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# Assessing Socio-Communicative Abilities and Presence of Problematic Behaviours in Children with Autism: A Quantitative Descriptive Investigation

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**ABSTRACT**

An investigation of behavioural problems and clinical variables among children with autism employs a quantitative descriptive research design. Social and emotional development of children with autism differs from that of their typically developing peers. Having difficulty interacting with others and forming relationships is one of the most prominent signs of autism. An extensive literature search found that play therapy and social skills therapy aren't commonly used for children with autism spectrum disorders. With frequency tables, both demographic and research variables of the study samples will be analyzed for their qualitative distributions (i.e. closed ended values). Data on socio-demographic variables and clinical variables were collected through the socio-demographic section of the questionnaire. A set of ASSP and ABAT tools was used to measure the participants' social skills and behavior. Statistical differences between the demographic variables of children with autism in experimental groups I and II before intervention were calculated with the chi-square test. Despite the non-significant 'p' value ($P>0.05$), the experimental I, II, and control groups did not differ significantly. Both the groups were almost similar and comparable. Children with autism can benefit from more targeted interventions and support strategies, which will improve their well-being and quality of life. As a result, parents, caregivers, and healthcare professionals may gain a better understanding of how to cope with the behavioral symptoms of autism spectrum disorder.

**Keywords:** Autism spectrum disorder, Behavioral problem, Play therapy, Social skill intervention, Clinical variables

## INTRODUCTION

An autism spectrum disorder (ASD) also known as autism, is a neurological condition characterized by a variety of symptoms. Children with autism spectrum disorder often display complex brain and developmental changes during their early years [1]. Children with autism face challenges in their social and emotional development that differ from their typically developing peers. Unlike their friends, these children struggle to initiate and participate in play activities, comprehend the notion of taking turns, establish and nurture friendships, and engage in enjoyable social interactions. There are several types of autism spectrum disorders (ASD), including autism, Asperger's disorder, childhood disintegrative disorder, Rett's disorder, and pervasive developmental disorder. Recently, the DSM-5 has revised its classification of these disorders, which used to share fundamental characteristics [2,3]. These difficulties hinder their ability to grow socially and emotionally in a manner that aligns with their peer's development [4, 5]. These core symptoms encompass challenges in social interactions and relationships, difficulties in verbal and nonverbal communication, restricted and repetitive behavior patterns, and additional characteristics related to movement. One of the primary indicators of autism is the

impairment in social interactions and relationships. Social interactions that come naturally to neurotypical individuals may require additional support and intervention for individuals with autism. Another key symptom of autism is the presence of communication difficulties. Communication impairments can significantly impact an individual's ability to engage in everyday conversations and express their thoughts and emotions. Individuals with autism often engage in restricted and repetitive patterns of behavior or play. Repetitive behaviors can provide comfort and predictability for individuals with autism but may also interfere with their ability to adapt to new situations or engage in activities that require flexibility.

Children with autism can exhibit their first or second signs of autism by the time they are 3 years old [6]. Early detection and treatment of autistic developmental delays can be achieved. Many children with ASD are not diagnosed until they reach school age, and they are not provided with the appropriate interventions until then. Behavioral and development interventions as well as medicine and alternative treatments are available for ASD. This study examines the level of social skills and communicative abilities among children with autism.

## METHODOLOGY

### Sample selection

The sample in this study were children with autistic disorder, both male and female (n=147) grouped as experimental I (76) and II (71) who are attending in the selected autism centers in Chennai and nearby areas and who meet the inclusion criteria.

### Inclusion criteria

- Age: 6 to 16 years
- Grade of study: second to $^{+}1$ students
- Gender: Both male and female
- Level of autism: Mild to moderate

### Exclusion criteria

- Disorders like IDD, ADHD, Conduct disorders and Spastic disorders etc.,
- Deficits in communications may interfere the intervention or assessment

### Ethical consideration

Permission and ethical approval for conducting pilot and main study was obtained from the respective department. Informed written consent was obtained individually from the parents and assent form from study subjects participated in the research study. Assurance was given to maintain the dignity and confidentiality of data concerned to each study subjects.

### Study design

A quantitative descriptive research design will be utilized in this study to assess the prevalence of behavioral problems and clinical variables among children with autism. A survey method will be used by the researcher to evaluate the behavioral problems of children with autism. Comparison of selected parameters among children with autism in experimental group I and experimental group II will be done.

| Group | Assessment |
|---|---|
| 1 | o-1 |
| 2 | o-1 |

o-1: Assessment of demographic variables and clinical variables

**Tools used**

The study used a tool with two sections:

- deals with demographic variables of the study subjects
- deals with clinical variables of the study subjects

**Demographic Variables**

These variables may encompass age, gender, ethnicity, education, income, residence, maternal occupation, assessor-child relationship, and prior experience with children with similar disabilities, among others.

