

## Emotional Regulation among Children with Autism Spectrum Disorder: The Relevance of Early Intervention and Role of Family

Ms. Smita Sharma<sup>1</sup>, Dr. Moyuri Sarma<sup>2</sup>, Ms. Phuloma Daimary<sup>3</sup>

<sup>1</sup>Research Scholar, Department of Education, Gauhati University  
Email: smita.sharma28@gmail.com

<sup>2</sup>Assistant Professor, Department of Education, Gauhati University  
Email: mayurisarma89@gauhati.ac.in

<sup>3</sup>Assistant Professor, Department of Education, North Kamrup College, Baghmara  
Email: phuloma11@gmail.com

Received: 17-May-2023

Revised: 11-June-2023

Accepted:03-July-2023

### ABSTRACT

Bringing up or nurturing a child with Autism Spectrum Disorder (ASD) can be a staggering event for the parents as well as caregivers. The permeating and profound shortfalls often extant in children with ASD are analogous to abundant difficulties among the caregivers, including a fall in parenting potencies, a hike in parenting tensities and a rise in physical and mental agony. The barriers or challenges in parenting a child with ASD arise due to perplexities in gaining access to specialized care and community acceptance. The dearth of community awareness and the insufficiency of professional mastery among the healthcare providers, accelerates impediments in obtaining the identification, diagnosis and interventions for ASD. There are also many frames of reference and each conveys discrete levels of stigma for the autistic individuals. This paper aims in comprehending the emotional regulations of children with ASD, the role of parents in regulation of emotions and intervention strategies. The investigators have relied upon secondary sources of data from the database of previous studies, journals as well as handbooks.

**Keywords:** Autism Spectrum Disorder, Emotional regulation, Identification, Parenting skills, Intervention.

### Introduction

The Diagnostic Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) classifies Autism Spectrum Disorder (ASD) as having social reciprocity and communication deficits, as well as experiencing repetitive behaviors and interests. Autism is becoming more prevalent over the world. It is believed that one out of every hundred youngsters in the globe has autism. (<https://www.worldatlas.com/articles/countries-with-the-highest-rates-of-autism.html>)Autism affects 1 in 500, or 0.20% of the population, or more than 2,160, 000 people in India. Statistics show that the number is growing among children. Autism prevalence and incidence are growing due to a lack of awareness, a lack of basic services, and inadequate diagnosis. (<http://www.thestatesman.com/india/aware-india/autism-1502960644.html>).The signs and symptoms appear between 12 and 24 months, however they might appear sooner or later depending on the severity of the symptoms. ASD is characterized by cognitive abnormalities, a lack of verbal reciprocity, and motor skill deficiencies.

Individuals with ASD have stiff or exaggerated facial gestures and demeanor, poor eye contact, and joint attention impairments. They are often self-contained, docile, and naive, with no group social interests. Autism is defined by significant deficiencies in social communication and interaction, which limit the afflicted child's capacity to communicate with others in social circumstances, as well as behavior that makes them look weird, strange, or different from regularly developing children.

**According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*,**People with ASD frequently have the American Psychiatric Association's Diagnostic and Statistical Manual of Mental illnesses, which health care practitioners use to identify mental illnesses:

- Difficulties communicating and interacting with others
- Interests that are restricted and repeated behaviors

- Symptoms that impair their capacity to perform at school, job, and in other aspects of their lives <sup>(1)</sup>

**According to the American Psychiatric Association, “Autism spectrum disorder (ASD) is a complicated developmental syndrome characterized by chronic difficulties with social communication, limited interests, and repetitive conduct. While autism is a lifelong illness, the degree of functional impairment caused by these issues differs amongst persons with autism.”<sup>(2)</sup>**

### **ASD symptoms in youngsters**

To varying extents, all comprehensive programs for young kids with autism expressly participate parents in the implementation of techniques. Increased parental abilities give for greater possibilities for children to learn in a variety of scenarios. Parental training as 'co-therapists' allows for consistent handling and assures that intervention is suitable in boosting children's initial relationships with others. The potential advantages of parent training includes increased capacities, restored confidence, and less stress for both parents and children. It has been established that group instruction for parents in new abilities promotes collaboration. They exhibit inconsistent eye contact and body language in addition to having poor integrated verbal and nonverbal communication skills. ASD symptoms may vary significantly in severity and duration. Common symptoms include issues with social interaction, obsessive interests, and communication difficulties. Apathy toward caregivers, a lack of response to their name, and limited eye contact are all early signs of autism spectrum disorder. Some children may develop normally for the first few months or years of their lives, but they may become violent, introverted, or lose their language skills. By the age of two, autism symptoms are frequently evident.

