

**DEVELOPMENT OF A SCREENING CHECKLIST TO
ASSESS PROBLEM BEHAVIORS IN CHILDREN WITH
COMMUNICATION DISORDERS**

Ms. Sujisha M S

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Mysuru



ALL INDIA INSTITUTE OF SPEECH AND HEARING

Manasagangothri, Mysuru 570006

August 2022

CERTIFICATE

This is to certify that this dissertation entitled “**Development of a screening checklist to assess problem behaviors in children with communication disorders**” is bonafide work submitted in part fulfilment for the degree of Master of Science (Speech-Language Pathology) of the student with Registration Number 20SLP036. This has been carried out under the guidance of the faculty of this institute and has not been submitted earlier to any other university for the award of any other Diploma or Degree.

Mysuru

August, 2022

Dr. M Pushpavathi

Director

All India Institute of Speech and Hearing

Manasagangothri, Mysuru- 570006

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Mysuru

August, 2022

Guide

Mr. Freddy Antony

Assistant Professor

Dept. of Clinical Psychology

All India Institute of Speech and Hearing

Manasagangothri, Mysuru- 570006

Co-guide

Dr. K Yeshoda

Associate Professor in Speech Science

Dept. of Speech-Language Science

All India Institute of Speech and Hearing

Manasagangothri, Mysuru- 570006

DECLARATION

This is to certify that this dissertation entitled “**Development of a screening checklist to assess problem behaviors in children with communication disorders**” is the result of my own study under the guidance of Mr. Freddy Antony, Assistant Professor in Clinical Psychology, and co-guidance of Dr. K Yeshoda, Associate professor in Speech Science, All India Institute of Speech and Hearing and has not been submitted earlier to any other university for the award of any other Diploma or Degree.

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Registration No: 20SLP036

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“I will sing of the mercies of the lord forever”

Psalm 89.1

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Chapter 1

INTRODUCTION

Problem behaviors are acts by any person that have a negative impact on the external environment or pose a serious risk to one's health and safety (Eisenberg et al., 2001). Problem behaviors are often classified as internalizing or externalizing behaviors. Externalizing behaviors include destructive, hyperactive, and aggressive behaviors while internalizing behaviors include symptoms usually related to anxiety and depression (Achenbach, 1978). They are significant obstacles to accomplishing effective academic and social development (Horner et al., 1992). Young children with poor communication skills and social growth show more of these behaviors (Borthwick-Duffy et al., 1996).

1.1 Prevalence of early emerging problem behaviors

There is a growing concern about problem behaviors in various inpatient services, including services catering to children with communication disorders. The problem behaviors that many children develop in their early years may subside; however, there is a subset of children for whom the problems persist. There are no solid causal connections between contributing variables and subsequent behavior patterns in young children, but some factors such as sensory stimulation, gaining the attention of caregivers, avoiding demands, or expressing their limited communication skills are linked to problem behaviors.

As per parent and teacher accounts, almost 50 percent of speech and language impaired children had problem behaviors when compared to 12 percent of typical children without any speech and language impairment (Beitchman et al., 1986). Two streams of prevalence studies have explored the link between language issues and behavioral issues. While the first stream studied the prevalence of behavior issues in

children with language impairment the second stream looked into the prevalence and vice versa. For example, Benner et al. (2002) found a higher prevalence of 40 to 88% of behavior issues in children with language impairment. Another study reported a high prevalence of language impairments in children with behavioral (37%), emotional (36%), and social disorders (52%) (Lindsay et al., 2007).

Behavioral problems are mainly seen with attention deficit hyperactivity disorder, hearing impairment, anxiety disorder, learning disability, etc. A 2001 Australian study in children aged 4 to 17 years showed an overall prevalence (13.9%; 16.3% in males and 11.5% in females) of behavior issues, with attention-deficit hyperactivity disorder being the more prevalent disorder (7.4%), followed by generalized anxiety disorder (6.9%), depression (2.8%), and oppositional defiant disorder (2.1%), and psychiatric conditions (3.0%) (Sawyer et al., 2001).

According to a recent meta-analysis, 81 percent of children with Emotional and behavioral disorders had language deficits that were undefined, highlighting the fact that those children's language deficits weren't addressed, and therefore only their problem behavior was paid attention (Hollo et al., 2014). 68 to 97 percent of children who have emotional disturbances face difficulty in the language (Nelson et al., 2005). Thus, there is a need for further research on analyzing the strong correlation between problem behavior and language deficits.

1.2 Existing tools/measures

1.2.1 Screening tools for social-emotional and problem behaviors

The list of screening tools to measure social-emotional competence in infants and toddlers has increased in recent years. Most of those current screeners assess specifically on infants, toddlers, and preschoolers' social-emotional functioning rather than covering deficits and strengths. The 36-item Eyberg Child Behavior Inventory is

the major focus of the screening tools that have been developed (Colvin et al., 1999), for example, was devised for 2.5 to 11-year-olds despite showing reasonable validity and reliability.

