

An Analysis of the Nature of Social Communication Performed by Bengali Speaking High-Functioning Autistic Children

Sayedra Asia Akter¹

Abstract

The current study was carried out with the aim of analyzing the skills of Bengali-speaking children with autism spectrum disorder in the field of social communication. 25 picture stimulus identification skills were analyzed by performing an experiment called 'picture stimulus identification skills used in social environment'. The results of this study showed that participating Bengali-speaking high-functioning autistic children were able to make an average of 52.8 percent correct identification of stimuli used in a social environment. This is because the ability to identify stimuli used in social environments depends on many factors. Picture stimulus identification skills used in the social environment largely depend on the extent to which he has the opportunity to learn by seeing, knowing and experiencing various elements of social culture with the help of parents or others or by himself. Most of the parents do not want to take their special child out often due to various negative social attitudes, moreover, since children with autism cannot accept changes in routine, they take certain socio-cultural limits according to the child's preferences. As a result, social images lag behind the opportunity to gain experience by recognizing, knowing and repeatedly viewing stimuli.

Keywords: Autism, High-functioning autistic children, Communication skill, Social communication, Picture stimuli identification.

1. Introduction

Humans as social being have been living in a communicative world since the dawn of time. Therefore, from the necessity of interaction and communication of social human being, language has been originated. Because at the root of the communication that takes place every moment between people is the use of verbal or non-verbal language. On the other hand, language is the most complex process even among the higher mental processes as the brain or central nervous system produces, processes and controls language. However, due to brain defects, various disorders may arise in the area of language use, language comprehension, language performance, language expression, and may be disturbed the processes of language communication. And one of the language impairments caused by the nature of brain damage, the only source of language, is developmental language disorder (Arif & Jahan, 2014).

Impairments that a child is born with are called developmental language disorder. Autism is one of the developmental language disorders. Autism is a life-long condition characterized by developmental abnormalities of the child's brain that results in a variety of deficits in daily life and behaviors and marked deficits in communication, language development and expression (Arif & Nasreen, 2013). A healthy and normal child naturally

¹ Lecturer, Department of Audiology and Speech Language Pathology, Proyash Institute of Special Education and Research (PISER)

learns the process of communication along with the gradual development of life as a social being. On the other hand, children with autism spectrum disorder (ASD) show deficit in understanding the practical meaning of language, social communication in different context and situations due to deficits in language skills. The present article analyzes the nature of social communication skills of Bengali-speaking high-functioning children with autism.

Research by autism researchers has proven that individuals with autism are not capable to make social communication properly. To be socially illiterate means to be illiterate in the description of an event. Because the skills needed to successfully describe events are not fully developed in children with autism. For example, language skills, social skills, communication abilities, mental states abilities, pragmatic skills and social cognitive skills etc. The present article analyzes the nature and degree of variation in social communication deficits in Bengali-speaking autistic children.

2. Social communication

Communication is a social activity that at least two people perform their daily social needs. And in the process of communication between these two, people accept language as a reliable cultural medium. They basically express their emotions, feelings, desires, needs, intentions, etc. by adopting language in this communication (Arif & Jahan, 2014). Social communication is the practice of language in social contexts. In this context, Adams (2005) said, Social communication is the combination of social interaction, social cognition, pragmatics, and receptive/expressive language.

In other words, communication is a two-way interaction where data flows between each other. When the level of communication extends beyond the family to the neighborhood-neighbors and others, it falls within the scope of social communication (Nasreen, 2017). Through social communication, a type of interaction develops between people of different classes of society, which is one of the conditions of sociality.

