

ASSESSMENT OF PRAGMATICS IN VERBAL AUTISTIC CHILDREN AFTER SPEECH THERAPY

Original Research

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ABSTRACT

BACKGROUND: Autism Spectrum Disorder (ASD) significantly impacts communication, with pragmatic language deficits representing a core challenge that extends beyond basic linguistic competence to affect social interaction and functional communication.

OBJECTIVE: This study assessed pragmatic language skills in verbal autistic children aged 5-8 years following speech therapy intervention, using the Functional Communication Profile Revised (FCP-R).

MATERIALS & METHODS: A cross-sectional descriptive study was conducted from May to December 2024 across multiple centers in Lahore, Pakistan. The sample comprised 110 verbal autistic children who had received speech therapy for 1-4 years. Data was collected using an FCP-R-based semi-structured questionnaire and analyzed using SPSS.

RESULTS: Nearly half of participants (49.1%) communicated at word level, 41.8% at phrase level, and only 9.1% at sentence level. While basic communicative functions showed relative strength—74.5% gained attention and 69.1% responded to yes/no questions—higher-order social skills remained challenging. Only 18.2% made friends, 30.9% socialized, and 38.2% asserted themselves. The majority (67.3%) had received 1-2 years of speech therapy.

CONCLUSION: Verbal autistic children demonstrate heterogeneous pragmatic profiles, with relative competence in foundational communication skills but persistent difficulties in complex social interactions. These findings underscore the necessity for individualized, developmentally appropriate interventions that systematically address both basic and advanced pragmatic competencies.

KEY TERMS: Autism spectrum disorder, pragmatic language, speech therapy, social communication, FCP-R, verbal autism.

INTRODUCTION

Autism Spectrum Disorder (ASD) represents a complex neurodevelopmental condition that significantly impacts communication, social interaction, and behavior patterns. The term "autism" originates from the Greek word "autos," meaning "self," and was first applied by Swiss psychiatrist Eugen Bleuler in 1908 to describe the withdrawal from reality observed in schizophrenia patients¹. Leo Kanner later adopted this terminology in 1943 to characterize children who exhibited linguistic difficulties and social isolation without schizophrenia or other recognized mental illnesses, noting their repetitive behaviors, loss of interest in social activities, and challenges in connecting and communicating with others². Subsequently, Hans Asperger in 1944 distinguished between socially isolated children with and without language disorders associated with autism, leading to the identification of what became known as "Asperger's Syndrome"³. Globally, autism affects approximately one in every 100 children, though prevalence estimates vary considerably across studies⁴. When comprehensive investigations first began in the 1960s, the estimated incidence was approximately 4 per 10,000 people; contemporary estimates for the full autism spectrum approach 60 per 10,000, representing a fifteen-fold increase that has raised concerns about a potential outbreak⁵. This dramatic rise in diagnosed cases underscores the growing importance of understanding and addressing the multifaceted communication challenges associated with ASD.

While considerable research attention has focused on structural language components such as vocabulary and grammar, pragmatic language skills, the practical use of language in social context remain comparatively under-assessed in verbal autistic children⁶. This gap is particularly concerning given that pragmatic deficits constitute one of the two essential symptom domains for ASD diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, alongside confined stereotyped behaviors⁷. Pragmatics encompasses the study of how utterances function as specific examples of speakers' deliberate conduct at times and places, examining how meaning is created beyond literal interpretation and how individuals interact through language⁸. Children with autism who experience pragmatic language impairment encounter difficulties utilizing language in social situations, including challenges reading nonverbal cues, comprehending irony or idioms, and adhering to social norms in discourse Adams⁹. These difficulties manifest across various communicative functions, from basic acts such as making requests and gaining attention to more complex social behaviors including friendship formation, expressing gratitude, and engaging in reciprocal conversation. Pragmatic language issues are frequently observed in conjunction with other developmental concerns; approximately half of children with ASD are reported to experience language difficulties, with pragmatic impairment often emerging as the primary symptom¹⁰. Children with pragmatic and social communication deficiencies face significant risk for long-term behavioral and social disadvantage, frequently experiencing severe language difficulties and additional autism spectrum manifestations¹¹.