The 40-item Toddler Behavior Screening Inventory (TBSI) questionnaire assesses behavior issues in children aged one to three years (Mouton-Simien et al., 1997). This has demonstrated significant subtlety in identifying children who had been referred to a psychologist (McCain, 1999).

One of the strength-based screening method is Devereux Early Childhood Assessment (LeBuffe & Naglieri, 1999). Three protective factor measures and a behavioral problem scale are included in the 37-item DECA, which can be used in children of age range 2 to 5 years.

The Ages and Stages Questionnaire Social-Emotional Version (ASQ-SE) is a potential screener which is used to assess behavioral and social-emotional issues in children aged birth to five years (Squires et al., 2002). Diagnosing children with social-emotional disorders and developmental delays, has shown adequate sensitivity and test-retest reliability (Squires, Bricker, & Twombly, 2002).

The Brief-Infant-Toddler Social-Emotional Assessment (BITSEA) is a 42-item assessment to detect social-emotional/ behavioral disorders in children aged 1 to 3 years (Briggs-Gowan, 2004). Both issue and competency indices are included in the BITSEA. The clinical validity of screening instruments like the BITSEA and ASQ-SE is yet to be determined.

It is crucial to note the sensitivity of these instruments in detecting clinically significant social-emotional/behavioral disorders (at least 80% of the time) yet have low sufficient false favorable rates (20% or less) that ensure systems are not overburdened.

1.2.2 Tools for assessment of problem behaviors

Clinical examinations and research studies that focus on clinical groups, or use profiles of issues and competencies, require more detailed assessments. Compared to screening instruments, one of the benefits of lengthier dimensional assessments is that, profiles of issues and skills may be analyzed for areas of relative strength and concern and for detecting groups of children who differ across score profiles.

The Child Behavior Checklist (CBCL) was designed by Achenbach and Edelbrock (1986) to measure children's behavioral symptoms. The CBCL was created to obtain a periodic report from parents who have noticed behavior in their children that might indicate psychological problems.

The Strengths and difficulties questionnaire (SDQ) is a commonly used psychological well-being measure for children and adolescents aged 4 to 17 years (Goodman, 1997). Despite being created for typically developing children, there is some indication that the SDQ may be appropriate for young individuals with intellectual disabilities.

For assessing behavioral and emotional symptoms, (Einfeld & Tonge, 1995) employed the Developmental Behavior Checklist Primary Carer Version (DBC-P). This test is for behavioral and emotional disorders in children aged 4 to 18 years. The sum of all questions yields a total behavior problem score of at least 46 suggested for recognizing clinically severe behavioral or emotional issues. More studies are needed to investigate if the DBC can be used to screen for particular diseases, including anxiety and autism spectrum disorders (Moseley et al., 2011).

In persons with intellectual disabilities, the problem behavior checklist, PBCL is a helpful measure of problem behavior. Its simplicity, compactness, and

reproducibility make it ideal for longitudinal research. It also appears to be a comprehensive measure to assess aggressive behavior (Tyrer et al., 2016).

The Behavior Problems Inventory (BPI) is a 29-item checklist for people with intellectual disabilities who involve in self-injurious, stereotypic, or aggressive behavior. In epidemiological investigations, the BPI was initially established to screen and categorize stereotypic and self-injurious behavior (Rojahn et al., 1989).

1.3 The need for the study

An effective referral system drives the referral process by giving access to proper patient records, sending patients to the right specialist, and offering low-cost, yet high-quality, diagnoses. But there is ambiguity in the management of children who have both behavioral and language difficulties on whether or when to make a referral for behavioral intervention. Hence, there is a necessity for such a study that can develop a quick screening checklist to determine problem behaviors and guide a proper referral in children with communication difficulties.

The coexistence of problem behaviors and speech-language communication issues are widely known. However, there is very limited research on the prevalence rates of these issues among children with communication disorders in general and among the Indian population in particular. Therefore, an investigation is needed to aggregate the prevalence rate in the Indian population for better understanding. Also, this study is clinically significant in the management of problem behaviors among children with communication difficulties. Hence, the present study was highly warranted.

1.4 Aim of the study

To develop a quick screening checklist to detect problem behaviors among children with communication disorders.

1.5 Objectives of the study

- To develop a quick screening checklist to rule out the behavioral issues in children.
- To determine the prevalence rate of problem behaviors in different communication disorders.

Chapter 2

LITERATURE REVIEW

2.1 Problem behaviors and Language deficits

In the research literature, associated linguistic and behavioral abnormalities in children and adolescents have been widely established (Benner et al., 2002). Despite these established links, undetected language disturbances can be seen in several young emotional and behaviorally disordered people (EBD). Therefore, the urgent need for behavioral intervention may overwhelm attention to language deficit diagnosis and intervention; that is, problem behavior is often a more prominent issue than the effect that impacts on school and classroom settings. Estimates suggest that 68 to 97 percent of children with emotional disturbance (ED) have clinically significant language difficulties (Benner et al., 2002), and a recent meta-analysis indicates that 81 percent of the children with EBD had undetected language deficits (Hollo et al., 2014), indicating that language problems went unaddressed. These children probably received services for emotional disturbance. Reports suggest that older children with language disorders demonstrate a greater rate of problem behaviors when compared with the typical population (Curtis et al., 2018).