3. Autism and social Communication

DSM-4 states that if a child is unable to use language socially before the age of 3, i.e. cannot understand the language used by others, it is considered as a primary condition for the diagnosis of autism (Nasreen, 2017,p.18). Research on autism worldwide has shown that autistic children exhibit significant deficits in social communication. Because they lag behind in acquiring the various forms of mastery of social communication. Although the language comprehension of high-functioning autistic children is close to that of normally developed children, their pragmatically limitations are quite noticeable. As a result, high-functioning children with autism may not be more successful in social communication with others. The appearance of language deficits in autistic children is variable in terms of degree, ranging from mild to severe in terms of

practical application of the communication (Arif, 2015). The normally developed child learns very easily the rules of social communication at an early age, for example, how to start a conversation, how to take turns, how to invite friends to play, etc. But autistic children cannot acquire such processes in social communication (Turkington & Annan, 2007). As the reason, they explain that autistic children mainly withdraw themselves from social interaction due to defects in the limbic process of the brain. As a result, autistic children show an inability to participate with social partners due to poor eye contact and are indifferent to others. High-functioning autistic children tend to participate in social communication, but may not be able to effectively socialize. Rotheram-Fuller et al. (2013) in the article called 'Social skills Assessments for Children with autism spectrum disorders (ASD)' stated that, autistic children experience variety of challenges in social communication and reciprocity, such as initiating interactions, joint attention, shared interaction, understanding & using social communication and make out others' needs for personal space etc. Autistic children may not actually maintain to social communication. So they have a considerable deficiency in socialization. As a result, they also have problems in communicating with different people in the society (Barua, 2015).

Various researchers on autism and communication have clearly stated in their different studies that one of the main problems of autistic children is deficits in communication or communication skill. Hodgdon (2001) in her research article 'Improving Communication and Behavior' stated that autistic children experience wide-ranging challenges in communication and social skills. According to Wetherby (2006), research has identified social-communication shortages in children with autism that can be structured into two major areas:

1. The capacity for joint attention: which reflects struggle coordinating attention between and object, and 2. The capacity for symbol use: which reflects difficulty learning conventional or shared meanings for symbols and getting the knowledge of gestures, words, imitation, and play. On the other hand, the following two issues are very closely related in terms of social communication. These are: 1. The emergence of joint attention: Children gain three developmental accomplishments that contribute to the ability for joint attention and permit them to be active social partners in learning to talk. Three developmental achievements are:
 - Sharing attention: the ability to share attention usually arises at birth and continues to grow over the first year of life. By 9 months of age, generally the child dynamically observes others and has learned to transferal gaze in the middle of people and objects.
 - Sharing affect: the ability to share affect in expressing emotional conditions to others is evident when a child shows pleasure and directs gaze to the caregiver. By sharing affect, children also acquire to understand emotional states of others.

- Sharing intentions: the capability to share intentions refers to being able to signal or direct behaviors in order to realize specific goals. By 9-10 months of age, a child initiates to use sounds, gestures, and other behaviors to communicate purposefully. Moreover, sharing intentions encompasses coordinating shared attention and affect.
2. The emergence of symbol use: before using words, children procure a repertoire of conventional sounds and gestures to express intentions. Generally by 6-9 months of age, the child is able to imitate familiar actions or sounds; such as grasping, banging, mouthing and dropping. By 12-14 months, the child is able to naturally imitate a growing collection variety of familiar actions or sounds at a later time that first observed. Thus the growing interaction of joint attention and symbol-use capabilities enables children to become active partners in the complex.

Rogers (1999) found that imitation has an intimate relationship with communication. Imitation skills are also related to children with autism language development and other development too. Compared with developmentally delayed and normally developing children; 20-month-old children with autism spectrum disorders were precisely damaged on some aspects of imitation (Charman et al 1997). National Institute on Deafness and other Communication Disorders (2020) on 13 April has informed that children with autism are often self-absorbed and seem to exist in an isolated world in which they have narrow ability to effectively communicate and interact with others. Autistic children may have struggle developing language skills and understanding what others say to them. They also often have difficulty connecting nonverbally, such as through hand gestures, eye contact, and facial expressions. The ability of children with autism to communicate and practice language depends on their intellectual and social development skills. Some children with autism may not be able to communicate via speech or language, and some may have very restricted speaking skills. Others may have rich vocabularies and be able to talk about specific subjects in great detail. Many may have problems with the meaning and rhythm of words, sentences and be unable to understand body language and the meanings of different vocal tones. Taken together, these complications affect the ability of children with autism to interact with others, particularly persons their own age.

