



PROFILING COMMUNICATION BEHAVIORS IN MOTHER-CHILD INTERACTIONS: A COMPARATIVE STUDY OF AUTISM SPECTRUM DISORDER AND TYPICALLY DEVELOPING CHILDREN

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ABSTRACT:

From an early age, environmental stimulus is one of the first and most important aspects that influences children's language developments. The main caregiver, who is generally parents / grandparents, is a child's natural surroundings. Gestures, vocalization, plus verbalization are examples of interactional communicative actions or behaviors. These actions have a definite goal in mind and are aimed towards a specific individual, namely the communication partners. Child-directed communications refers to acts of communication aimed towards young kids by caretakers. Shorter vocal utterances with numerous repeats, copying of child's behavior, longer pauses among words and phrases, greater focus on words, accentuated intonation, and higher pitch are all characteristics of child-directed communications, often described as motherese.

KEYWORDS:- *Communication skills, Children, Autism etc.*

INTRODUCTION

Over the past, studies have shown a link between the regularity of child-directed communications and young children's languages development. Around the years, studies all over the globe have shown a substantial link among mother-child connection and advanced language patterns in subsequent development. Optimal caregiver-child connection is driven by a desire to engage and react on the part of both communicative partners. In such encounters, the partners usually work together to recognise and comprehend one other's nonverbal signs so that they may reciprocate and react correctly. Co-ordinated played a vital role and language development are influenced by this synchronisation among reciprocation and answers. According to research, caregivers but also children do not engage in a set way, but rather in a mutually controlled, dynamic, and flexible one. Children as early as neonates show a strong need to interact with others. The majority of newborns pay special attention to cues that help them gain linguistic abilities. Child-directed communications, characterised by positive emotion, progressively varied pitch, fewer words & content, and more repeats, is favoured by infants and young children. Further communicative behaviours, like facial expressions, gazing, gestures, body languages, distance among mother and children, posture during communication, and so forth, support early language developments in addition to these speeches and language elements of child-directed communications.

Child-directed communication in children with developmental delays

In typically developing (TD) kids, parent-child relationships account for around 20% of the variation in communicating, socialisation, emotions, and cognitive, and about 30% in kids with developmental delayed ("Mahoney & Nam, 2011"). Caregivers of children having developmental delays often use a variety of engagement tactics to compensate for such children's communicative challenges. During any event, these parents keep a closer eye on their children and prefer to physically hold them. Autism spectrum disease is one of the developmental illnesses with the most profound communication issues (ASD). ASD is a complicated developmental disorder characterised by chronic difficulties in social interaction, social interactions and communicational skills, as well as constrained behaviours.

Communication skills in children with autism spectrum disorder

Kids with "autism spectrum disorder" (ASD) struggle to communicate in a variety of ways, from nonverbal to vocal. The majority of children having ASD, particularly those who are autistic, show shorter joint involvement, a lack of communication purpose, and restricted gestures. Even children having ASD who are talkative have limited



comprehensive language abilities, resulting in communicational breakdowns, inflexible stereotyped speech, and poor pragmatics. Kids with ASD show less social references and responsiveness, as well as fewer cases of sharing experiences as well as coordinated participation during play and interactions. These children's actions and answers are likewise unexpected and irregular. All kids with ASD have substantial challenges with social communication. A subgroup of them also has restricted linguistic repertoires. Furthermore, such children possess pre-linguistic but also sensory deficiencies, making it difficult for them to initiate and maintain social interactions.

"Wimpory, Hobson, Williams, & Nash" (2000) found that children with ASD had less intense and frequent gaze, as well as poor referential gazing and turn-taking abilities. Children having ASD spend much less time in operational or symbolic playing pretend as comparable TD classmates. These are visible, particularly while unstructured play or situations when an adult is not present. In children with ASD, the developments of pretend play is yet another predictor of subsequent communicational skills development. Due to the obvious illness, a general pressure on the parent-child interaction may have a detrimental impact on parental responsiveness as well as insecure attachments.

AIM OF THE PAPER

To profile and evaluate mothers' and children's communicational behaviours, as well as auxiliary aspects during interactions in kids having ASD and TD.