**Clinical Variables**

These factors may encompass the questionnaire over timing of diagnosis, symptom detection, treatment approaches, communication difficulties, atypical movements, gaze engagement, speech patterns, self-feeding capabilities, and other clinically relevant aspects.

**Data analysis**

The distribution of the all quantitative values of variable for the subjects will be examined with descriptive statistics (such as Mean, and Standard deviation). The distribution of all qualitative (i.e. close ended) values of variable for both demographic and research variables of the study samples will be examined with frequency tables. The statistical analysis will be done in SPSS (Statistical Package for Social Sciences) Package with version 28.

**RESULTS & DISCUSSION**

The table 1 shows the frequency and percentage distribution of demographic variables of children with autism. In terms of age, the participants were split into two age groups: 6 to 10 and 11 to 15. The participants aged 6 to 10 included 70, whereas those aged 11 to 15 comprised 72. Children with autism, both boys and girls, participated in the study. There were 51 females and 96 males among them. Eighty of the children are from urban areas, and the remaining 67 are from semi-urban areas. Twenty-one students were in third grade, 106 were in second grade, and 106 were in fifth grade. Assessors who had postgraduate degrees, carried out assessments demonstrating that they had received in-depth academic study in relevant disciplines. Most of the time, physiotherapists with whom they had worked regularly evaluated children with autism. Three age groups of mothers participated in the study: 33 between the ages of 19 and 24; 50 between the ages of 25 and 30; and 64 between the ages of 30 and 34. Forty-eight mothers had finished their primary education, 59 had finished higher secondary school, and 40 had finished graduation from college or above. Among the mothers of the samples, ninety-two unemployed mothers, 22 working in the private sector, 20 in the public sector, and 13 were self-employed. The study included 120 families with an income between Rs. 5001 and Rs. 15,000 per month, 10 families with an income under Rs. 5000 per month, and 7 families with an income over Rs. 15,000 per month. None of the families had any prior experience working with children who had similar difficulties. The study found that 28 of the participants (participant's family) learned about autism from the media, 27 from healthcare providers, and 92 from other sources.

Table 2 shows information about clinical variables among children with autism. Among the participants, autism diagnosis was found to be made at ages 1-2 with a frequency of 26, 2-3 with a frequency of 72, and 3-4 with a frequency of 49. Based on the study, mothers are more likely than fathers to notice the first signs of autism in 56 cases compared to 50 cases by professionals and 41 cases by fathers. Children with autism who participated in the study were enrolled in their present schools for 3 months to 1 year in 23 cases or for 1 year to 2 years in 124 cases. None of the autistic children in the research, received therapy outside of their educational setting.82 (around 60 %) of the participants were found to have issues with communication. However, 95 % (140) of them were reported to be involved in the interaction while communicating. Hundred and eighteen of them were reported to exhibit repetitive/ stereotypical movements, while 88 (around 60 %) of the participants showed

repetitive/ stereotypical speech patterns while talking about some subject. Sixty-four autistic children were found to have difficulty in understanding sign language and 102 avoided maintaining eye contact while interacting or communicating. Hundred and twenty-eight out of the total 147 children were found to be able to feed themselves.

**Table: 1 Distribution of Demographic Variables of children with autism**

| | **Demographic Characters** | **Frequency** | **Percentage** |
|---|---|---|---|
| **1** | **Age group** | | |
| | 6 – 10 | 75 | 51.0 |
| | 11 – 15 | 72 | 49.0 |
| 2 | **Gender** | | |
| | Male | 96 | 65.3 |
| | Female | 51 | 34.7 |
| 3 | **Location** | | |
| | Urban | 80 | 54.4 |
| | Semi Urban | 67 | 45.6 |
| 4 | **Class** | | |
| | Second | 106 | 72.1 |
| | Third | 21 | 14.3 |
| | Fifth | 20 | 13.6 |
| 5 | **Qualification of the assessor** | | |
| | Post Graduate | 147 | 100 |
| | Under graduate | 0 | 0 |
| 6 | **Relationship of assessor with the child** | | |
| | Physio Therapist | 147 | 100 |
| | Primary caregiver | 0 | 0 |
| | Teacher / attender | 0 | 0 |
| 7 | **Age of mother** | | |
| | 19 – 24 | 33 | 22.4 |
| | 25 – 30 | 50 | 34.0 |
| | 30 – 34 | 64 | 43.5 |
| 8 | **Educational Status of mother** | | |
| | Primary Education | 48 | 32.7 |
| | Higher Secondary | 59 | 40.1 |