4. Method

4.1 Participants

10 high-functioning Bengali-speaking autistic children were selected as participants for the present study. However, some specific aspects have been targeted in these representative participant elections- All the children selected as participants in the study must have been identified by specialist doctors. Furthermore, the limitations of social communication and Theory of mind (TOM) of children with autism are observed, so the age range of the participants has been limited between 8 years and 15 years consistent with the purpose of the study. It should be noted that the number of girls with autism is less than boys i.e. 1: 4

that is why the number of girls was 3 out of 10 participants in this experiment. Besides, we know that there are different types of autism, from among them, only high functioning autistic children have been selected as the participants of this study. Note that high-functioning autistic children are those children whose IQ is above 70 and who are relatively good at social interaction. In addition, all of them have verbal development of the language, that is, they are relatively good at using the language. Only children with ASD have been selected, if children with autism problems have other diseases or defects, such as hearing impairment, intellectual disability, they have not been selected as participants in this study. It should be noted that the names of the children participating in the analysis of the research results are pseudonyms made from the first letters of their real names as part of confidentiality protection (AAR, TTS, MF, MMR, TPK, AAWA, AAA, FSJ, RHA, and AJE) are used. The institutions from which the participants of this study were selected are as follows:

*** From Proyash Specialized School, Dhaka Cantonment, Dhaka.**

4.2 Stimulus

In the current study, several stimuli have been selected which are used in the social context of situation in Bangladesh. 25 images related to the social context of Bangladesh were mainly selected as picture stimuli for experimenting in the present study. Each participant was shown the stimulus pictures in front of them sequentially through flashcards and asked to name 25 picture stimuli related to the social context of Bangladesh in the displayed picture. The pictures shown are: Classroom, Flag, Shaheed Minar, Magpie Robin, Water Lilly, Jackfruit, Marigold Flower, Tiger, Marriage, Children Park, House, Lalbagh Fort, Martyrs' Monument, Bus, Rickshaw, Airplane, Train, Mosque, Embrace, Cricket Game, Market, Shopping malls, Restaurants and Fountains etc. A colorful picture stimulus was taken so that the children were easily attracted to the pictures.

4.3 Data Collection Process

In this article, two methods of data collection- participant observation and interview have been adopted. By observing autistic children in different communicative contexts, an attempt has been made to understand the impairments they exhibit in context of social situations. It has been possible to gain some ideas by observing how these participating autistic children use social communication according to the context of situations and show skills and impairments in identifying picture stimuli used in the social environment as part of Bangladesh's social culture. However, it should be noted that not all the data required for this study were obtained from participant observation. That is, it has not been possible to find a holistic internal form of Bengali-speaking high-functioning autistic children who exhibit impairments in expressing social communication skills through observation. That is why his inner form has been explored through interviews. A uniform rule is followed for obtaining reliable information in interviews. In this case, each participating child was interviewed separately for data collection and the responses received were recorded and videotaped. Since all these children participating in the

present study are special children, the process of data collection from them was slightly different in nature. As a result two interviewers were not selected simultaneously. All data collected in this study were analyzed by conducting 1experiment. These are as follow-

Experiment-1: Picture stimulus identification skills used in social environment In order to accurately illustrate the data obtained by conducting experiment-1 on the participants, mainly 3 categories of variables are defined for analysis of stimuli.

- i. Correct identification: Correct identification was considered when the participants were able to correctly name the selected images shown in the present study with only specific naming word. However, one thing must be noted in this case is that simple but understandable pronunciation errors are taken as correct identification.
- ii. Partially correct identification: When interpreting a picture stimulus, participants gave the general name of the displayed stimulus rather than the specific name word or any information about the displayed picture stimulus that reasonably represented that stimulus, it was considered a partially correct identification. For example, the identification of Water lilly as flower; marigold as flower; Magpie robin as bird were identified as partially correct identifications. Moreover, in the case of the displayed picture stimuli, if the naming word was accompanied by a verb or another word, then it was considered as partially correct identification. Such as- Cricket as playing.
- iii. Wrong identifications: Wrong identifications were scored when participants misinterpreted assigned picture stimuli and did not provide any information or make any identifications about the presented stimuli.