OBJECTIVES OF THE PAPER

The following factors were profiled and compared among mother-child dyadic relationships in the ASD, TD-CA, and TD-LL groups:

1. Mothers' vocal utterances (their kinds and intents)
2. Observed pragmatic activities (initiations and responds) in mothers
3. Observed pragmatic activities (initiations and replies) in children
4. Participation in the interaction
5. Interaction positioning

REVIEW OF THE LITERATURE

In early children, dyadic parent-child relationships aid general development ("World Health Organization, 2005"). Caring for, nurturing, and participating in meaningful relationship with parents as well as caregivers are all important aspects of raising young kids. Parental participation and interactions, especially communicational skills, are critical for children's general development ("Turnbull & Turnbull, 2001"). Parent-child contact accounts for over 20% of the variation in communicative, socially, emotionally, and cognitive developments in typically developing (TD) kids and approximately 30% in kids having developmental delays (DD) (Mahoney & Nam, 2011). The dynamic character of parent-child relationships, wherein parents adjust their techniques to suit changing wants and expectations of their youngsters on a regular basis, helps youngsters learn new abilities ("Hirsh-Pasek & Burchinal, 2006"). Furthermore, mothers' verbal replies to their children's vocalisations have an impact on vocabulary development and developing communication abilities ("Goldstein, Schwade, & Bornstein, 2009; Smith, Landry, & Swank, 2006; Huttenlocher, Vasilyeva, Waterfall, Vevea, & Hedges, 2007"). The research listed below give an in-depth knowledge of language, communications, and associated skills development in TD children and kids with autism spectrum disorder (ASD). Investigations into child-directed communications.

The capacity of children to imitate physical movements is crucial to their language and social development. TD infants mimic activities or items in both immediately and later settings from a young age, for example, by nine months of age kids are imitating actions or events in both immediately and later situations (Carver, 1999). Such imitation behaviours allow youngsters to share social experiences ("Meltzoff, 2005; Trevarthen, Kokkinaki, & Fiamenghi Jr, 1999") and know about the acts and motives of so many others ("Meltzoff, 2005; Trevarthen, Kokkinaki, & Fiamenghi Jr, 1999"). ("Meltzoff, 2005; Uzgiris, 1999"). Early social illustrative play is difficult to engage in, which impedes the development of shared attention, socially reciprocity, and concept of mind abilities ("Dawson, 1991; Meltzoff, 1999, 2005; Rogers & Pennington, 1991"). From an early age, TD children often copy



others. Kids Children with ASD, on the other hand, have significant difficulties imitating objects, mimicking facial and body expressions, and deferring imitation of activities on items ("Charman, Swettenham, Baron-Cohen, Cox, Baird, & Drew, 1997; Dawson, Meltzoff, Osterling, & Rinaldi, 1998; Rogers, Bennetto, McEvoy, & Pennington, 1996; Rogers, Hepburn, Stackhouse, & Wehner, 2003; Sigman & Ungerer, 1984; Stone, Ousley, & Littleford, 1997"). Early ("Dawson & Adams, 1984") and later linguistic competence in children with ASD are related to imitation skills ("Charman, Baron-Cohen, Swettenham, Baird, Cox & Drew, 2000, 2003; Haebig, McDuffie, & Weismer, 2013; Stone et al., 1997; Stone & Yoder, 2001"). In children with ASD, spontaneous imitation of behaviours linked to materials at 20 months corresponds with responsive language abilities at 42 months ("Charman et al., 2003"). In young kids with ASD, mechanical imitations at 24 months predicts expressive language competence at 48 months (Stone & Yoder, 2001). According to research, children with ASD frequently communicate through using words or phrases to control the behaviour from others (i.e., requesting or protesting). They seldom utilise their communicational behaviours to direct communication partners' attention to things or occurrences of common interest, or to provide information (Rollins, 2016).

Sigman and Ruskin (1999) found protodeclarative joint attentional abilities to be related with early linguistic competence between all children in a continuous study of social competency and languages skills in kids with ASD plus Down Syndrome. The researchers looked at both short-term (one year later) as well as long-term (eight to nine years later) increases in expressive languages capacity. Early protodeclarative joints attention (3-6 years of age) was shown to be associated with subsequent peer relationships in the research (10-12 years of age). The findings also revealed that protoimperative joints attention abilities were associated with early language abilities and short-term advances in expressing language skills, but not with long-term improvements.

PARTICIPANTS

- A total no. of 150 mother-child pairs took part in the research. Such dyads belonged to 1 of three categories, as listed below:
- Autism Spectrum Disorder (ASD) groups (n=50): Children having ASD's mother-child dyads
- TD-CA group (n=50): TD mother-child dyads matching for ASD children's chronologically age (2-4 years).
- TD-LL group (n=50): TD mother-child dyads with children in the ASD group were matched for language skills.

As in TD groups (TD-CA & TD-LL), mother-child dyads were selected from diverse regions of Chennai and also its suburbs. A couple of them were snatched up from childcare schools in Chennai as well as the surrounding areas. Figure 1 depicts the geographical distributions of participants in the Chennai district.