In an exploratory study on twenty-nine Dutch-speaking children of age range 24-46 months who were referred with language difficulties as part of their neurodevelopmental disorder, mainly autism spectrum disorder, results found that the relation between language difficulties and problem behavior may be influenced by children's maturation and ability to communicate intentionally. They also found that withdrawal, emotionally reactive behavior, attention problems, and aggressive behavior were the most common parent-reported problem behavior (Jansen et al., 2020).

According to a census of parents of children with autism and similar disorders

in the United States, 40% of parents said their children participated in destructive behavior at least once per day, and 20% said their children had tantrums at least once a day. The parents of the 11 preschoolers reported similar rates of disruptive behavior in this research. Daily outbursts were reported by twice as many parents (40 percent) (Aman & Rojahn, 1994).

2.2 Problem behaviors in autism spectrum disorder

Persistent impairment in social communication and social interaction and restricted repetitive patterns of behavior, interests, or activities are the essential features of autism spectrum disorder. These symptoms can be present from early childhood and impair or limit everyday functioning (American Psychiatric Association, 2013). However, ASD patients frequently have a variety of other externalizing problem behaviors (Dominick et al., 2007), such as tantrums, self-injurious, aggressive behaviors, and non-compliant behavior (Allik et al., 2006).

Several researchers have found a correlation between communication abilities and problem behaviors in individuals with ASD; but this link has not been proven universally. For example, the severity of ASD was not directly correlated with the frequency of problem behaviors in a study of 17 young children with ASD from Australia and 15 from Taiwan with mild to severe ASD; however, 50 percent of the children were observed to use problem behaviors to communicate with others (Chiang, 2008).

In a study, three hundred thirteen children and adolescents with 182 children with ASD, 100 typically developing controls, and 31 children with psychopathology or atypical development were examined for problem behaviors. Results depict that children with autism spectrum disorders had higher problem behaviors than average

children with atypical development. The number and intensity of problem behaviors were closely linked to the severity of ASD, and children with severe ASD had considerably more problem behaviors than children with mild - to - moderate ASD (Matson et al., 2008).

2.3 Problem behaviors in attention deficit hyperactivity disorder

The most frequent neurobehavioral condition affecting children today is attention deficit hyperactivity disorder (ADHD), with a prevalence between 5% and 12% in developed countries (Polanczyk et al., 2015). The prevalence is more among boys than girls (5.2% vs 2.7%) in the younger population (Mohammadi et al., 2021). There can be a persistent pattern of inattention and/or hyperactivity that interferes with the functioning (American Psychiatric Association, 2013).

AlZaben et al. (2018) screened 929 school-going students of the age range 6-12 years. ADHD was prevalent in 5% of the population (5.3% in girls and 4.7% in males). The mixed type of ADHD was the most common subtype (2.7%), followed by the hyperactive type (1.2%) and the inattentive type (1.2%). Overall, the highest frequency of ADHD was in grade 3 (7.1%), and the lowest prevalence was in grade 6 (3.4%) along with comorbidities such as anxiety disorders (37.9%) and behavioral disorders (31%).

2.4 Problem behaviors in Intellectual disability

Most children with intellectual disabilities (ID) have significant behavioral and emotional issues, which may burden both the children and their parents' lives. Psychopathology prevalence reports in children with ID range from 14% to over 80% (Borthwick-Duffy, 1994). Rutter et al. (1970) found that children with ID are four to eight times more often have aberrant levels of problematic behaviors.

Severe and profound ID individuals had more significant behavioral issues than

individuals with low and moderate intellectual deficits. Children with deep ID had personality and autistic behaviors, children with severe impairment had communication issues and anxiety, and children with mild ID had antisocial behavior (Molteno et al., 2001).

2.5 Problem behaviors in Hearing Impairment

Children's hearing loss significantly impacts their communicative, social, and educational development. Children who are deaf and hard of hearing (DHH) have a greater risk of unfavorable social and emotional development than their hearing counterparts, leading to disruptive behavioral issues. Around 20% of young children in the general population have disruptive behavior problems, placing them at risk for substance misuse, academic failure, and criminal offenses (Hindley et al., 1994).

The Child Behavior Checklist, the Vineland Behavior Adaptive Scales, and the Strengths and Difficulties Questionnaire are validated questionnaires that may be provided to parents or teachers to measure behavior directly. Hearing loss assessment and reporting are routine and relatively standardized in children; moreover, clinical evaluation of disruptive behavioral disorders in children inside the hearing healthcare systems lacks standardization (Bigler et al., 2019).

2.6 Problem behaviors in developmental disability

Cuijpers (1999) found that behavioral issues may be a considerable burden on children with developmental impairments, their families, and the community. In young children with developmental difficulties, behavioral problems are prevalent. If left unaddressed, these issues are likely to continue throughout adulthood, becoming more complex and severe. Behavior issues disrupt cognitive, social, and emotional development, add to family stress, lead to rejection from community services, and cost

the community funds. The effectiveness of parent management programs and treatments based on applied behavior analysis is supported by intervention research (Roberts et al., 2003).