### **Some examples of common externalizing behavior include:**

1. Hand vibrating, swaying, jumping, or spinning are signs of routine tasks.
2. Pacing (constant activity) and "hyper" carry out
3. The fixation on specific behaviors or objects
4. Particular habits or routines (and being irritated when a pattern is even slightly modified)
5. Touching, sunlight and audio sensitivity to the extreme
6. Not participating in 'make-believe play' or imitating behavior of others
7. Erratic eating habits
8. Awkwardness, lack of balance
9. Acting rashly (without considering)
10. Aggression conduct, both toward oneself and toward others
11. The capacity for attention is limited.

### **Some examples of problems with interaction include:**

- Speech and language capacity are impaired.
- Singsong voice, computerized talking voice, or flat voice
- Echolalia, or (repetition of the same word again)
- Pronoun problems (saying "you" instead of "I," for illustration)
- Not employing or only rarely using traditional movements (such as gesturing or gesturing), and refusing to respond to them
- Inability to maintain attention when discussing or responding inquiries
- Not comprehending sarcasm or humor
- Difficulty expressing wants as well as emotions
- Not catching up on cues from the body's language, tone of speech, and facial expressions

According to Volkmar et al. (2005), In older people, social impairments are the best predictor of autism diagnosis; infants are likely to experience the same thing. Autism in preschoolers frequently prevents them from exhibiting the expected social skills in the first few months of life. According to Rutter (1978), one of the most important aspects of defining autism was its unique social development; It was distinct and not just a result of the mental disability that came with it.

According to Skuse (2003), a common symptom of autism is "avoiding" eye contact. In normal circumstances, newborns spend a significant portion of their waking time looking at their caregivers; however, people with autism do not develop this pattern of looking back at each other.

According to Kasari et al. (2006), Understanding the mental representations of other people begins with collaborative attention, and understanding other people improves social-cognitive and language skills.

According to Rogers et al., 2003 Play and imitation are essential for children's symbolic and social-cognitive development. It appears that difficulties mimicking other people's actions have a particular impact on autism. Children with autism are distinguished from those with other developmental disabilities by difficulties with imitation.

According to Rutherford (2006), In place of communicative speech, some autistic people exhibit echolalia, or the instantaneous repetition of words and intonations. When compared to normal development, autism suffers from a delay in language learning as well as a delay in word understanding. Conversely, it appears that articulation skills are unaffected.

The severity of each child's autism spectrum disorder, which can range from mild to severe, is likely to be unique. Some children with autism spectrum disorder have difficulty learning and display lower-than-average intelligence indicators. Other children who have the disease have normal to high intelligence; they learn quickly but struggle to communicate, put what they know into practice in everyday life, and adjust to social situations. It can be challenging to determine the severity of a condition because each child has a unique set of symptoms. It's frequently determined by how severely the impairments affect one's ability to perform.

### **Autism Spectrum Disorder Causes**

According to research, Hereditary and non-genetic, or environmental, factors combine to cause autism. It would appear that these factors raise a child's risk of developing autism. However, increased risk does not necessarily imply causation. People who do not have autism, for instance, are able to identify certain gene changes that are associated with the condition. In a similar vein, not all people who are exposed to a risk factor for autism will develop the condition.

According to research, Hereditary and non-genetic, or environmental, factors combine to cause autism. It would appear that these factors raise a child's risk of developing autism. However, increased risk does not necessarily imply causation. People who do not have autism, for instance, are able to identify certain gene changes that are associated with the condition. In a similar vein, not all people who are exposed to a risk factor for autism will develop the condition.

According to research, those with a genetic predisposition to autism may be more or less likely to develop the condition because of certain environmental factors. Importantly, the risk increase or decrease for any of these risk variables appears to be minor, particularly-

- Maternal Age Development (either parent)
- Birth challenges (e.g., severe preterm [before 26 weeks], low birth weight, and multiple pregnancies (twin, triplet, etc.)

