DEVELOPMENT AND VALIDATION OF AN ONLINE BASED FLIPBOOK ON CHILHOOD COMMUNICATION DISORDERS IN MALAYALAM FOR SCHOOL TEACHERS

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CERTIFICATE

This is to certify that this dissertation entitled **Development and Validation of an Online based flipbook on childhood communication disorders in Malayalam for school teachers** is a bonafide work submitted in part fulfillment for the degree of Master of Science (Speech Language Pathology) of the student with Registration Number 20SLP015. 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

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CERTIFICATE

This is to certify that this dissertation entitled **Development and Validation of an Online based flipbook on childhood communication disorders in Malayalam for school teachers** has been prepared under my supervision and guidance. It is also certified that this dissertation has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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DECLARATION

This is to certify that this dissertation entitled **Development and Validation of an Online based flipbook in Malayalam on childhood communication disorders for school teachers** is the result of my own study under the guidance of Dr. N Sreedevi, Professor in Speech Sciences, Department of Speech and Language Sciences, All India Institute of Speech and Hearing, Mysuru, and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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ABSTRACT

Background: There exists well-established literature on the incidence and prevalence of communication disorders in school going children. If these children are left untreated there can be serious long-term complications. When it comes to the early detection and appropriate referral of students with communication disorders, teachers play a crucial role. Hence, teachers need to be familiar with various childhood communication disorders (CCDs), management options provided by various professionals as well as classroom strategies to be used for supporting such children.

Aim: The primary goal the current study was to develop an online-based Flipbook in Malayalam for primary school teachers on childhood communication disorders (CCDs). A pre-posttest was also carried out on these teachers to study the usefulness of the Flipbook.

Methods: The material for the flipbook was initially developed in English by compiling information from existing pamphlets, books and articles, content validated by five speech-language-pathologists, and translated to Malayalam after incorporating all the suggestions and modifications provided by the validators. An additional content validation was carried out for the Malayalam material by a group of six speech-language pathologists and five school teachers who are native speakers of Malayalam. Followed by this, a Flipbook was developed. To check the efficiency of the developed Flipbook among primary school teachers; a pre-posttest evaluation was carried out using a questionnaire developed based on the Flipbook. Among the 30 school teachers with whom the flipbook was shared, only

16 teachers successfully completed the posttest in tele-mode via google forms. Shapiro Wilk's test of normality showed that the obtained data was not normally distributed. Hence, Wilcoxson's signed Rank test and Mann-Whitney U-test were used to rank the statistical measures and compute the results.

Results: From the findings, it was evident that for the participants understanding and knowledge regarding CCDs had significantly improved in the post-test evaluation. The results of the age-wise comparison of the participants indicated that there was a significant difference in scores across groups. Teachers belonging to the age group of 41-55 years performed significantly better in terms of knowledge on assessment and treatment of CCDs as well as overall knowledge on CCDs when compared to teachers belonging to 25-40 years age-group. However, there was no significant differences were observed in the performance of upper and lower primary teachers. During the post-test evaluation, feedbacks were also collected and it was positive and promising.

Conclusions: Hence, it may be concluded that the developed Flipbook material could increase the understanding and knowledge of various CCDs among primary school teachers in Kerala and there is a need for similar awareness-based studies in other Indian languages involving large number of primary school teachers.

Key words- childhood Communication Disorders, Teacher's awareness on communication disorders, material in Malayalam on communication disorders.

Chapter 1

INTRODUCTION

Communication is the essence of human life to share or exchange information, ideas, or feelings through multiple modalities (Hulit et al., 2014). Any problem with understanding concepts or spoken, nonverbal, or visual sign systems might be termed a communication disorder. A communication problem can affect the processes of speech, language, and hearing. One of the critical rehabilitation goals would be the prevention and early detection of communication difficulties; as the adage goes, "prevention is better than cure." Over time, there has been a growing need to raise awareness about the early detection of communication disorders. Appropriate rehabilitative treatments may enhance people's overall quality of life with such disabilities.

Communication disorders can have several diverse effects on school children. According to Cantwell and Baker (1977) children with communication problems have a greater frequency of mental illnesses than children in the general community. They also claim that, the kind and intensity of speech and language characteristics are the most strongly linked to the development of mental disorders. Children with speech and language difficulties are more likely to develop social and emotional issues (Cantwell & Baker, 1977) . Crookes and Greene (1963) found that children with pure speech impairments also struggle to learn to read later in life. Many older children who struggled with reading as a child continue to struggle with language and abstract thinking later in life (Blank et al., 1968; Lytton, 1968).