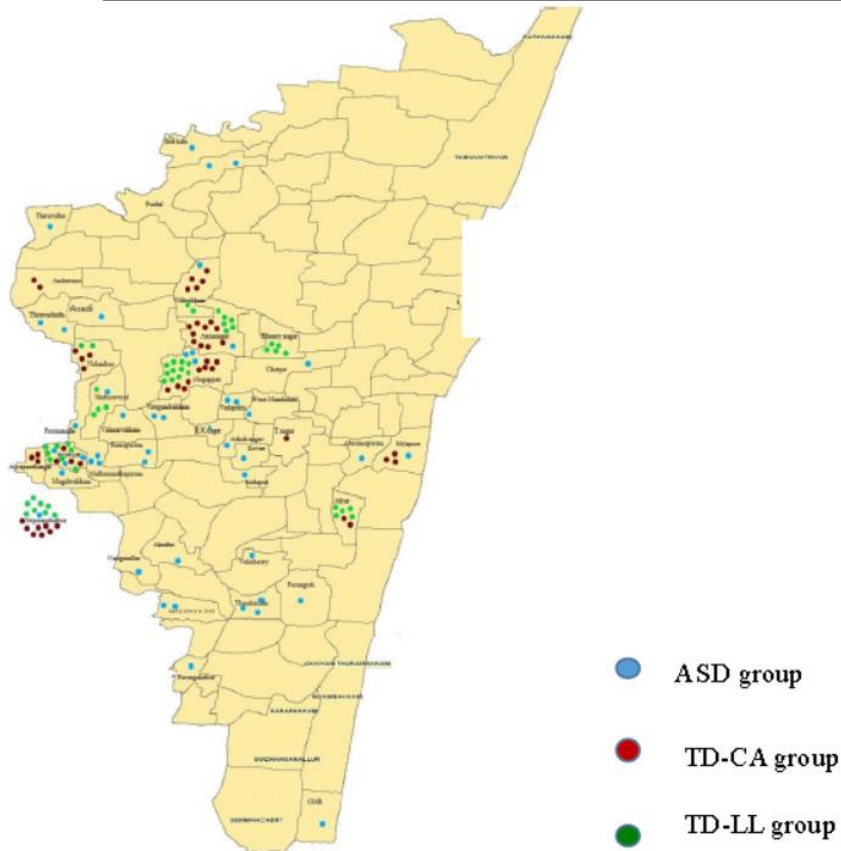


Figure 1: Geographical location of mother-child dyads who participated in the study, represented in Chennai district map

Description of tests used for the study

Childhood Autism Rating Scale 2 (CARS 2)

In India, the "Childhood Autism Rating Scale 2" ("CARS 2; Schopler, Van Bourgondien, Wellman, & Love, 2010") is a frequently used diagnostic instrument for ASD diagnosis. It examines children's behaviour in terms of social relationships, imitations, emotional responses, body languages, object usage, change adaptability, sensory stimulative response, communications (verbal and nonverbal), activity levels, and so forth. The grading is based on the amount of deviation of the particular behaviour and is performed on a scale from 1 to 4. Scores vary from 15 to 60. A score of more than 30 was used to diagnose children with ASD. Children's CARS 2 scores in this research varied from 30 to 52 ("M = 40.12; SD = 3.53").

DSM 5 Criteria

The "American Psychiatric Association's" (APA; 2013) DSM 5 criteria include a set of activities that are divided into two categories: social communications and interactions, and confined, repetitive behaviours. To identify a kid with ASD, the criteria specify a minimum range of behaviors in 2-D.

Assessment of Language Development (ALD)

ALD is a formalized test established by "Lakkanna, Venkatesh, and Bhat" for testing language skills of children from newborn to eight years as in Indian community (2008). This exam was administered using a specific graphic manual plus materials based on the requirements stated for each age level. Based on their responses to the stimuli, the test offered informations on the children's receptive as well as expressive language levels/ages.



Hanen's Stages of Communication Development

- Based on their intentions and expressing language abilities, Hanen's phases of communicational development ("Girolametto & Weitzman, 2006") classifies youngsters as discoverer, communicators, 1st-word user, and combiners.
- 'Discoverer' refers to youngsters just under 9 months of linguistic age who responded to stimuli but did not have the aim to speak.
- The term 'communicator' refers to youngsters who wanted to communicate and did so by gestures when they were 9-11 months old.
- 'First-word users' refers to youngsters who communicated using just one word, equating to a language age of 12 months.
- 'Combiners,' or youngsters who joined two or three words to construct rudimentary phrases, usually referred to children beyond the age of 15 months.