- Pregnancies spaced by less than a year

### **A brief summary of the literature**

The current study was designed using the empirical literature on Autism that was available in both printed and electronic media. Few studies have been conducted to investigate the viability of parental involvement and guidance for helping the growth and development of children with autism. Furthermore, there are few Indian research on parental intervention in this domain. The gathered studies are organized into three divisions, which are as follows:

- (a) Studies related to Language and Communication,
- (b) Studies related to Social behavior pattern
- (c) Studies related to Intervention

#### **(a) Studies related to Language and Communication**

Lord et al. (2004) found that there is extraordinary heterogeneity in the rate at which language improves among those youngsters who truly do procure some utilitarian language, both inside and between classifications of kids with ASDs.

Kjelgaard and Tager-Flusberg (2004) assessed phonetic working in 89 mentally unbalanced youngsters in a single exploration. The youngsters, matured four to fourteen, were given a battery of normalized language assessments intended to evaluate phonological, lexical, and higher-request language capacity. The significant discoveries were that there was significant variety in language capacities among youngsters with chemical imbalance, but enunciation abilities were saved across all kids.

Charman et al. (2003) discovered that some nonverbal skills, especially the frequency of beginning joint attention and imitation, are good predictors of language acquisition in the pre-school period and beyond for children with autism.

#### **(b) Studies related to Social behavior pattern**

Chawarska and colleagues (2003) revealed in a study of autistic 2-year-olds that, in a naturalistic setting, autistic toddlers do not follow others' gazes; instead, they pay close attention to eye movement-based directional cues.

Senju, Tojo, Dairoku, and Hasegawa (2004) In a different study, researchers found that children with autism did not exhibit the expected preferred gaze shifting in response to a social signal. Additionally, a broader pattern of difficulties with controlling attention transfer was observed.

Osterling and Dawson (1994) looked at videotapes of 22 autistic children celebrating their first birthdays. The symptoms of autism, as well as data on social, emotional, communicative, and joint attention behaviors, were gathered. Less social and joint attention behaviors were observed in autistic children, and more.

#### **(c) Studies related to Intervention**

Ozonoff and Cathcart (1998) discovered that children who received structured education at home performed significantly better on developmental and cognitive tests in the areas of imitation and fine motor skills than students who received no such intervention. In addition, the experimental group outperformed the control group on other developmental metrics by two to three times and gained 9.6 months after four months of treatment.

Bauminger (2002) conducted research to determine whether a seven-month cognitive behavioral intervention improved 15 high-functioning autism children's socio-emotional understanding and social interaction. Social interaction, problem solving, and emotional comprehension all improved, according to the findings. Children's assertiveness and collaboration teacher-rated social ability scores improved after therapy.

### **The Study's Purpose and Importance**

Greater public understanding of autism can benefit not just persons with autism, but it may also make life simpler for families and careers. Individuals will be more knowledgeable about symptoms, at the initial stage of diagnosis, and the appropriate intervention or therapy if public awareness is high. Many autistic children struggle with regulating their emotions. Outbursts, resistance, or abandoning a situation are examples of actions displayed by children who are encountering stressful conditions that cause feelings of anger, frustration, or worry. Understanding a person on the autism spectrum's behavior will assist in identifying both skills to teach and techniques to implement that best match the function of the child's activities. It is critical to understand a child's linguistic skill set and sensory profile while investigating emotional reactions.

The purpose of this study is to focus on identifying children with autism so that early therapies may be implemented. Furthermore, the research focuses on the emotional regulation of autistic children and how caregivers and parental influences aid in the nurturing of such children.

### **Discussion**

Autistic children frequently experience flat emotions, which means they are absolutely expressionless at any particular time. Parents of such children frequently remark that their children do not grin or laugh with others, making it difficult for them to determine if their child is happy, unhappy, or in need of anything. Furthermore, such children struggle with mood management. They occasionally shout, weep, or laugh out loud for no apparent reason. When they are upset, they may engage in self-harming behaviors such as self-biting or head pounding, or they may become aggressive, hurling objects around, and so on. The stress of being misunderstood by others around them, along with an inability to effectively articulate wants and needs, can result in difficult behaviors in autistic children. Accepting this fundamental reality allows adults in the child's life to focus on teaching skills that aid in the prevention of behaviors associated with anxiety, frustration, and anger. The keys to success include getting to know the kid and responding to individual requirements via careful observation and consistent application of tactics that fit the child's demonstrated skill set, as well as teaching what is required across situations.