1.1 Prevalence of Communication Disorders in Children.

According to Western literature the incidence of communication disorders in school-aged children is estimated to be between 4.19 and 11.08 % (Andrade, 1997; Beitchman et al., 1986). McKinnon et al. (2007) evaluated the prevalence of speech abnormalities in children, finding that 1.06 percent of students had a speech-sound disorder, 0.12 percent of students had a voice disorder, and 0.33 percent of students' stammer. In a cross-sectional study by Shaheen et al.(2012) including 4280 rural primary school children, the prevalence of CSOM was found to be 5.6%. In an another study by Rowland et al.(2015) 7,587 youngsters were screened for ADHD. By applying the DSM-IV-TR diagnostic criteria they estimated that 15.5% of the sample population had ADHD. The authors also noted, if they had ignored stimulant medication use as in other studies, their prevalence estimate would have dropped to 14.0%. According to Li et al. (2018), the prevalence of Cerebral palsy was 2.46 percent (797/323 858 cases), while the incidence was 2.48 percent (155/62 591 cases) in 1-6 years old children. In a study by Mohammadzadeh and Sandoughdar (2017) in Iran , a prevalence of 53.2% of voice disorders in primary school students was identified .In the same year, Johnson. (2017) reported about 10% of people will experience a learning disability throughout their lives. Authors also noted, compared to girls' guys are more likely to experience learning difficulties. Similarly, Maenner et al. (2021) reported that, across the 11 ADDM locations, the incidence of ASD per 1,000 children aged 8 years ranged from 16.5 in Missouri to 38.9 in California. The findings also revealed that boys were 4.2 times more likely than girls to

have ASD overall, according to surveillance data collected by The Autism and Developmental Disabilities Monitoring (ADDM) Network in children aged 8 years.

In a developing nation like India, 18.9% of the population had hearing impairment, 7.5 percent had speech impairment, and 5.6 percent had mental retardation. (Census of India, 2011). The Department of Prevention of Communication Difficulties (POCD), AIISH released a report in 2015, on various school screening activities carried out at the department. According to the report 2010 children were screened from over 25 schools from the years 2012-2014. Among these school children, 14.2% of the students had some form of communication disorders. The most frequent disorders were found to be language-related, followed by speech, hearing, and multiple disabilities. When comparing the prevalence of communication disorders different regions, it was found that rural areas had higher rates of language, speech, hearing, and multiple abnormalities than urban areas. Relatively, the lower primary grades had a greater prevalence of language problems, speech disorders, hearing abnormalities, and multiple disorders than the upper primary grades. The findings also showed that boys were more likely than girls to experience language disorders, speech disorders, hearing disorders, and multiple disorders.

In another study by Shanbal et al. (2015) a total of 2010 school-going children from urban and rural Mysore, Karnataka, were evaluated for communication issues. 231 (11.5%) of the youngsters were found to have some communication issues. Compared to girls, it was found that boys had a higher percentage of prevalence (66.7%) of communication disorders. Language disorders made for 7.4% of the identified impaired group, followed by speech disorders at 3.8% and various multiple disorders at 0.2 %. Singh et al.(2017) indicated that between 5% and 15% of Indians have some form of learning

disability. According to Devi et al.(2018) the prevalence of stuttering was determined to be 0.46 % among the 74,544 schoolchildren that were screened in Tamil Nadu. In Jodhpur, Rajasthan, Sharma et al. (2019) examined the prevalence of hearing loss in school-age children between the ages of 8 and 14. 1200 kids were tested, and 140 of them had hearing loss. Similarly, the prevalence of hearing problems among school-aged children in Dehradun's rural districts was studied by Saini et al. (2020). Hearing problems were found to be prevalent in 19.6% of the 1003 kids who were examined. The majority of children with hearing disorders had conductive hearing loss, with the majority of them having a mild degree of hearing loss. Varsha & Praveena (2020) conducted a study on school children from 22 schools in Chengalpettu district, Tamil Nadu state, in 2020. A total of 1453 children were identified as being at risk for communication disorders. Verma et al. (2021) concluded the prevalence of Hearing loss in children was between 6.6% to 16.47%.

In a recent study by Ravi et al. (2021), 99 out of 2304 children in the Ballari area of Karnataka were found to have communication difficulties, representing a prevalence rate of 4.29 %. One of the recent reports from the Department of Prevention of Communication Disorders (POCD) at AIISH shows that in Southern Karnataka 13.5% of school-going children exhibit various communication disorders (Arunraj et al., 2021). Another recent report by the Department of Prevention of Communication Disorders (POCD) at AIISH by Sreedevi et al.(2022), presents the screening data of 20,424 school going children between the years 2008 and 2020 for various speech and language disorders . The data was analyzed to estimate communication disorders across gender, grades and type of schools. Among the total screened, 17707 (86.7%) school children passed the screening, while 2717 (13.3%) are at-risk of various communication disorders.