Parents of young developmentally delayed children report considerably more behavioral difficulties throughout their first year of life than parents of children with typical development (Blackman & Cobb, 1989). They also claim that the issues are lasting longer.

2.7 Quick measures of problem behaviors

Problem behavior evaluation should be an integral part of all persons with Intellectual Disability rehabilitation and, therefore, should be incorporated into clinical conduct. However, due to the significant trait overlap between Intellectual Disability and Mental Health diseases, identifying problem behavior is challenging (Moseley et al., 2011). In the initial evaluation of problem behavior, utilizing relatively comprehensive standardized tools is typically suggested. Because there are few instruments specifically designed for the intellectually disabled population such as Developmental Behavior Checklist (DBC) (Einfeld & Tonge, 1995), and Aberrant Behavior Checklist (ABC) (Aman & Rojahn, 1994). Instruments that were not designed for this population are mainly used e.g., Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997), and Achenbach System of Empirically Based Assessment (ASEBA). Therefore, additional research into accurate and standardized assessments of problem behaviors in children and adolescents is needed.

A recent systematic review assessed the applicability of problem behavior measures for patients with severe and profound ID across all age categories (i.e., children, adolescents, and adults) in terms of psychometric qualities (i.e.,

reliability and validity). Dekker et al. (2002) concluded that only a few measures for adults were accessible and approved (i.e., they had good psychometric qualities). They also discovered no research that reported psychometric features of tools for children and adolescents with severe and profound intellectual disabilities. As a result, further information concerning the reliability and validity of problem behavior tools used among children and adolescents across the spectrum is urgently needed.

The recent assessment tools that are available can be divided in terms of tools tailored for the Intellectual Disability population (ID instruments: Behavior Problems Inventory [BPI], Developmental Behavior Checklist [DBC], Challenging Behavior Inventory [CBI], Aberrant Behavior Checklist [ABC], Reiss Scales for Children's Dual Diagnosis [Reiss], Well-Being in Special Education Questionnaire [WellSEQ] and tools developed for the general population (ID instruments: Aberrant Behavior) (non-ID instruments: Strengths and Difficulties Questionnaire [SDQ], Achenbach System of Empirically Based Assessment [ASEBA], Behavior Problem Checklist [BPC educational setting]). All of the tools found were intended to be used as screening tools for problem behaviors (Carter, 2004).

The majority of the tools that exist for assessing problem behaviors are lengthy, complicated, time-consuming, and need a person who is trained. These tools are impractical as routine screening tools due to their inherent flaws. As a result, a simple problem behavior screening tool with high psychometric features that can be employed at the grass root levels is urgently needed (Samarakkody et al., 2010).

2.8 Conclusion

Hence, from the literature review mentioned above, a few findings may be drawn that would validate the present study.

- There is a more significant problem behavior among children with various communication disorders.
- Persistence of these problem behaviors can be a significant obstacle to a child's effective education and social development.
- There are individual interviews, informant behavior rating tools, self-reporting instruments, and direct observation methods for assessing problem behaviors.
- But there are very few quick screening tools to measure the problem behaviors in communication disorders.
- Thus, the lack of research in the Indian context and lack of a uniform tool to assess problem behaviors among communication disorders serves as a primary need for the study.

Chapter 3

METHOD

This chapter contains the research design, participants, and procedure of the current study. An overview of the research analysis is also given.

3.1 Research Design

The aim of the study was to develop a screening checklist to assess the problem behaviors in communication disorders. To assess the problem behaviors, a cross-sectional, descriptive study design was used. The study was carried out in an online/tele-mode.

3.2 Sample

A total of 100 Malayalam-speaking parents with children with communication disorders aged below 14 years from the AIISH (2019-2021) clinical service database was selected using a systematic random sampling technique. Every 3rd individual from the database participated in the study. Out of 100 participants, 66 were males and 34 were females. Table 1 contains socio-demographic characteristics of the sample.

Table 1: *Sociodemographic Characteristics of Study Sample (N=100).*

Characteristics		Frequency (%)
Age	>6	43(43)
	<6	57(53)
Gender	Male	66(66)
	Female	34(34)
Total		100

3.2.1 Criteria for Inclusion

- a) Native Malayalam speaker (although, can be multilingual).
- b) Diagnosed with any communication disorder.
- c) Children of age range below fourteen years from the AIISH (2019-2021) database.
- d) Willingness and consent to participate in the study.

3.3 Procedure

3.3.1 Phase 1: preparation of a preliminary questionnaire

Step 1: The researcher reviewed different studies related to assessment of problem behaviors and identified seven test materials that are commonly used to assess problem behaviors. The seven tests were Child Behavior Checklist (CBCL; Achenbach and Edelbrock, 1986), Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), Behavior Problems Inventory (BPI; Rojahn et al., 2011), Problem Behavior Checklist (Tyrer et al., 2016), Developmental Behavior Checklist- Primary Carer Version (DBC-P; Einfeld & Tonge, 1995), Aggression Questionnaire (Buss & Warren, 2000), and Problem Behavior Survey Schedule (PBSS; Venkatesan, 2013). After compiling the seven tests, a preliminary screening checklist was made.