The technical description of pragmatics as language usage in social contexts encompasses both verbal (speaking) and non-verbal (gestures) abilities, and can be separated into distinct domains including discourse management (the ability to start, carry on, and conclude discussions), narrative discourse (the ability to tell engaging stories), and presupposition (conjectures about conversation partners, specific social settings, and one's theory of mind)¹². Understanding these multifaceted components is essential for comprehensive assessment and intervention planning. Speech therapy serves as a primary intervention approach for addressing communication deficits in individuals with ASD. The discipline focuses on helping people with speech and language impairments communicate more effectively through collaboration with speech-language pathologists who address problems with articulation, fluency, and language comprehension¹³. For individuals with autism, speech therapy can be particularly beneficial in addressing various communication issues, including enhancing verbal abilities like articulation and fluency to facilitate clearer communication, developing pragmatic language skills that help navigate social relationships, and strengthening the ability to take turns in conversation and interpret nonverbal cues¹⁴. Research indicates that speech and language therapy for children with autism spectrum disorder yields improvements in speech, vocabulary, verbal and nonverbal communication, and sentence structure¹⁵.

The evaluation of pragmatic skills in verbal autistic children after the speech therapy treatment interventions is valuable information on the efficiency of the treatment and the continuous support requirements. Testing pragmatics involves the assessment of the ability of an individual to use language in social settings, and it usually involves noting and assessing the ability to talk, perceive social behavior and respond to social behaviors, and adapt speech to different circumstances¹⁶. Assessing the pragmatics of verbal autistic children, the primary emphasis is made on language application in social environments, including the ability to have a proper conversation by means of taking turns, staying on point, and adjusting the speech to the specifics of a social situation¹⁷. The assessment also includes the understanding and reaction of children to nonverbal communication factors such as body language and facial expressions to their response and social situations, like greeting and asking¹⁸. Although the role of pragmatic competence in ensuring social integration as well as academic success is acknowledged, standardized measurement instruments that specifically test these competencies in verbal autistic children have been scarce. Ranging between simple requests and attention-seeking skills on one end and intricate social skills such as building friendships and self-assertion on the other end, the Functional Communication Profile Revised (FCP-R) provides a systematic approach to the analysis of pragmatic skills¹⁹. The tool offers a methodological way of determining the definite spheres of strength and weakness in the pragmatic domain so that the clinicians can formulate more specific intervention strategies.

The existing literature indicates that there is a wide range of variations in development of pragmatic skills in verbal autistic children. Studies comparing pragmatic competence in children with ASD without intellectual disability have shown that pragmatic children have lower performance on most of the pragmatic characteristics used as these factors include theory of mind, verbal working memory, symptoms of ADHD, and structural language that all are related to pragmatic competence²⁰. The contextually sensitive materials and studies have been able to detect social-pragmatic inferencing problems in high-functioning children with ASD in

structured test settings and revealed that children who have autism spectrum disorder and typically developing children differ in their ability to solve problems that require the use of context²¹. Also, studies have demonstrated that different components of pragmatic difficulties might be noticed by parents and teachers, and in this regard, teachers discovered that pragmatic language abilities and abilities of adolescents with ASD are significantly at their lowest point than in typically developing groups²². The plasticity of pragmatic abilities is promising based on intervention research. The intervention of a group therapy (15 sessions) on communicative-pragmatic ability showed that verbally competent adolescents with ASD improved their performance after the intervention²³. Likewise, the study of verbal and nonverbal communication teaching to autistic children showed that the use of both communication methods by the therapists could lead to the improvement of social interaction and communication skills, and the outcomes were different depending on the severity of autism in individuals²⁴. These results highlight the fact that significant improvement in pragmatic competence can be achieved with the help of properly structured interventions.

In discussing pragmatics after speech treatment, the emphasis is put on assessing social communication achievements of verbal children with ASD and their capacities to engage in conversations, adapt language to various social situations, understand social cues, such as body language, facial expressions, and cope with social situations through interactions with adults and peer communication²⁵. Through the systematic evaluation of these results in comparison with the pre-treatment measurements, clinicians will be able to determine the effectiveness of interventions and inform required changes in support of plans²⁶. This method of assessment allows identifying which of the aspects of social communication positively respond to the intervention and which ones need other or more effective support strategies. The intra-subject variation in pragmatic profiles among verbal autistic children highlights the need to adopt extensive assessment methods to both obtain the acquired skills and still current areas of weaknesses. The knowledge about the concrete constellation of pragmatic strengths and challenges after speech therapy may be used to more tailored intervention plans, resource distribution, and long-term outcomes of children with ASD. Since pragmatic language impairment has been regarded as a source of many difficulties and has been proven to worsen the situation with peer interactions, school functioning and performance, and overall adjustment²⁷, the skills in question are one of the key aspects of a comprehensive set of autism intervention programs.

