techniques in social skills help during the treatment of ASD children.
- 9- The medication works better during the treatment of ASD children.
- 10- Sensory learning programs help during the treatment of ASD children.
- 11- Education learning programs improve the motor skills (the ability to walk, run, hold items, or sit up straight) in children.
- 12- Eye-hand coordination and thinking and reasoning improve with the help of therapies.
- 13- You think an early intensive intervention would help an ASD child.
- 14- Speech therapy works more effectively as compared to other therapies?
- 15- In ABA Cognitive behavior therapy is best for ASD children.
- 16- Occupational therapy helps to improve the skills of the ASD child.
- 17- Therapies maintain, and improve skills people with **autism** can be as independent as possible.
- 18- Play activities to help with interaction and communication in a child during all therapies sessions.
- 19- Applied behavior therapy improves Developmental activities, such as brushing teeth and combing hair.
- 20- Physiotherapy improves gross motor activities like holding, walking, standing, and moving.
- 21- Therapies based on the science of behavior have been effective for people of all ages and all disabilities
- 22- CBT helps to remove the anxiety level in ASD children.
- 23- CBT helps to remove the anger in a child.
- 24- Reinforcement techniques are also used during therapies.
- 25- Play therapy helps during the session to develop the sense of playing in children with ASD.