Step 2: For content validation, the preliminary screening checklist was given to three professionals (two clinical psychologists and one speech-language pathologist) who had at least two years of experience. They were asked to rate the questions in the checklist based on a 3-point rating scale (inappropriate, somewhat appropriate, and more appropriate). It was suggested to add examples for each question in the checklist for clarity.

Step 3: The preliminary screening checklist was finalized after the content

validation. A total of 13 questions were finalized to assess the problem behaviors in children with communication disorders. For 12 questions the parent/caregiver had to record the presence of the given problem behavior in the last week and rate them on a scale from 1 to 5. Value 1 indicated that the problem behavior was present once a week and value 5 indicates the behavior present more than 2 times per day in the last week. The questions included in the checklist are as follows:

Q1. Aggression

Behavior that injures or harms another person can be widely defined as aggressive behavior. The child's actual overt behavior includes hitting, kicking, biting, poking, and throwing objects which can harm others.

Q2. Property Destruction

Destroying of things of either the individual or others such as throwing objects, tearing things, etc.

Q3. Self-injurious behavior

Chronic, repetitive actions that have the potential to result in physical injury to self are referred to as Self-injurious behavior (SIB). This included head banging, hitting self, grinding teeth, scratches self, etc.

Q4. Stereotypies/self-stimulatory behaviors

Nonpurposeful and nonfunctional repetitive motor movements that included hand flapping, hand and finger posturing, eye gazing, body rocking, and repetitive vocalizations.

Q5. Oppositional/non-compliant behaviors

Obedience, acceptance, and cooperation with the adult's requests or suggestions refer to as compliance. When the children failed to follow the parent's or teacher's instructions, such as breaking rules or running away from home are called to be non-compliant.

When such behaviors start interfering with the normal functioning of the child or family, it becomes a clinical concern and a major reason for the referral of typically developing children to mental health services.

Q6. Attention deficits/hyperactivity

Attention deficit hyperactivity disorder is characterized by behavioral symptoms such as hyperactivity, impulsivity, and inattention in typically developing children. These behaviors are recognized as significant problems like can't concentrate and fails to finish work.

Q7. Tantrums

Outbursts of behavior as an expression of anger, frustration, and irritability are termed tantrums which are commonly exhibited through behaviors such as crying, falling to the floor, kicking, throwing things, aggression, and self-injurious behaviors. It can vary in duration both between and within individuals which can last over an hour at a time. It is reported to be more seen in children with disabilities than normal.

Q8. Eating problems

Feeding/ meal time problems are common in young children. Types of problems include food refusal, food selectivity, inadequate amount of food intake, inappropriate mealtime behaviors, and lack of self-feeding skills.

Q9. Toileting problems

Repeated urination in inappropriate places such as in clothes, or on the bed is Enuresis. Defecation of feces in inappropriate places is Encopresis.

Q10. Sleep and Bedtime problems

Problems related to sleep and bedtime identified included difficulty going to bed, difficulty in settling and falling asleep, and difficulty remaining asleep. This can lead to poor daytime performance.

Q11. Excessive fear/sad

This indicated a child's excessive fear of a person, place, or object and that they might also get hurt easily.

Q12. Other problem behaviors

Here, option to quote any other problem behaviors that the parent/ caretaker felt that is more prominently present or which have not been included in the previous questions.

3.3.2 Phase 2: Administration of the preliminary screening checklist

The problem behavior screening checklist was administered on one hundred Malayalam-speaking parents with children with communication disorders, selected using systematic random sampling. Requests for participation were made through a telephone call. Participants were informed beforehand about the purpose of the study, the nature of the questions, and the total time required for the interview. Oral consent was also taken from all participants. A few demographic details such as age, date of birth, and education were collected. The interview was carried out in Malayalam over a telephone call and audio was recorded.

3.4 Statistical Analysis

Data were analyzed using SPSS (statistical package for social sciences) software version 21. For socio-demographic variables, descriptive analyses were carried out. The data were initially analyzed to check whether the data is normally distributed or not. As some of the variables were not falling under normality, a non-parametric test was done. Kruskal Wallis test was done for comparing the problem behaviors across the communication disorders. A posthoc test, Mann-Whitney U test was also done to find the significant difference across the groups. Further, Pearson correlation test was used to detect the relationship between problem behavior frequency and severity. The level of statistical significance was kept at $p < 0.05$ for all tests.

Chapter 4

RESULTS

The objective of the present study was to develop a quick screening checklist to establish or rule out problem behaviors in children with communication disorders. This study also examined the prevalence rate of these problem behaviors in different communication disorders. One hundred Malayalam-speaking parents having children with communication disorders participated in the study.