Though most Indian studies report a prevalence of approximately 5% of speech disorders in school-going children, this becomes a huge number considering the number of children attending schools in our country. Teachers in schools are closely associated with students, and hence they serve as facilitators for the rehabilitation of school children with communication disorder.

1.2 Role of Teachers in the management of communication disorders in school children.

Teachers play a significant role in identifying and referring these children to professionals involved in the comprehensive assessment and rehabilitation of communication disorders. According to Brice (2012), children with communication issues do well when provided with appropriate contextual conditions. These children must learn about the social, linguistic, and learning patterns in the classroom. Teachers should also focus on classroom relationships and the language and communications utilized in the educational setting to help these students. Due to at least two significant reasons, teachers are one of the most vulnerable groups to be actively targeted during Public education campaigns. First, the knowledge they receive is frequently shared with schoolchildren and future generations. Second, many children with childhood communication disorders have recently been incorporated into regular schools as per the inclusive education policy of the Government.

Teachers have a crucial role in strengthening students' speaking and listening abilities in the classroom and facilitating the transition to literacy (Jones, 2007). According to Moats (1994) a teacher's knowledge of spoken and written language structure is

frequently insufficient for helping children with these disabilities. Some teacher training courses include a component of special education. However, normal language development and its function in the transition to literacy need to be addressed separately in the teacher training curriculum.

1.3 Need for the Study

It is well known that communication difficulties are common in school-age children. The presence of communication disorders will make learning at school a difficult task for students. They will face difficulties in oral language competence, reading, and writing, resolving conflicts, maintaining friendships, as well as in abstract thinking. It is also reported that such children who face challenges in effective communication rarely get on to higher studies and acquire a white collared job.

Christopulos and Kean (2020) conducted a study to investigate the general education instructors' ability to positively anticipate language impairments in school children. This study's focus was on 44 language-based referrals. With a positive predictive value of 0.35, general education instructors were shown to be the least accurate referral sources out of the 44 people who were referred for language impairment. The rate of identification by teachers was 1.38 %. The majority of referrals to special education were made by general education instructors, who also showed the greatest difficulties in appropriately identifying children with language impairment.

Teachers play a crucial role in the early detection and treatment of communication issues that are common in schoolchildren because they closely watch over their students. They can refer these children confidently to professionals involved in the comprehensive

assessment and management of these disorders. Once a condition is identified and treated, and the child goes back to school for continuing education, teachers can make the classroom a more understanding and accepting place for these children. Teachers during their training period have limited awareness of communication disorders and the unique needs of such children. Teachers' awareness regarding the impact of communication disorders, including anxiety issues, poor peer relationships, reading and writing difficulties, and poor scholastic performance, warrants their attention and adaptive use of resources for better academic achievement. A well-aware teacher can also act as a resource person for other teachers and parents of children with communication disorders. The human resources, the logistic support, and the economic demands in conducting frequent awareness programs for teachers are practically tricky.

Kerala is one of the leading states in terms of literacy and health standards. Many awareness programs are being conducted in various parts of the state by several speech and hearing institutes and the Government of Kerala. However, school children with communication disorders and consequently their underachievement remains mainly unnoticed. During their education period at various teacher training institutes (TTIs), teacher trainees do not receive a clear-cut picture regarding the need for early identification of communication disorders and their effects on students' academic performance. They have minimal exposure to these aspects despite the enormous responsibility they play in early identification and rehabilitation. Teachers bear a significant portion of the blame for such children's poor educational progress. According to research, parents are concerned about the kind of service providers and teachers' capacity to handle a rise in the number of kids requiring specific care (Law et al., 2001). This obligation is possibly even more

extensive when it comes to children with disabilities. Hence, this study is highly warranted to increase school teachers' awareness of communication disorders.

1.4 Aim of the Study

To develop and validate an online-based Flipbook on childhood communication disorders in Malayalam for school teachers.

1.5 Objectives of the Study

1. To develop and validate a Flipbook to help teachers identify and refer children with communication disorders.
2. To conduct a pre and post-test for 5 Malayalam medium primary school teachers based on the developed Flipbook material.
3. To compare the pre-post performance of the teachers to determine the usefulness of the developed material.