| | | | |
|---|---|---|---|
| | Graduation and Above | 40 | 27.2 |
| 9 | **Occupation of mother** | | |
| | Self Employed | 13 | 8.8 |
| | Private Sector | 22 | 15.0 |
| | Public Sector | 20 | 13.6 |
| | Unemployed | 92 | 62.6 |
| 10 | **Family Income** | | |
| | Below Rs.5000 per Month | 10 | 6.8 |
| | Rs. 5001 - Rs. 15,000 per Month | 120 | 81.6 |
| | Above 15,000 per Month | 17 | 11.6 |
| 11 | **Experience in handling children with similar disability** | | |
| | Yes | 0 | 0 |
| | No | 147 | 100 |
| 12 | **Source of information about autism** | | |
| | Media | 28 | 19.0 |
| | Internet | 0 | 0.0 |
| | Health Personnel | 27 | 18.4 |
| | Other Sources | 92 | 62.6 |

**Table: 2 Distribution of clinical Variables of children with autism**

| | **Clinical variables** | **Frequency** | **Percentage** |
|---|---|---|---|
| **1** | **Age of child at the time of autism diagnosis** | | |
| | 1-2 years | 26 | 17.7 |
| | 2-3 years | 72 | 49.0 |
| | 3-4 years | 49 | 33.3 |
| 2 | **Who identified initial symptoms?** | | |
| | Father | 41 | 27.9 |
| | Mother | 56 | 38.9 |
| | Professionals (Psychiatrists, paediatrician etc.) - 3 | 50 | 34.01 |
| 3 | **How long the child has been at the current school?** | | |
| | 3 months to 1 year | 23 | 15.6 |

| | | | |
|---|---|---|---|
| | >1 year | 124 | 84.4 |
| 4 | **Does the child undergo any therapies outside school? If yes, mention details (name & duration)** | | |
| | | 0 | 0 |
| | Yes | 147 | 100 |
| | No | | |
| 5 | **Does the child have impaired communication?** | | |
| | Yes | 82 | 55.78 |
| | No | 65 | 44.22 |
| 6 | **Is the child involved in the interaction while communicating?** | | |
| | Yes | 140 | 95.23 |
| | No | 10 | 4.77 |
| 7 | **Does the child exhibit repetitive/ stereotypical movements?** | | |
| | Yes | 118 | 80.27 |
| | No | 29 | 19.73 |
| 8 | **Does the child have difficulty in understanding sign language?** | | |
| | Yes | 64 | 43.54 |
| | No | 83 | 56.46 |
| 9 | **Does the child exhibit repetitive/ stereotypical speech pattern while talking about some subject?** | | |
| | Yes | 88 | 59.86 |
| | No | 59 | 40.14 |
| 10 | **Does the child avoid eye contact while interacting or communicating?** | | |
| | Yes | 102 | 69.39 |
| | No | 45 | 30.61 |
| 11 | **Can the child feed self?** | | |
| | Yes | 128 | 87.07 |
| | No | 19 | 12.93 |

The number of autism cases has also been attributed to a variety of factors, including genetics, obstetric complications, parental characteristics, environmental toxicants, and the availability of school and community resources. **[7, 8, 9, 10].**

With a range of ages from birth to adulthood, there was a prevalence of ASD ranging from 0.019 to 7.2% in European countries. [11]. In our study, we found that there is a higher prevalence of ASD in urban children. Other studies around the world have found similar results. [12, 13]

There was an increase in risk of ASD with increased urbanization. [14,15] This discrepancy might be caused by factors related to the environment. Children who lived in urban areas were diagnosed with ASD at an earlier age than children living in rural areas, according to another study. Urban children may have better access to medical resources than children in rural areas. [16-18]

Similar to studies in other countries, the present study found that more male children were diagnosed with ASD than female children. [19,20] In a study conducted on 1410 children with ASD aged 4 years and above from 18 European countries, females were diagnosed at a later age than males (after controlling for language ability) [21]

In order to promote parental awareness and to recognize the early signs of autism spectrum disorder, education about ASD should be strengthened. The findings of current study found that majority of the children were diagnosed with ASD between 2-3 years

In most developed countries, ASD is diagnosed later than 18 months of age, even though it can be diagnosed at an early age when children are 18 months of age. Since 2004, the diagnosis age for British children with Autism Spectrum Disorder has been 55 months; over the past decade, this figure has not decreased, meaning the rate of early diagnosis has remained the same. [22].