Table 2: *Clinical Characteristics of Study Sample (N=98).*

Condition	Frequency (%)
Speech disorders	11.2(11.2)
Intellectual disability	34.7(34.7)
Cerebral palsy	9.2(9.2)
Autism spectrum disorder	16.3(16.3)
Learning disability	3.1(3.1)
Hearing impairment	7.1(7.1)
Spoken language delay	18.4(18.4)
Total	100.0

A systematic random sample of 100 Malayalam-speaking parents were the participants, who had children with communication disorders below the age of 14 years at the time of the interview, were selected from the AIISH clinical databases for the years 2019-2021. Based on the clinical conditions present in them, they were categorized into different disorder groups. Table 2 shows the frequency of communication disorders present in the selected participants.

The most commonly reported clinical condition was intellectual disability (34.7%), followed by spoken language delay (18.4%), autism spectrum disorder

(16.3%), speech disorders (11.2%), cerebral palsy (9.2%), hearing impairment (7.1%), and learning disability (3.1%). Interestingly, two participants selected were clinically normal. Since they were clinically normal, they were not considered in the disordered group.

4.1 Development of a preliminary screening checklist

Based on the literatures available, there is no quick screening tool to assess the problem behaviors among children with communication disorders. Therefore, a preliminary screening checklist was made to assess the problem behaviors after reviewing the literature and comparing different psychological test materials. In this screening checklist, the caregivers of the participants were asked to report the presence of problem behaviors in their children and to rate the severity.

To check the relevance and clarity of the checklist, the preliminary questionnaire was given to two clinical psychologists and one speech-language pathologist for content validation. Thus, the final questionnaire has 13 questions, of which 12 depict different problem behavior (1. Aggression 2. Destruction 3. Self-injurious 4. Stereotypic 5. Non-compliant 6. Inattention 7. Hyperactivity 8. Tantrums 9. Meal time problems 10. Toileting problems 11. Sleep problems 12. Emotional problems). The final item gave the option to report any problem behavior, other than the ones already asked, if present. To rate the severity, the scoring method used in the Dimensions of Discipline Inventory (Straus & Fauchier, 2007) was used.

Results showed that out of the 100 participants, only 10 did not have any problem behaviors. So, most of the study participants had at least one problem behavior which again proved that the prevalence of problem behavior is higher in communication disorders. Of the 100 participants, 22 parents specifically discuss other behaviors in

which they were more worried, such as screaming, extreme fear, biting nails, etc. The other behaviors mentioned can be grouped into the 12 categories except for excessive screen time behavior as it is not an internally driven repetitive behavior. But as per the problem behavior survey schedule (Venkatesan, 2013), the repetitive overuse of gadgets with a significant intensity can be considered as a repetitive problem behavior.

4.2 Tests of Normality

The data were subjected to the Shapiro-Wilk normality test to check if the data deviated from the normality. The outcomes showed that the data did not follow the normal distribution ($p > 0.05$) for the problem behavior severity score across the speech disorders and spoken language delay. Similarly, for the problem behavior frequency score across speech disorders, learning disabilities, and spoken language delay. Hence, for further statistical analysis, nonparametric tests were performed.

4.3 Level of significance of problem behaviors across communication disorders

To determine the data's significance level, Kruskal Wallis statistical test was administered. The results revealed a significant difference in problem behavior severity scores across communication disorders ($\chi^2(6) = 12.668, p < 0.05$). Similarly, found a significant difference in problem behavior frequency scores across communication disorders ($\chi^2(6) = 14.748, p < 0.05$). Therefore, a follow-up analysis was done using the Mann-Whitney U test.

While doing the pair-wise comparison of problem behavior severity scores across communication disorders, three groups, (1) speech disorders-intellectual disability ($|z| = 2.607$ at $p < 0.05$), (2) speech disorders-spoken language delay ($|z| = 2.700$ at $p < 0.05$), and (3) speech disorders-autism ($|z| = 3.330$ at $p < 0.05$), had significant

differences. The remaining groups did not have a significant difference across the values.

In a pair-wise comparison of problem behavior frequency scores across communication disorders, four groups, (1) speech disorders-intellectual disability ($|z|=2.778$ at $p<0.05$), (2) speech disorders-cerebral palsy ($|z|=2.224$ at $p<0.05$), (3) speech disorders-spoken language delay ($|z|=2.715$ at $p<0.05$), and (4) speech disorders-autism ($|z|=3.608$ at $p<0.05$) showed significant differences.