METHODS

The study was a cross-sectional descriptive study carried out between May and December 2024 in a total of seven special facilities in Lahore, Pakistan, namely PSRD Hospital, Children Hospital, Lahore Autism Center, Orion ABA Pakistan, Autism Resource Center, Speech lingua spot, and Autism Care Center. The study employed non-probability purposive sampling to recruit 110 verbal autistic children aged between 5 and 8 years whose speech therapy experience ranged between one to four years with calculations done using Epi Tool. Children who had comorbidities (ADHD, intellectual disability, hearing impairments), syndromes or non-verbal autism were excluded. The pragmatic abilities of communicative abilities in a variety of functional functions such as request, attention seeking, socializing, expressing gratitude, and responding to yes/no questions were assessed using a semi-structured questionnaire based on the Functional Communication Profile Revised (FCP-R). The questionnaire consisted of 17 items that were used to measure pragmatic ability. The data was observed by hand at study sites and processed with the SPSS software and descriptive and inferential statistical tests and methods to find the patterns and quantify pragmatic abilities. IRB approval of the study was through PSRD College Rehabilitation Sciences and parental consent was sought both in English and Urdu before the study and all the data were coded to have privacy.

RESULTS

Participant Demographics

A total of 110 verbal autistic children (mean age = 5.71 years (SD = 1.026), 5 to 8 years of age) were used in the research. The sample was 68 males (61.8) and 42 females (38.2), which is based on the proportion of genders in the diagnosis of autism. In terms of the length of intervention, most participants (67.3, n = 74) had been receiving therapy between 1 and 2 years and 32.7 (n = 36) participants had a period of speech therapy between 3 and 4 years.

Communication Level

Communication complexity analysis showed that almost 50 percent of the participants (49.1, n = 54) communicated at the word level, 41.8% (n = 46) communicated at the phrase level, and only 9.1% (n = 10) communicated at the sentence level (Rafiq, 2025). This distribution shows that most of the verbal autistic children in this sample were yet to acquire the basic skills of language despite already receiving therapeutic help.

Findings showed that there was a high level of variability in basic pragmatic skills. Most of the children (74.5 percent, n = 82) could deny or negate and the same proportion (74.5 percent, n = 82) could gain attention. Moreover, 65.5% (n = 72) of the participants could call or summon other people, and 60.0% (n = 66) of the participants could also show gratitude. Nevertheless, 38.2% (n = 42) were able to make requests, 49.1% (n = 54) were able to request more, and 40.0% (n = 44) were able to describe an item or an action. Demanded ability to give orders showed itself in 65.5% (n = 72) of participants.

Social Communication Skills.

The performance rates of higher-order social communication skills were significantly low. The ability to make friends was least expressed in 18.2% (n = 20) of the children, which is the most difficult pragmatic function to evaluate. In the same way, only

30.9% (n = 34) of respondents showed socialization skills, whereas 38.2% (n = 42) of the respondents were able to assert themselves (Rafiq, 2025). It had the capacity to seek approval in 41.8% (n=46) and apologise to other people in 40.0% (n=44). In terms of social interaction on a play-based, 38.2 percent (n = 42) of respondents were able to play with other people.

Conversational Skills

The conversational skills presented inconsistent results within the sample. More or less half of the sample participants (50.9, n = 56) were able to establish communication and 45.5 (n = 50) were capable of making remarks in interactions (Rafiq, 2025). Among others, it is noteworthy that a significant majority (69.1, n = 76) qualified to respond to yes/no questions meaning that he or she is comparatively strong in this primary receptive-expressive skill.

Table1: Demographic Characteristics of Participants (n = 110)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	68	61.8
	Female	42	38.2
Duration of Speech Therapy	1–2 Years	74	67.3
	3–4 Years	36	32.7
Age (Mean ± SD)	5.71 ± 1.026 years	—	—

Table2: Communication Levels of Verbal Autistic Children (n = 110)

Communication Level	Frequency (n)	Percentage (%)
Word Level	54	49.1
Phrase Level	46	41.8
Sentence Level	10	9.1

Table3: Basic Pragmatic Communication Skills (n = 110)

Pragmatic Skill	Frequency (n)	Percentage (%)
Deny / Negate	82	74.5
Gain Attention	82	74.5
Call / Summon Others	72	65.5
Give Orders	72	65.5
Show Gratitude	66	60.0
Request	42	38.2
Request More	54	49.1
Describe Item / Action	44	40.0

Table4: Social Communication Skills (n = 110)

Social Communication Skill	Frequency (n)	Percentage (%)
Make Friends	20	18.2
Socialization	34	30.9
Assert Oneself	42	38.2
Seek Approval	46	41.8

Apologize	44	40.0
Play with Others	42	38.2

Table 5: Social Communication Skills (n = 110)

Conversational Skill	Frequency (n)	Percentage (%)
Initiate Communication	56	50.9
Make Remarks in Interaction	50	45.5
Respond to Yes/No Questions	76	69.1