Most ASD diagnoses in children are confirmed after the age of 3 and between 1/3 and 1/2 are confirmed after the age of 6. Moreover, those diagnosed with mild ASD between the ages of 5.6 and 8.6 were diagnosed at preschool age (3.7–4.5). [23]. According to the latest meta-analysis, children under 10 are diagnosed with ASD on average at 60.48 months and at 43.18 months in the global population. It has been confirmed in multiple recent studies that individuals, families and society are involved in early diagnosis of autism spectrum disorders, but most of these results are still controversial or unexplored. [24]

The Autism Spectrum Disorder was diagnosed in 10 children out of 100 aged 5-10 years. Rural and tribal areas should be the focus of future studies. The risk of getting diagnosed with autism is higher in male children than in female children. Policies and programs for children with developmental disabilities must be based on an accurate estimate of the prevalence of ASD in India. [25]

Supporting a child with autism is a mother's responsibility. Besides driving decisions, they are also responsible for delivering interventions. Furthermore, mothers expressed financial strain associated with current and future treatment expenses due to the overall cost of care. The findings are consistent with a number of studies that demonstrate that parents with autistic children are less likely to earn a good living, while others are forced to work long hours or change jobs to afford their child's education and medication. [26,27]. Children's overall development and well-being are heavily influenced by the educational status of their mothers.

Mother's education has been discussed in numerous articles in relation to their children. Researchers have consistently found that mothers who have graduate themselves are better at providing a supportive learning environment for their children [28]. Moreover, they tend to have better access to a wide variety of educational resources, a supportive academic environment, and role models who value education. Conflicting findings have been found in past studies of parental occupation and ASD. It has been demonstrated that children of mothers who completed college have a greater likelihood of enrolling in and completing school. The impact of a mother's educational achievement on her children becomes even greater when she has graduated from college and above [29]. A bachelor's degree or higher is linked to increased academic achievement, self-esteem, and a lifelong love of learning in children of mothers with a bachelor's degree or higher. Children with autism are estimated to cost their parents up to $6200 in annual expenses, or 14% of their recorded income, according to a

study. [30] Compared to children with typically developing brains, autism had a 16-fold financial impact on Chinese families. [31] In contrast to our own research, a study reported that engineers are more likely to have children with ASD. According to our study, a greater percentage of parents were unemployed.

Children with autism are shown in the table 2, along with clinical variables relating to their condition. In the majority of cases, autism was diagnosed between the ages of 2 and 3. In addition, the table shows that mothers tend to observe autism signs more often than fathers or professionals, indicating the importance of parental observations in early autism detection. A similar finding shows, it was common for children with autism to not be diagnosed until they turn 3, despite the fact that health care providers are often able to recognize developmental problems prior to that [32]. Another study revealed that children with ASD may benefit from early screening, in order to get targeted interventions and monitor them more closely. In order to ensure that children at risk for ASD are recognized and evaluated as soon as symptoms appear, parents and professionals need to be aware of these early signs [33].

In terms of treatment facilities, private facilities were the most commonly used, suggesting specialized care may be preferred by families. A majority of children attend present schools for one to two years, with the duration of enrolment varying. One interesting finding was that none of the children received therapy outside of their educational settings, which indicates that the therapies they receive in the current centres were effective.

Autistic children also face communication challenges, with approximately 60% exhibiting difficulties. A positive aspect of these reports is that the majority of them were reported to be communicating. Movements and speech patterns of the participants were repetitive and stereotypical. According to the findings of a study, a significant proportion of participants without ASD also displayed stereotyped and repetitive behaviours. It was found that participants with ASD exhibited more stereotyped behaviors, such as self-injury, more frequently, and for longer periods of time. [34].

Children had significant difficulties understanding sign language and maintaining eye contact during interactions, suggesting they may require additional support in these areas.

Many of the children were able to self-feed, indicating some degree of independence in their daily lives. Autistic people may be more likely than those without autism to suffer from eating disorders symptoms, according to some researchers. A study found that autistic youth (aged 4–16 years) had higher levels of problematic eating behavior than matched general population controls. The chances of children with autism exhibiting picky eating behaviors were only marginally higher than those of their age- and gender-matched siblings and peers [35]. The majority of studies in which autistic individuals were compared to groups with other disorders and/or typical development found they were more selective in what they ate than those with other disorders or typical development.

## CONCLUSION

The importance of early diagnosis is one of the key factors of autism spectrum disorder (ASD) and is the focus of much research in the area of neurodevelopment disorders. Diagnostic approaches to ASD must be advanced through early detection and intervention strategies. A computational intelligence technique will be utilized in the proposed research project to enhance diagnostic methods. In order to provide a comprehensive understanding of this population, an in-depth analysis of behavioral patterns and associated clinical factors in the autistic population is being conducted. In addition, the study may provide insight into how parents, caregivers, and healthcare professionals can cope with behavioural symptoms associated with autism spectrum disorder.

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