4.4 Comparison of problem behaviors among communication disorders

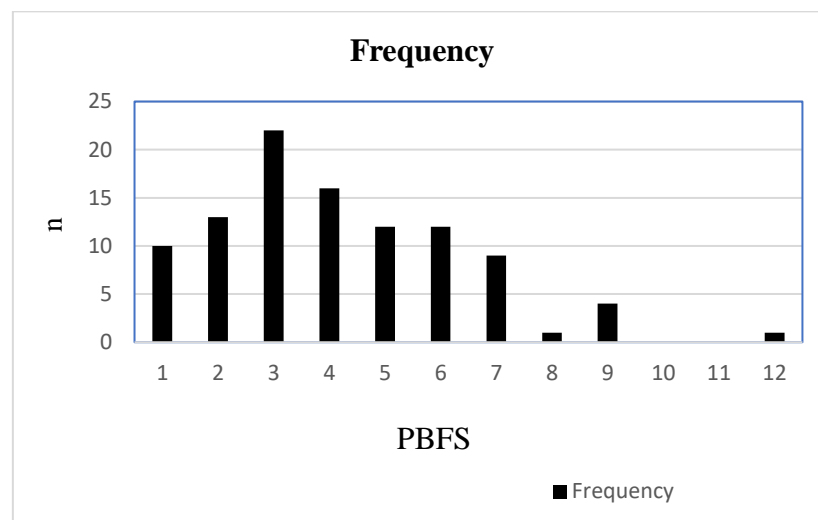


Figure 1: Problem behaviors by frequencies ($N=100$).

Note. Figure depicts the problem behaviors by frequencies, PBFS-problem behavior frequency score, n-number of participants.

90 participants (90%) of the sample had at least one problem behavior. Ten of the total sample did not have any problem behavior. Half the children had 1 to 3 problem behaviors.

Table 3: *Problem behaviors by conditions (N=98)*

Conditions	N	PBFS	PBSS
		M(SD)	M(SD)
Speech disorders	11	1.36 (1.85)	5.73(8.11)
Intellectual disability	34	3.21(1.82)	13.12(9.15)
Cerebral palsy	9	3.11(1.45)	11.78(6.49)
Autism spectrum disorder	16	4.25(2.26)	16.75(9.34)
Learning disability	3	2.00 (1.73)	8.00 (8.88)
Hearing impairment	7	3.00 (1.73)	11.57(6.07)
Spoken language delay	18	3.83 (2.85)	16.50(14.01)

Note. PBFS= problem behavior frequency score, PBSS= problem behavior severity score, and N= total number of conditions

Another objective of the study was to determine the prevalence of problem behaviors among communication disorders. Mean scores indicating the problem behavior frequency and severity score among various communication disorders are given in table 3. Of the different communication disorders, the autism spectrum disorder group showed the highest problem behavior frequency score (M = 4.25, SD = 2.266). The mean score of speech disorder group (M = 1.36, SD = 1.859) was the least. The mean problem behavior severity scores also showed a similar pattern.

4.5 Correlation between the severity score and total problem behavior score

Table 4: *Correlation between problem behavior score and severity score*

		PBFS	PBSS
PBSS	Pearson Correlation	1	.950**
	Sig. (2-tailed)		.000
	N	98	98
PBFS	Pearson Correlation	.950**	1
	Sig. (2-tailed)	.000	
	N	98	98

Note. **. Correlation is significant at the 0.01 level (2-tailed).

Pearson correlation was done to determine the relationship between the problem behavior frequency score and problem behavior severity score. Table 4 depicts the correlation between frequency and severity score. There was a strong correlation between the frequency and severity scores ($p= 0.950$) at a 0.01 level of significance. Hence, we can conclude that as the number of problem behaviors increases, the severity also increases.

Chapter 5

DISCUSSION

The study aimed to develop a screening checklist to find the problem behaviors in children with communication disorders and the prevalence rate of problem behaviors in these disorders. Data provides significant findings regarding the prevalence of problem behaviors across communication disorders. Clinically substantial results will be discussed following.

5.1 Problem behaviors in communication disorders

Numerous studies have linked language disorders to problem behaviors, although due to methodological differences, it is hard to draw firm conclusions from this number of studies. In an earlier study based on parent and teacher accounts, 50 percent of children with speech and language impairments had behavioral problems, compared to 12 percent of children who did not have speech and language problems (Beitchman, 1986). Another study found a higher prevalence of 40 to 90% of behavioral issues in children with language impairment (Benner et al., 2002).

The present study extended the support to some of the existing literature on the problem behaviors in communication disorders. However, the results revealed that there was a higher prevalence of problem behaviors in the selected samples. Out of the total sample, 90% of the population had at least one problem behavior. This may be because, AIISH being a higher-level care center and participants of the study were from the neighboring state, the study sample might include participants with severe conditions who were searching for further treatment.

5.2 Problem behaviors in different communication disorders

Of the different communication disorders, the autism spectrum disorder group showed the highest problem behavior frequency and severity score. The possible reason is that children with autism spectrum disorder who exhibit the most severe externalizing problem behaviors usually have less developed verbal skills and perhaps lower nonverbal IQs (Dominick et al., 2007). The usage of behaviors like aggressive and self-injurious behavior is assumed to result from a person's inability to effectively and freely communicate their needs and wants (Ganz et al., 2009). The ability for coping with and adapting to environmental demands may also be a very essential indicator of problematic behaviors in ASD (Williams et al., 2018).