Correct identifications obtained from participants are represented by tick mark (✓) and incorrect identifications by cross mark (X). On the other hand, no symbol was used for partial correct identification of the displayed picture stimulus, instead a third parenthesis [] was used.

Proper analysis of the data obtained at the field level helps a researcher to reach the intended objective in the research work. Some simple statistical methods were applied to analyze the data obtained from the participants to review the results of this research. The following data is presented and analyzed in the light of the responses received from the participants.

5. Result and Discussion

Experiment-1: Picture stimulus identification skills used in social environment.

Table 5.1: The presentation of picture stimulus used in social environment.

Picture Stimuli ↓	Participant's Name (in short)									
	AAR	TS	F	MR	PK	AWA	AA	SJ	HA	JE
Class Room	×	×	×	×	×	×	×	√	×	×
Flag	√	√	√	√	√	√	√	√	√	√
Shaheed Minar	√	√	√	√	×	√	×	√	√	√
Magpie Robin	[Bird]	√	√	[Bird]	√	√	[Bird]	√	√	√
Water lily	[Flower]	√	√	[Flower]	×	√	[Flower]	√	[Flower]	√
Jackfruit	√	√	√	√	√	√	√	√	√	√
Marigold	[Flower]	√	×	[Flower]	×	[Flower]	[Flower]	√	[Flower]	[Flower]
Tiger	√	√	√	√	√	√	×	√	√	√
Marriage	[Bride]	√	[Bride]	[Bride]	×	×	×	√		×
Children's park	×	√	×	√	×	×	×	×		
House	√	×	√	√	×	√	√	×	√	√
Lalbagh Fort	×	×	×	×	×	√	×	×	×	×
Martyrs' Monument	×	√	√	×	×	×	×	√	×	×
Bus	√	√	√	√	√	√	√	√	√	√
Rickshaw	√	√	√	√	√	√	√	√	√	√
Aero plane	√	√	√	√	√	√	√	√	√	√
Train	√	√	√	√	√	√	√	√	√	√
Mosque	×	√	√	×	×	×	×	√	√	√
Embrace	×	√	×	×	×	×	×	×	√	×
Cricket	×	√	×	×	×	×	×	√	[playing]	×
Ocean	×	√	×	×	×	×	×	√	√	[water]
Market	×	√	√	[vegetable]	×	×	×	√	√	√
Shaping Mall	×	×	×	×	×	[shop]	×	×	×	×
Restaurant	×	√	√	×	√	×	×	√	√	×
Fountain	√	×	√	×	×	×	×	×	×	√

Through this table, 25 pictures stimuli recognition skills of 10 Bengali-speaking autistics children related to social communication are presented. All participants showed 100% success in identifying the 6 stimuli: bus, plane, train, flag, jackfruit and rickshaw. Magpie Robin, water lily and marigold these three stimuli were identified as a basic level category that's why some participants recognized Magpie Robin as a bird, water lily and marigold as a flower. On the other hand, most of the autistic children showed failure in identification of classroom, lalbagh fort and embrace by naming word.