Chapter 2

REVIEW OF LITERATURE

In the developing world, there are several challenges in health, education, and social adjustments, and many sectors of society show limited interest in identifying and addressing the causes of a condition. Many children face communication difficulties early on in life and these children experience problems that impede their development, academic progress, and social interactions, thereby affecting their quality of life. There is a greater challenge in identifying various communication disorders compared other more visible conditions such as visual impairment or motor disabilities. Most of these children never get a precise diagnosis, but they may still struggle with behavior, attention, language, or other developmental challenges which compromises their academic progress and career options. Some of these children may already have a diagnosis for a condition such a particular language impairment like autism spectrum disorder, or attention deficit hyperactivity disorder, but not all of them.

Language development, as well as cognitive, emotional, social, and physical development, are all impacted by the brain's fast structure and expansion throughout the first three years of life. Due to the linkages between early physical, social, emotional, and experiential learning, it is crucial for the brain to develop optimally throughout the first three years in order to achieve long-term goals (Meisels & Shonkoff, 2000) . Speech and language development is a gradual developmental process. A child begins saying his first word around one year of age. Nature and nurture helps predicting the trajectory of speech

and language outcomes. Language development supports a wide range of other developmental processes, such as cognitive, social, and literacy development. Sounds and gestures are the first steps in language development before words and sentences appear. Adults can encourage language development by conversing with the child frequently and responding to their communication attempts. Children that begin school knowing more words than their peers, will continue to have exponentially larger word lists as they learn new words (Beck & Mckeown, 1991) fluidly than their contemporaries(Adams, 1990) . A typical first grader who can read knows almost twice as many words as a non-reader. peer, and studies have demonstrated that this gap will continue into the future (Beck & McKeown, 1991). Additionally, early communication abilities are the best indicator of future intellect and academic achievement (Rossetti, 2001). Even as adults, language and communication skills open up more opportunities and significantly improve one's quality of life (Ruben, 2000). For the social use of speech and language skills, there is typically tremendous expansion in the phonological, lexical, syntactic, and semantic domains as well as the emergence of a sense of self in connection to others.

Early issues with speech and language development can lead to subsequent high-risk behaviors, depression, low resiliency, and social isolation, whereas linguistic competence predicts cascade competencies in a wide variety of life domains (Blair et al., 2003; Calandrella & Wilcox, 2000; Moffitt, 1993) .The influence of early intervention and the efficacy of early identification is always closely examined by speech-language pathologists.

2.1 Consequences of Childhood Communication Disorders

Childhood speech and language impairments can negatively impact people's daily lives as well as their chances for long-term personal growth. (Arkkila et al., 2009; Beitchman et al., 2014; Clegg, 2006). Lack of communication skills and speech impairment can make it difficult for someone to participate in society, which may have an impact on their social and emotional welfare. Speech and language issues frequently have a negative financial impact on both the individual and society.

Numerous studies have discovered connections between Speech Language Disorders in children and poor mental health (Arkkila et al., 2009; Law et al., 2009a; Schoon et al., 2010). A study by Armstrong et al.(2017) found that participants who had worsened in their vocabulary skills during the course of the follow-up had a higher risk of mood problems. In several studies, persons with Speech and Language Disorders had more personality disorders than controls for the subgroup of personality disorders (Beitchman et al., 2001; Mouridsen & Hauschild, 2009).Participants with a history of SLDs had greater hyperactive behaviour and reactive temperaments (Baker & Cantwell, 1987; Goh Kok Yew & O'Kearney, 2015) . Studies also noted general behavioral abnormalities, including hyperactivity in both male and female individuals as well as female participants' social disengagement (Benasich et al., 1993).

Several studies have also shown a significant relation between SLDs and delinquent behaviors (Brownlie et al., 2004; Stattin & Klackenberg-Larsson, 1993) .Emotional problems in subjects with Speech and language disorders were reported by

some studies (Durkin & Conti-Ramsden, 2007; Goh Kok Yew & O'Kearney, 2015; St Clair et al., 2011). Similar results were found by St Clair et al.(2011) ,however the overall frequency of emotional problems among adults with childhood SLDs remained higher than in the general population. Researchers have looked into how SLDs affect health-related quality of life. (HRQoL).The results of these studies show that people with history of SLDs had a poorer HRQoL (Arkkila et al., 2008), mostly because those who had SLDs felt alone, reported having poorer control over their lives and lower life satisfaction (Schoon et al., 2010).

Most studies that examined social behavior found that people with a history of SLDs exhibited fewer social interactions than controls. These findings showed greater rates of social issues and reduced rates of social cognition (Botting & Conti-Ramsden, 2008) and social performance (Aram et al., 1984; Glogowska et al., 2006; Lewis et al., 2016). Wadman et al. (2011) discovered diverse outcomes, concluding that although those with a background of specific language impairment (SLI) were more prone to be shy, they largely exhibited behavioral traits similar to controls.