In an earlier study of 17 young children with ASD from Australia and 15 from Taiwan with mild to severe ASD found out that 50 percent of the children were observed to show their problem behaviors with other for communication. But the severity of ASD was not significantly associated with the frequency of challenging behaviors (Chiang, 2008). Another study that supports the current results is that as in an exploratory study of problem behaviors in young children with language difficulties, most children's language difficulties are a part of mainly autism spectrum disorder. Withdrawal, emotionally reactive behavior, attention problems, and aggressive behavior were the most common problem behaviors reported by those parents (Jansen, 2020).

5.3 Development of screening checklist

5.3.1 Correlation between problem behavior frequency score and severity score

In a previous study done on the autism spectrum disorder population, the severity of the problem behavior was not significantly associated with the frequency of

problem behavior (Chiang, 2008). But the results of the present study revealed a strong correlation between the problem behavior frequencies and severities. When the frequency of the problem behavior increases, there is also an increment in the severity score.

Chapter 6

SUMMARY and CONCLUSION

The present study developed a screening checklist to assess problem behaviors in various communication disorders. The study was done in three phases. Phase 1 was, the compilation of available tests/materials and preparation of a 13-item screening checklist; and, phase 2 was the content validation, incorporating the suggestions and developing the final checklist. In Phase 3, the 13-item screening checklist was administered to 100 parents of children with communication disorders selected based on systematic random sampling.

The findings revealed that problem behaviors in communication disorders were more common than what is reported in previous studies (90% vs 50%). There was a high correlation between the problem behavior frequencies and the severity scores. The data also shows a significant difference in the problem behaviors across communication disorders with autism spectrum disorder showing the highest problem behavior scores.

Hence, the overall results strongly suggest the correlation between problem behaviors in different communication disorders and their negative impact on the disordered group. So, it is crucial to find out this problem behavior as early as possible for better rehabilitation. Perhaps, this quick screening checklist will provide an efficient method for assessing problem behaviors in various communication disorders.

6.1 Clinical Implications

The study findings have several significant clinical implications. The prevalence of problem behaviors and speech-language communication issues has been rising. However, this scarcity of research on the prevalence rates of such issues in the Indian context was addressed by developing a 13-item quick screening checklist to assess the problem behaviors in children with communication disorders. This checklist

helped in finding out the prevalence rate and severity of problem behaviors which can be considered as an effective referral. Thus, this assessment is clinically significant in rehabilitating the problem behaviors among children with speech-language communication difficulties.

6.2 Limitations

The study has certain limitations as follows:

- The sample size for each communication disorder group is small and unequal.
- Every communication disorder group could not be present in the randomly selected sample.
- The tool could not be validated with the typical population.
- Cultural differences and chaos of the selected participants may vary, making generalization of the tool difficult.

6.3 Future Research

The developed tool can be further validated by administering it to typical children below 14yrs to assess their problem behaviors. Comparing the presence or severity of problem behaviors in the typical and disordered groups will give us a complete idea. Research on this comparison will contribute to further referral or treatment. Age and gender comparisons can be made across all varieties of communication disorders. Although, a larger sample of different communication disorders should be considered for a statistically significant data.

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Appendix

Screening checklist

PROBLEM BEHAVIOUR SCREENING CHECKLIST

Client Name: _____ File No: _____ Date: _____
 Date of birth: _____ Age: _____ Gender: _____ Contact No: _____
 Provisional Diagnosis: _____ Education: _____ Informant: _____

We would like to find out how often your child engaged in any problem behavior in the PAST WEEK.

Does your child show ...	Not present in the previous week	Present in the previous week	If present in the previous week, please rate					
			Once in the past week	2 times in the past week	3-5 times in the past week	Once every day in the past week	2 or more times every day in the past week	Not in the past week but in previous weeks
1. Aggressive behaviors? (eg: hits others, pulls hair)	N	Y	1	2	3	4	5	0
2. Destructive behaviors? (eg: tear things, throws objects)	N	Y	1	2	3	4	5	0
3. Self-injurious behaviors? (eg: headbanging, teeth grinding, scratches self)	N	Y	1	2	3	4	5	0
4. Stereotypic /self-stimulatory behaviors? (eg: repetitive body movements, stares at objects)	N	Y	1	2	3	4	5	0
5. Oppositional /non compliant behaviors?	N	Y	1	2	3	4	5	0

(eg: break rules, runs away from home/school)								
6. Attention deficits? (eg: can't concentrate, fails to finish works)	N	Y	1	2	3	4	5	0
7. Hyperactivity? (eg: doesn't sit easily in one place, restless)	N	Y	1	2	3	4	5	0
8. Tantrums? (eg: cries a lot, screams)	N	Y	1	2	3	4	5	0
9. Problems with eating? (eg: over eats, under eats)	N	Y	1	2	3	4	5	0
10. Problems with toileting? (eg: urinates outside, wets self)	N	Y	1	2	3	4	5	0
11. Problems with sleeping? (eg: sleeps less, sleeps more)	N	Y	1	2	3	4	5	0
12. Excessive fear/ sadness? (eg: nervous, fears objects/persons/place)	N	Y	1	2	3	4	5	0
13. Any other problems?	N	Y	1	2	3	4	5	0