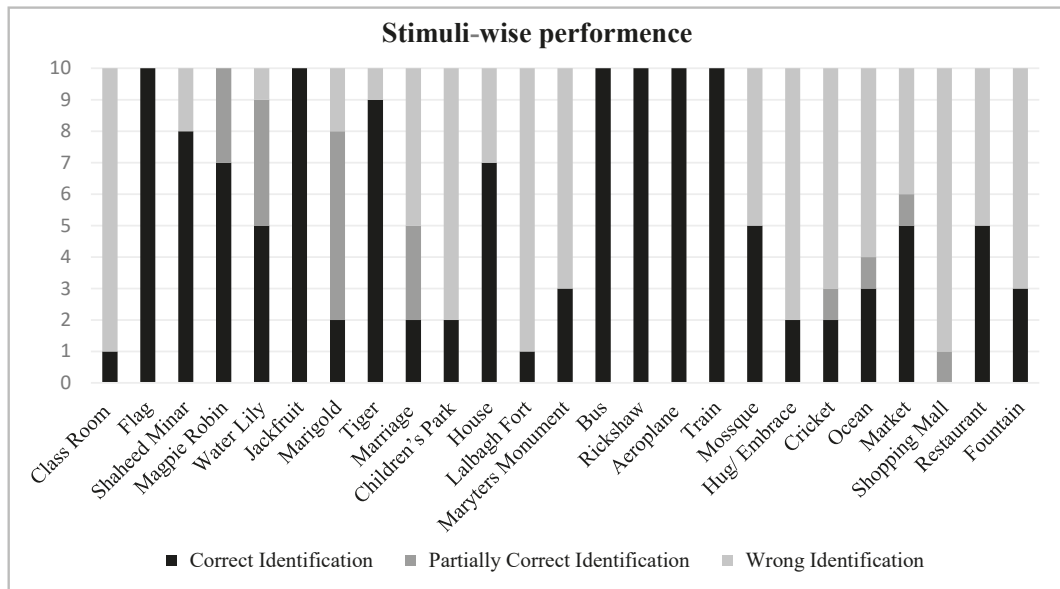


Figure 5.1: The measurement of stimuli-wise performance in social environment.

This figure represents participants' recognition skills across 3 measurement scales (I. correct identification, II. partially correct identification and III. Wrong identification) based on the 25 picture stimuli. That is, measures of participants' competence are presented according to the picture stimuli used in the social environment.

Table 5.2: The result in the following table showing the performance of the social stimuli identification.

Stimulus used in social environment	Correct Identification	Partially Correct Identification	Wrong Identification
Class Room	1	0	9
Flag	10	0	0
Shaheed Minar	8	0	2
Magpie Robin	7	3	0
Water Lily	5	4	1
Jackfruit	10	0	0

Marigold	2	6	2
Tiger	9	0	1
Marriage	2	3	5
Children's Park	2	0	8
House	7	0	3
Lalbagh Fort	1	0	9
Martyrs Monument	3	0	7
Bus	10	0	0
Rickshaw	10	0	0
Aero plane	10	0	0
Train	10	0	0
Mosque	5	0	5
Embrace	2	0	8
Cricket	2	1	7
Ocean	3	1	6
Market	5	1	4
Shopping Mall	0	1	9
Restaurant	5	0	5
Fountain	3	0	7
Total	132	20	98
Percentage	52.8%	8%	39.2%
Average	5.28		
Standard Dev.	3.44		
CoVar	0.6506 (65.06%)		

The table reveals a comprehensive analysis of participants' performance in identifying various social stimuli. Each stimulus is categorized by the number of correct, partially correct, and wrong identifications. Overall, correct identifications total 132, accounting for 52.8% of all responses. Partially correct identifications total 20, calculating 8% of responses, and wrong identifications total 98, and comprising 39.2% of responses. The average number of correct identifications per stimulus is 5.28, with a standard deviation of 3.44, showing variability in performance through stimuli. The coefficient of variation (CoVar) of 65.06% recommends a relatively high degree of dispersion in identification correctness across diverse stimuli. This analysis emphasizes both the strengths and weaknesses in participants' ability to identify various social stimuli.

Table 5.3: The result in the following table showing the performance of the participant's selected social stimuli identification.