DISCUSSION

This study results offer valuable information about the pragmatic language of the verbal autistic children after being under speech therapy. The sample is representative of the population in the sense that 61.8% of the respondents were males, which is consistent with the literature that described that males were the dominant cases in autism diagnoses. The average age of 5.71 years is such a critical stage of development that the requirements of social communication are significantly large, and the pragmatic assessment is especially topical at this age²⁸. The distribution of communication levels, where 49.1 percent of children operated on word level with only 9.1 percent communicating on sentence level, is in line with the earlier research findings that show that autistic children often have difficulties transitioning between single word utterances to more complex sentence structure despite intervention. This observation highlights the enduring aspect of the expressive language weakness of autism and is indicative of the fact that a large percentage of poised verbal autistic children would need prolonged assistance in acquiring more advanced linguistic skills²⁹.

The significant difference between the simple and high pragmatic skills is the key result of this research. However, children showed relative strengths in lower-order communicative functions like gaining attention (74.5%), denying or negating (74.5%), and answering yes/no questions (69.1), and showed major difficulties with higher-order social skills such as making friends (18.2%), socializing (30.9%), and asserting self (38.2). This tendency confirms earlier studies that suggest that functional communication is more commonly used by verbal autistic children in serving basic rather than social or expressive functions. The comparatively high capacity to deny or say no (74.5) can indicate that denial is an easier or more inspiring social interaction task among autistic children than more complex social interaction³⁰. The friend's friendship rate (18.2) and socialization (30.9) are much lower than the available literature which records that children with autism often have problems in developing social bonds because of their inability to interpret social signals and engage in mutual relationships. Nevertheless, the finding that almost a third of the subjects showed some form of social interaction is indicative that specialized interventions aimed at enhancing social skills can provide some utility to a group of verbal autistics children³¹.

A relatively good success rate in yes/no questions (69.1) compared to other conversational skills can indicate that a relatively simplistic method of using binary questions and wording can be used successfully with children with autism since it is easier to understand and respond to in contrast to open-ended interactions. Nevertheless, this area of strength in the ability to answer yes/no questions does not always correlate with more advanced conversational skills, which means that expressive language and spontaneous communication will continue to be a problem, even when receptive skills are acquired Pickles³². The speech therapy provision (67.3% 1-2 years and 32.7% 3-4 years) helps to justify the significance of early intervention and is in line with the previous studies, which have proven that children with autism who receive regular therapy at early age experience improvements in functional communication and language development. Nevertheless, the ongoing issues being exhibited despite several years of intervention indicate the necessity to continue individualized assistance not just simple speech and language training but more complicated social-pragmatic competencies training. Important clinical implications are also found in these findings. The measured strengths in the aspect of attention-gaining (74.5) and summoning behaviors (65.5) are the base skills on which further development in social communication can be imposed. Turn taking, greeting, and reciprocal social games are the intervention programs which put emphasis on these strengths which are observed to help the verbal autistic children develop increased social competence Ingersol. The high range of pragmatic skills among participants indicates the importance of individualized assessment and intervention planning which considers the areas where the deficits exist and capitalizes on the areas of communicative competencies which are already present. Finally, this research is found to demonstrate a pyramid pattern of the development of pragmatic skills among verbal autistic children where the basic communicative functions bear greater acquisition compared to highly complex social-pragmatic functions after speech therapy. The results indicate that detailed long-term interventions should be made with the focus on not merely basic communication, but complex social language skills without which it would be impossible to participate in social life and build meaningful relationships.

CONCLUSION

In general, it was found that verbal autistic children were more competent in relation to more basic communicative functions such as gaining attention (74.5%), denying/negating (74.5%), and answering yes/no questions (69.1%) than more complex social-

pragmatic functions such as making friends (18.2%), socializing (30.9%), and asserting self (38.2%). This ability gradient between the basic and advanced pragmatic abilities points to the ongoing problems in social communication that verbal autistic children face despite one to four years of speech therapy intervention.

AUTHOR'S CONTRIBUTION:

Author	Contribution
Minahl Rafiq	Conceptualization, Methodology, Formal Analysis, Writing - Original Draft, Validation, Supervision
Dania Tahir	Conceptualization, Methodology, Formal Analysis, Writing - Original Draft, Validation, Supervision
Ayesha Rashid	Supervision; methodology design; writing – review & editing; project administration; funding acquisition.
Hassan Rafiq	Data collection; investigation; software & experimental protocol setup; validation; data curation
Ahmad Rafiq	Resources provision; supervision of fieldwork; writing support; ethics & compliance oversight; final approval

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