#### **1.1 Emotional Regulation in Autistic Children**

Emotional Regulation is a concept that may hold the key to explaining the reported emotional and behavioral issues in ASD. It is broadly described as the automatic or purposeful adjustment of an individual's emotional state to encourage adaptive or goal-directed behavior. Every autistic person controls their sensory input differently, and their emotional regulation abilities might vary. It is difficult to make broad comments about the indicators of deregulation, but any shift in behavior might suggest that a person is having difficulty controlling their emotions. They are characterized by an increase in self-stimulatory activity, such as flapping, pacing, or rocking.

Some people with autism are sensory avoidant, which means they avoid noises, smells, and other stimuli to relax. Other autistic people control their emotions by looking for more sensory information in their environment. They might, for instance, rock back and forth, fidget, pace, or make loud noises.

Not everyone always seeks out or avoids sensory avoidant. These actions of emotional regulation are very dynamic and are influenced by a lot of things, like the person's physical and mental health, environment, and previous experiences. It really depends on the person. Due to a lack of emotional awareness and skill in emotional language, as well as a lack of flexibility and a high sensitivity to change and environmental stimulation, individuals with ASD appear to be more likely to have impaired emotional regulation.

These limitations make it difficult to control emotions; after social defeats and severe reactions to social rejection, negative emotions tend to persist for longer and necessitate external intervention to regulate emotions. Younger children with emotional dysregulation may exhibit externalizing behaviors like aggression, impatience, tantrums, self-harm, and "meltdowns" or "shutdowns." If untreated, emotional dysregulation in children with ASD is likely to persist over time.

When emotional control fails, powerful emotions disrupt social engagement. Children who have such challenges are more likely to participate in peer disputes and, as a result, to be less accepted by others and to receive negative feedback in relationships, leading to feelings of isolation.

## **1.2 The role of parents in emotion regulation**

In recent years, the emphasis has switched from children with autism to intervention through parents and other caregivers. Symon (2005) and Seung, Ashwell, Elder, and Valcante (2006) explored parental training in the home environment. The findings revealed that parental training is beneficial in terms of developing parental abilities while encouraging the child to speak verbally, as well as using verbal mimicking to promote engagement. The studies also revealed that children with autism may improve their social and communication skills. Parental education also educated parents to be excellent role models for other family caregivers.

Parenting style, as well as the social milieu in which the kid grows, are important factors in establishing healthy self-emotion techniques during infancy. Non-autistic individuals frequently have misconceptions regarding self-soothing practices, which leads to a lack of genuine community understanding and acceptance. They might expect it to look like jumping, stumbling, flapping, pacing, or fidgeting, but it could also be silent, running, or sitting still.

As an autistic person, finding a place where you can control your emotions is half the battle. Those actions frequently elicit questions, comments, and a lot of confusion. Community members can assist by simply showing compassion and acceptance at the time.

Prior to having the option to self-control, having a fundamental handle of emotions is basic. In addition to the fact that the youth be should ready to name feelings, yet in addition what those sentiments closely resemble. Putting ID first assists with framing the groundworks of profound mindfulness, simplifying it to get a handle on the best way to command over-or under-feeling in the climate. Youngsters with chemical imbalance experience dread and dissatisfaction in friendly circumstances, however guardians might assist their kids with building certainty, particularly those on the advanced finish of the range.

Parents may teach their children about social conduct by modeling and explaining it to them. They may offer a thorough step-by-step explanation for their actions after a specific interaction, including their facial expression, tone of voice, and body language. Explanations and directions that focus on the "why" of the action can be beneficial because persons with autism do not naturally grasp.