Participant	Correct Identification	Partially Correct Identification	Wrong Identification
1. AAR	10	4	11
2. TTS	20	0	5
3. MF	16	1	8
4. MMR	10	5	10
5. TPK	9	0	16
6. AAWA	12	2	11
7. AAA	7	3	15
8. FSJ	19	0	6
9. RHA	15	3	7
10. AJE	14	2	9
Total	132	20	98
Percentage	52.8%	8%	39.2%
Average	13.2		
Standard Dev.	4.12		

The table delivers a comprehensive assessment of participant performance in recognizing selected social stimuli, important for valuing research quality. Participants' correct identifications total 132, representing 52.8% of responses, partially correct identifications total 20, contributing 8% of responses, and wrong identifications total 98, counting 39.2% of responses, highlighting areas where incorrect associations were prevailing. The average number of correct identifications per participant is 13.2, with a standard deviation of 4.12, indicating changeability in individual performance. The coefficient of variation (CoVar) of 31.2% recommends moderate dispersion in identification correctness through participants, suggesting consistency in performance levels. These metrics are important for measuring the reliability and validity of the identification task, providing insights into participant engagement and understanding of the stimuli.

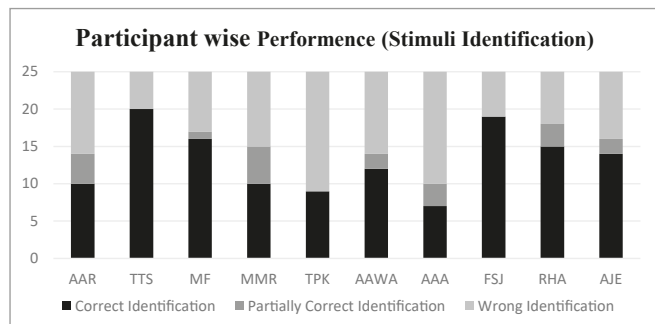


Figure 5.2: The measurement of participant-wise performance of stimuli identification in social environment.

This figure shows that participants TTS and FSJ have relatively good image stimulus recognition skills. On the other hand, TPK and AAA misidentified most of the stimuli due to their inability to identify the selected image stimuli. It is also apparent from the figure that in addition to correct identifications and wrong identifications, participants were able to make partially correct identifications of some stimuli.

Based on the information and data, the result of the present study are presented below:

- In the current study, Bengali-speaking high-functioning autistic children showed 52.8% correct identification proficiency for selected pictorial stimuli used in a social environment. They succeeded in correctly identifying only 132 picture stimuli out of a total of 250 picture stimuli presented 25 in front of each of them. About 39% of stimuli in social communication showed failure to recognize stimuli. In this case, it can be said that according to the previous research work, cognitive activities by (DO) socialization by (WATCH), means of making linguistic meaning by (LISTEN), reciprocal interaction or communication by (SAY) are collectively acquire although possible by typically developing child, it is not achievable in children with autism. As a result, their social and linguistic skills become limited (Quill, 2000).
- We categorize the abstract and concrete things around us from different perspective of categorization. There are thousands of categories or classifications of things around us such as animals, non-animals, fruits, flowers, fish, vehicles, birds, trees. Category effects may vary across countries and cultures. However, in all cases, this category or diagonal is mainly divided into three parts, such as a) super ordinate category, b) basic level category, and c) sub ordinate category.
- The point can be explained briefly. In our country, the name that is preferred by people when talking about the fruit is mango. This mango is actually the primary categorization. Mango, on the other hand, belongs to the fruit category. Then it can be said that the fruit is super ordinate category, when saying fruit, most of the people of our country imagine the face of mango in their mind which is the primary category and if we say Himsagar, Gopalbhog or Mohanbhog mango then it is subordinate category. According to this explanation, basic level category effects were observed for some participants in the identification of 3 picture stimuli used in social settings: water lily, marigold, and magpie robin bird. That is, water lily has identified as flowers and marigolds as flowers, and magpie robin has identified as bird. Moreover, the cricket stimuli has identified as playing. It really depends on the child's learning process. Normally developing children are also taught these primary or basic level categories first.
- All participating children showed 100% success on some of the stimuli used in the social environment. For example, all children correctly identified the 4 stimulus participants' bus, aero plane, rickshaw and train. The reason can be said that these concrete noun stimuli are seen by these children very much, they are able to easily identify them because they travel in these vehicles at various times as a means of movement in this urban life of mechanics.