Group description

ASD group

CARS 2 & DSM 5 criteria were used to classify children with ASD. CARS testing was done as part of a standard clinical psychologist examination with the purpose of detecting ASD. When the scientist was recruiting volunteers for the experiment, he used DSM 5 criteria.

Inclusion criteria

Children

- Additionally, the relevant inclusion criteria being taken into account while selecting children with ASD:
- The youngster is between the ages of 2 and 4.
- Children who have just recently been found and have had no previous investigations or interventions. The maximum time between receiving a diagnosis and being enrolled in the research was four days.
- No particular parental worries about hearing as well as a 'Pass' in hearing screening done at such a level of 25dBHL at 500 Hz, 1 kHz, and 2 kHz using conditioning play audiometry/visual reinforcements audiometry/behavioural observations audiometry depending on the child's participation.
- Being exposed to Tamil as a major language of communications • Belonging to a middling socioeconomic position (upper and lower middle)

Mothers

- Predominant caregivers of ASD children
- Tamil as the main language
- No substantial self-reported complaints about hearing, visual, motor, cognitive, psychiatric, or neurological issues

Exclusion criteria

Children

- Children have a high likelihood of being diagnosed with Childhood Disintegrative Disorders, Asperger's Syndromes, or Rett's Syndrome.



- Seizures and/or symptomatic disorders in children

Table 1

Age of participants in the three groups

Age	ASD group		TD-CA group		TD-LL group	
	Child (in months)	Mother (in years)	Child (in months)	Mother (in years)	Child (in months)	Mother (in years)
Mean	31.16	32.15	31.51	29.13	20.18	28.71
(SD)	(4.25)	(4.00)	(4.40)	(3.15)	(3.57)	(4.89)
Range	24 - 39	27 - 37	24 - 40	25 - 36	11 - 24	22 - 33

ASD: Autism spectrum disorder; TD-CA: Typically developing children matched for chronological age; TD-LL: Typically developing children matched for language level.

TD-CA: Typically developing children compared for chronological age; TD-LL: Typically developing kids compared for linguistic level; ASD: Autism Spectrum Disorder.

Language levels in children having ASD are assessed.

The 50 children in the ASD group had their language ages assessed using "Assessment of Language Development" (ALD; "Lakkanna et al., 2008") and were found to vary among 12 and 40 months with dispersed scores. In addition to ALD, the language skills of such children were assessed using Hanen's phases of communicational development ("Girolametto et al., 2006") and categories such as discoverer, communicators, 1st-word user, and also combiner. Because the researcher is a Hanen licensed "speech-language pathologist" (SLP), she was able to categorise these youngsters according to their communication profiles.

Table 2

Distribution of children across various stages of communication development (language level)

Language levels	No. of dyads		
	ASD group (n = 50)	TD-CA group (n = 50)	TD-LL group (n = 50)
Discoverers	8	0	8
Communicators	21	0	21
First word users	18	0	18
Combiners	3	50	3

ASD: Autism spectrum disorder; TD-CA: Typically developing children matched for chronological age; TD-LL: Typically developing children matched for language level

CONCLUSION:-



The % of imperatives with proposal and provocative intentions; questions like "When," "Where," intonation-based queries, informative questionnaire, declarative When comparison to moms as in older TD group, communicative behaviours in both the "ASD and TD-LL groups" were reduced. Also, comparing the ASD and TD-LL groups, the time spent running about and the mom physically directing the kid to sit was longer. In addition, amidst the children's varying language skills and chronological ages, a few communicational behaviours listed in Table 42 were consistent throughout the three groups. Surprisingly, the majority of the communicational behaviours shown in the table were different across the three groups, suggesting the diversity of both child and mothers in all 3 groups. The communicational behaviours of mother-child dyadic relationships in the ASD and TD groups spanned a continuum with a few shared and distinctive characteristics. As a result, substantial quantitative and also qualitative variations in the mother-child relationship among ASD and TD groups (matching for chronological age and fluency) were discovered in the present research.

The communicational behaviours of youngsters are often assessed by specialists. Caregivers' inputs and replies are either ignored or not examined at all in kid-directed communications. Whenever a mother-child relationship is seen in most clinical settings, the emphasis of study is already on the child's communicative behaviours rather than the caregivers' contributions. The study's findings suggest that child-directed communications profiling should be included as a critical component of evaluation. This would aid in the proper assessment and identification of communication abilities in children with autism spectrum disorders. The communicational behaviours identified and analysed in this study might be used as a checklists for clinical and researches reasons when analysing mother-child interactions.

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