Parents can talk about social circumstances with their children, such as TV shows they watch and appreciate, scenarios they could experience at school, and so on. The parent and kid should take turns acting out the event, so that the youngster gets practice portraying both characters. Play dates with children in a support group can help youngsters to develop social skills while also giving parents with a chance to discuss techniques with other parents. Knowledge of the developmental course and individual factors influencing communication and social adaptive skills acquisition can be extremely useful in creating more effective treatments.

## **1.1 Early Interventions**

According to research, early mental imbalance conclusion and medicines are bound to affect side effects and resulting abilities. Mental imbalance range jumble (ASD) can be analyzed in kids as youthful as two years of age. A few youngsters with ASD whose improvement seems typical up to that guide start toward relapse soon previously or during the age of two. Early intercessions occur previously or all through pre-young, as soon as 2 or 3 years of age. A small kid's cerebrum is as yet developing during this time, making it more "plastic" or versatile than at prior ages. In view of this adaptability, treatments have a bigger potential of long haul viability. Early intercessions not just furnish kids with the most ideal beginning, yet additionally the most elevated possibility of arriving at their maximum capacity. The sooner a youngster receives assistance, the better his or her chances of learning and developing. Some autistic children make such rapid progress with early care that they are no longer on the autism spectrum when they reach adulthood. Many of the youngsters who eventually become autistic have some characteristics:

- Earlier diagnosis and treatment
  - A young person with autism has an improved intelligence score (IQ, a measure of mental ability) than the norm.
  - Enhanced language and motor abilities
- Early intervention frequently focuses on four main areas of a child's development:
- The body and brain development of children are referred to as physical growth. The development of children's thinking and learning is referred to as cognitive development;
  - The term "behavioral development" refers to how children's mental and physical development affect their behavior.
  - The capacity of youngsters to build connections and cope with emotions is referred to as psychological and social growth.

Studies have repeatedly demonstrated that early autism diagnosis and intervention, starting around or around preschool age, is more likely to have significant long-term favorable impacts on symptoms and the development of subsequent abilities. Unfortunately, most children with ASD are not identified until they are much older, either because of their parents' failure to notice symptoms or a lack of access to treatment, and so miss out on an ideal period for intervention. The sooner a kid begins behavioral treatment, the more likely they are to grow in their skills later in life.

### 3.4 Emotion regulation intervention techniques

The majority of ASD intervention studies have concentrated on Cognitive-Behavioral Therapy (CBT) methods to treating co-occurring psychiatric problems in general (e.g., sadness and anxiety), with fewer focusing on emotion regulation/deregulation specifically. Exploring Feelings is a CBT-based psychotherapy that focuses on emotion control skills including anger management and anxiety management. Initially intended for youths aged 9 to 12, this intervention comprises of psychoeducation on the existence of emotions and how to recognize emotional expression.

Dialectical Behavior Therapy (DBT), a research-backed treatment meant to address emotion dysregulation, may be modified to enhance emotion regulation and distress tolerance in people with ASD, according to researchers. DBT and mindfulness therapies, on the other hand, are sometimes time-consuming, involving weeks of skill training for clients and more thorough training for clinicians. More research is needed to increase the distribution and accessibility of evidence-based emotion control therapies.

Social and Emotional Learning (SEL) therapies help children learn to manage their emotions, solve emotional problems, and comprehend the feelings of others. Educators dealing with autistic children may alter tools, such as the "Mood Meter," which shows basic representations of emotional states, to enhance emotional learning using visuals. Furthermore, evidence-based social skills therapies for children and adolescents with ASD have shown potential in the classroom. A range of tactics may be used in social skills treatments to educate social skills, enhance socio-emotional wellness, and reinforce social contact with peers.

ABA therapy is a treatment that divides activities into tiny, achievable stages and teaches kids with autism new abilities by reinforcing desired behavior. ABA is beneficial for children with developmental issues, regardless of the cause, because treatment is tailored to each child's requirements. There are no drawbacks to behavioral treatment, even if the child is eventually determined to have a different condition – or no problem at all.

Various therapies, such as speech therapy and occupational therapy, can benefit children with various developmental issues, such as a language handicap or just being a late bloomer. These therapies, which are both safe and effective, can help youngsters learn new skills, enhance their general functioning, and reach their full potential. Some of the methods include:

- **Social Skills Training:** This instruction, which may be performed in categories or separately, assists adolescents with autism in improving their skills to connect with others.
- **Speaking and Language Therapy:** It has an opportunity to improve the child's words routines and language skills.