- In many cases it was observed that the participants used English words instead of Bengali words in identifying the stimuli: such as magpie robin (দোয়েল পাখি) as bird, 'water lily' (শাপলা ফুল) as flower, 'tiger' (বাঘ) as Tiger. In this case, it can be said that they have been taught these stimuli in English at home or school. Moreover, while doing the current research, I found out that the participant MMR. English language is more proficient than Bengali and hence most of its identifications are English words. Usage trends are noted.
- The effect of similarity or visibility has been observed in the identification of stimuli used in social environments, such as 'Lalbagh Fort' as a 'mosque', ocean as water or river water, 'shopping mall' as Bashundhara and some as Jamuna Future Park. As a researcher, it seems to me that the external appearance of Lalbagh Fort looks like a mosque, that's why they called Lalbagh Fort a mosque. The reason why the shopping mall is called Jamuna Future Park or Bashundhara is because the participants with their parents may go to these shopping malls. Moreover, from the current research, shopping for some participants means Jamuna Future Park. These special children usually do not like a change in routine. So always go shopping at certain places with parents or someone else. As a result, after seeing the picture of the shopping mall, he said the answer by heart.
- The present study did not observe any phonological deficits in the responses obtained by Bengali-speaking high-functioning autistic children in identifying picture stimuli used in a social environment. However, the participant FSJ called martyrs monument (স্মৃতিসৌধ) as smritichoto (স্মৃতিছোট). In this case, the researcher in the present study seems to have omitted the compound intonation sign of the vowel sound ou (ঔ) for the spontaneity of pronunciation.
- Participating AAO called martyrs monument as Bangladesh, because we often say Bangladesh when we see a picture of the flag of Bangladesh, or we often say Bangladesh when we see various pictures related to Bangladesh's socio-culture. That is, the only country that stands tall in the world for the flag, memorial or language of Bangladesh, even when we see the picture of Shaheed Minar of Bangladesh, many times we say it is Bangladesh because we hold it in our perception.
- The participant MF called Lalbagh Fort as Shaheed Minar, and participant AJE called martyrs monument as Shaheed Minar. As a new researcher, I believe that stimulus identification skills used in social environments depend on repeated exposure and learning. Usually, we first teach children about the various places or topics of our society and culture through still pictures in books or by showing them on television. As a result, they may not remember it for long. This is also how learning begins in autistic children. This often confuses one stimulus with another stimulus picture. Lack of direct experience has also been observed in the present study, resulting in the terming Lalbagh Fort and martyrs monument as Shaheed Minar.

6. Conclusion

Finally, the above discussion presents a picture of the nature of the social communication skills of Bengali-speaking high-functioning autistic children with the help of data collected at the field level. Worldwide research on autism has shown that children with ASD unveil noteworthy deficits in many areas of socialization. The present study also demonstrated that Bengali-speaking high-functioning atypical children with autism have severe disabilities or deficits in various aspects related to stimulus identification skills used in social environment, social communication and current social situation, similar to children with autism in other countries of the world. While normally developing children learn to gradually enrich themselves in the holistic process of understanding their surroundings with innate abilities as they grow older, autistic children lag behind for various reasons. The reason can be said that autistic children are usually immersed in their own world and mental state deficits are one of their characteristics. In addition, due to the weak cognitive ability of autistic children, their experiences do not last long.

Moreover, many parents keep these atypical children away from various social activities as they face social negativity. The range of these special children becomes smaller and smaller. Parents' anxiety increases, gradually alienating their special child from society.