- **Occupational Therapy:** This resolves problems in adaptive abilities in everyday tasks as well as written language struggles.
- **Parent Management Training:** Parents learn successful methods for dealing with problem conduct among their children while simultaneously advocating proper conduct. Parent support organizations help families deal with the pressures of having an autistic child.
- **Special Education Services:** Children with autism can reach their academic potential to the fullest if their school offers them with a personalized educational plan that takes consideration of their interaction with others difficulties, limited interests, and repetitive habits. There are special day courses for extremely young children that address language and community, and life abilities.
- **Treating co-occurring conditions:** Adolescents with autism are inclined than their non-autistic peers to experience insomnia, anxiety, and sadness. They are also more susceptible to developing ADHD. Autistic children might have cognitive issues that need to be addressed. These issues can be mitigated with the proper treatments that involve all of the services listed earlier as well as counseling and/or prescription medications.
- **Medication:** A child psychiatrist can evaluate and prescribe medications for co-morbid anxiety, depression, and impulsivity. When provided judiciously by a qualified physician working together with the child's parents, drugs such as aripiprazole and a medication called (the two FDA-approved treatments for restlessness connected to autism) may decrease autism-related irritability.

### Conclusion

Autism awareness benefits autistic children's self-acceptance, confidence, and mental wellness. Children who are constantly trying to fit in with their peers may suffer immensely from an absence of consent. At times, it may appear that many individuals do not accept autistic children. The rejection might be due to the fact that not everybody is aware of or fully comprehends ASD. Peer rejection can elicit distressing emotions that can be difficult to handle. ASD Children may already struggle to interact, connect, and engage with others. This rejection may hinder students from furthering their communication skills. This is how autism awareness helps everyone, not just individuals with ASD; it creates a more welcoming workplace. Because parental scaffolding models a child's capacity to control emotions, parent-mediated early treatments may be an effective method to changing the developmental trajectory of children with high levels of emotional dysregulation.

According to research, parent involvement leads to a variety of favorable outcomes for children with autism, including improved generalization and preservation of treatment benefits, more continuity, and more effective problem-solving skills. To varying degrees, all comprehensive programs for young children with autism expressly engage parents in the implementation of techniques. Increased parental abilities give for more opportunity for children to learn in a variety of scenarios. Parental training as 'co-therapists' allows for consistent handling and assures that intervention is suitable in boosting children's initial social connections. The possible benefits of parent training include improved abilities, restored confidence, and less stress for both parents and children. It has been established that group training for parents in new abilities facilitates mutual assistance.

### References

1. American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., text revision). Washington, D C: American Psychiatric Association.
2. Bauminger, N. (2002). The Facilitation of Social-Emotional Understanding and Social Interaction in High-Functioning Children with Autism: Intervention Outcomes. *Journal of Autism and Developmental Disorders*, 32, 283-298.
3. Bronsard G, Botbol M, Tordjman S. (2010). Aggression in low functioning children and adolescents with autistic disorder
4. Charman, T., Drew, A., Baird, C., & Baird, G. (2003). Measuring early language development in preschool children with autism spectrum disorder using the MacArthur Communicative Development Inventory (Infant Form). *Journal of Child Language*, 30, 213-236.



5. Chawarska, K., Klin, A., & Volkmar, F. (2003). Automatic cueing through eye movement in 2-year-old children with autism. *Child Development*, 74(4), 1108-1122.
6. Dominick, K., Davis, N., Lainhart, J., Tager-Flusberg, H., Folstein, S. (2007). Atypical behaviors in children with autism and children with a history of language impairment. *Research in Developmental Disabilities*, 28(2):145-162
7. Hwang, B., & Hughes, C. (2000). The Effects of Social Interactive Training on Early Social Communicative Skills of Children with Autism. *Journal of Autism and Developmental Disorders*, 30, 331-343.
8. Joseph, R. M., McGrath, L. M., & Tager-Flusberg, H. (2006). Executive dysfunction and its relation to language ability in verbal school-age children with autism. *Developmental Neuropsychology*, 27, 361 - 378.
9. Kasari, C., Freeman, S., & Paparella, T. (2006). Joint attention and symbolic play in young children with autism: a randomized controlled intervention study. *Journal of Child Psychology and Psychiatry*, 47, 611-620.
10. Kientz, M. A., & Dunn, W. (1997). A comparison of the performance of children with and without autism on the sensory profile. *American Journal of Occupational Therapy*, 51, 530-537.
11. Kjelgaard, M. M. & Tager-Flusberg, H. (2004). An investigation of language impairment in autism: implications for genetic subgroups. *Language and Cognitive Processes*, 16, 287-308.
12. Lord, C., Shulman, C., & DiLavore, P. (2004). Regression and word loss in autistic spectrum disorders. *Journal of Child Psychology and Psychiatry*, 45, 936-955.
13. Noens, I., Van Berckelaer-Onnes, I. (2004). Making sense in a fragmentary world: communication in people with autism and learning disability. *Autism*, 8: 197-218
14. Osterling, J., & Dawson, G. (1994). Early recognition of children with autism: A Study of 1st birthday home videotapes. *Journal of Autism and Developmental Disorders*, 24, 247-257.
15. Ozonoff, S., & Cathcart, K. (1998). Effectiveness of a home program intervention for young children with autism. *Journal of Autism and Developmental Disorders*, 28, 25-32.
16. Peshwaria, R. & Venkitesan, S. (1992). *Behaviour Assessment Scales for Indian Children with Mental Retardation*. Secunderabad: National Institute for the Mentally Handicapped.
17. Powers, M., Palmieri, M., D'Eramo, K., Powers, K. (2011). *Evidence-based Practices and Treatments for Children with Autism*. New York, NY: Springer.
18. Rogers, J. S., Hepburn, S. L., Stackhouse, T., Wehner, E. (2003). Imitation performance in toddlers with autism and those with other developmental disorders. *Journal of Child Psychology and Psychiatry* 44, 763-781.
19. Rutherford, M. D., Young, G. S., Hepburn, S., & Rogers, S. J. (2006). A Longitudinal Study of Pretend Play in Autism. *Journal of Autism and Developmental Disorders*, 2, 284-291
20. Senju, A., Tojo, Y., Dairoku, H., & Hasegawa, T. (2004). Reflexive orienting in response to eye gaze and an arrow in children with and without autism. *Journal of Child Psychology and Psychiatry*, 45(3), 445-458.
21. Seung, H. K., Ashwell, S., Elder, J. H., & Valcante, G. (2006). Verbal communication outcomes in children with autism after in-home father training. *Journal of Intellectual Disability Research*, 50, 139-150.
22. Sigman, M., Dissanayake, C., Arbelle, S. & Ruskin, E. (1997). Cognition and emotion in children and adolescent with autism. In D.J. Cohen & F.R. Volkmar. *Handbook of Autism and Pervasive Developmental Disorders*. New York: John Wiley & Sons, Inc.
23. Skuse, D. (2003). Jack Tizard lecture: fear recognition and the neural basis of social cognition. *Child and Adolescent Mental Health*, 8, 50-60.
24. Sowden, H., Perkins, M., Clegg, J. (2008). The co-development of speech and gesture in children with autism. *Clinical Linguistics & Phonetics*. 22:804-813
25. Symon, J. B. (2005). Expanding interventions for children with autism: parents as trainers. *Journal of Positive Behavior Interventions*, 7, 159-173.
26. Volkmar, F., Chawarska, K., & Klin, A. (2005). Autism in infancy and early childhood. *Annual Reviews of Psychology*, 56, 315-336.

**Websites**

(<https://www.worldatlas.com/articles/countries-with-the-highest-rates-of-autism.html>)

(<http://www.thestatesman.com/india/aware-india/autism-1502960644.html>).

1. Transforming the understanding. national institute of mental health. [Online] february 6, 2023. [Cited: july 10, 2023.] <https://www.nimh.nih.gov/health/topics/autism-spectrum-disorders-asd>.

2. american psyhiatric association. psychiatry.org. [Online] march 5, 2013. [Cited: july 10, 2023.] <https://www.psychiatry.org/patients-families/autism/what-is-autism-spectrum-disorder>.