References

- আরিফ, হাকিম ও নাসরীন, সালমা। (২০১৩)। *আমাদের অটিস্টিক শিশু ও তাদের ভাষা*। ঢাকা: নবযুগ প্রকাশনী।
- আরিফ, হাকিম ও জাহান, তাওহিদা। (২০১৪)। *যোগাযোগবিজ্ঞান ও ভাষাগত অসঙ্গতি*। ঢাকা: বুকস ফেয়ার।
- আরিফ, হাকিম। (২০১৫)। *বাংলা অবাচনিক যোগাযোগ*। ঢাকা: বাংলাদেশ বিশ্ববিদ্যালয় মঞ্জুরী কমিশন।
- আরিফ, হাকিম; রহমান, ড. শোয়েবুর; ফেরদৌসী, ড. ফাহিমদা ও জাহান, তাওহিদা। (২০১৫)। *শিশুর ভাষা-বিকাশম্যানেল: একটি প্রস্তাবনা*। ঢাকা: যোগাযোগ বৈকল্য বিভাগ, ঢাকা বিশ্ববিদ্যালয়।
- নাথ, মৃণাল। (১৯৯৯)। *ভাষা ও সমাজ*। কলকাতা: নয়া উদ্যোগ।
- নাসরীন, সালমা। (২০১৭)। *বাংলাভাষী অটিস্টিক শিশুর সামাজিক সংজ্ঞাপন ও প্রতীকী হস্তভঙ্গি শনাক্তকরণ দক্ষতা। সামাজিক বিজ্ঞান পত্রিকা: ঢাকা বিশ্ববিদ্যালয় স্টাডিজ, খণ্ড ১১, সংখ্যা ১১*।
- বড়ুয়া, মৌরিন। (২০১৫)। *উচ্চ-দক্ষতাসম্পন্ন অটিস্টিক শিশুদের যোগাযোগ-দক্ষতার প্রকৃতি: একটি প্রতিবেদন প্রক্রিয়ার বিবরণ*। *বাংলাভাষী অটিস্টিক শিশুদের ভাষা সমস্যা* (ড. হাকিম আরিফ সম্পাদিত) পৃ. ১০২-১১৪। ঢাকা: অন্বেষা প্রকাশন।
- হোসেন, মারুফা। (২০০৯)। *অটিজম কী এবং করণীয়*। ঢাকা: তরী ফাউন্ডেশন।
- Adams, C (2005). Social Communication Intervention for School-Age Children: Rationale and Description. *Seminars in Speech and Language*, 26 (3), 181-188.
- American Psychiatric Association (1994). *Diagnostic and Statistical manual of mental disorders* (4th ed, DSM-IV). Washington, DC: America

- Charman, T. & Stone, W. (2006). *Social and Communication Development in Autism Spectrum Disorders. Early Identification, Diagnosis and Intervention*. New York London: The Guilford press.
- Hodgdon, Linda (2001). *Improving Communication and Behavior*. Troy: Quirk Roberts Publishing
- Quill, Kathleen Ann. (2000). *DO-WATCH-LISTEN-SAY: Social and communication Intervention for Children with Autism*. Paul H. Brookes Publishing Co. Baltimore
- Turkington, C. & Anan, R. (2007). *The Encyclopedia of Autism Spectrum Disorders*. New York: Facts on File, Tnc.
- Wetherby, A.M. (2006). Understanding and Measuring Social Communication in Children with Autism Spectrum Disorders. In Tony Charman & Wendy Stone (eds.) *Social & Communication in Autism Spectrum Disorders*, pp. 3-34. New York and London: The Guilford Press.

Biography

Sayed Asia Akter has been working as a Lecturer of the Department of Audiology and Speech language Pathology in Proyash Institute of Special Education and Research (PISER) since 2019. She completed her MPhil in 2022 from the Dept. of Communication Disorders, University of Dhaka. She did her BA and MA degree from Dept. of Linguistics, University of Dhaka. She also received the prestigious Dean's Award of Academic Recognition for achieving the highest CGPA in MA examination in 2013. She has been involved with different academic and research as well as co-curricular activities. Along with her native tongue Bengali, she speaks English as a second language. Sayeda Asia Akter can be reached at asia.lin.du@gmail.com.