Multiple studies (Clegg et al., 2005; Elbro et al., 2011; Parsons et al., 2011) indicated that those with a past of SLDs were less likely to be working full-time and more likely to be in lower-skilled employment than controls(Arkkila et al., 2008; Armstrong et al., 2017). Although Durkin et al.(2012) observed that participants with a history of an SLD had reduced part-time employment, same study also indicated that the presence of autistic spectrum disorder symptoms was a significant predictor of employability). Participants with a past of SLDs reported staying unemployed for extended periods of time compared

to controls in three previous studies (Clegg et al., 2005; Law et al., 2009b; Parsons et al., 2011).

A study by King et al.(1982) discovered that compared to controls, those with a background of SLDs exhibited poorer peer ratings or more peer issues ,while Goh Kok Yew and O'Kearney (2015) claimed that this was only true for females. People with a history of SLDs were said to be more awkward and constrained in making contact, had fewer acquaintances, and experience more bullying (Clegg et al., 2005; Wadman et al., 2011). Research that examined the independent living found that they also had poorer rates of independent living or higher rates of living with parents in comparison to control groups (Arkkila et al., 2008; Clegg, 2006; Durkin et al., 2012; Schoon et al., 2010) .

Children with SLD typically did worse in school than controls (Durkin et al., 2012; Snowling et al., 2001; King et al., 1982). This result was supported by research that focused on specific educational achievements, such as the need for special education assistance or the likelihood of completing educational programmes. Most studies showed that people with SLD were more likely to need special education assistance and less likely to finish their educational programmes, while one study (King et al., 1982) was evaluated as having poorer quality (Armstrong et al., 2017; Elbro et al., 2011; Parsons et al., 2011) .More specifically, Johnson et al.(2010) found that compared to those without deficits or those who had early speech-only impairments, young people with a past of a language impairment had lower educational attainment. Fortunately, early detection and treatment of speech and language development issues can sometimes even prevent them from occurring (Hertzman, 2010).

2.2 Incidence and Prevalence of Communication Disorders in Children

2.2.1 Western reports on Incidence and prevalence of communication disorders in children

A population based study was under taken by McCarthy et al.(2012) between 2003 and 2008, the prevalence of ADHD among children between ages of 6 and 12 years was 4.8. The authors also noted that 6-12 years male participants had the highest incidence. As people aged, the prevalence of treated ADHD declined. Children between ages 6-12 years had the highest incidence. In an another study, 7,587 youngsters were given an ADHD screening by Rowland et al.(2015).This population-based sample revealed that the prevalence of ADHD was significantly greater than the range of 3 to 7 percent.

According to Maenner et al.(2021) there were 16.5 ASD cases per 1,000 8-year-olds in Missouri and 38.9 in California. The prevalence of ASD in children aged 8 years was 23.0 per 1,000 (one in 44), and it was 4.2 times more common in boys than in girls. A review of studies on the prevalence of autism conducted by Zeidan et al. (2022) took into account the effects of socioeconomic, racial, and regional characteristics on prevalence estimates. In 2018, it was projected that an average of 1 in 44 (2.3 %) 8-year-old kids at the CDC surveillance sites had ASD. Boys (3.7%) have an ASD prevalence that is 4.2 times higher than that of girls (0.9%)

According to Li et al. (2018) the prevalence of Cerebral palsy was 2.46 % (797/323858 cases), while the incidence was 2.48 % (155/62 591 cases) in 1-6 years old children in Korea . Males were more likely to develop the condition (2.64 %, 461/174 391

cases) than females (2.25 %, 336/149 467 cases), and this difference was statistically significant. Similar to this, Blair et al. (2018) estimated that the overall prevalence of cerebral palsy (CP) is approximately 2 per 1000 live births in both industrialized and developing countries, with a tendency toward a decline over the past ten years, at least for the more severe categories and the smaller babies.

In Mashhad, North-Eastern Iran, Kianifar et al.(2015) conducted a study to look into the prevalence and related factors of live births with cleft lip and/or palate (CL/P). Cleft lip and palate overall affected 1.9 per 1,000 live births.. Alonso and Brigetty (2020)) used data from Colombia's national administrative records to conduct a cross-sectional analysis. Colombia had a birth prevalence of 6.0 per 10,000 live births and a population prevalence of 3.27 per 10,000. In the analysis of trends for the prevalence proportion by sort of clefts in newborn babies, it was discovered that infants with CLP had the highest percentage.

A descriptive study was done in Yazd, Iran by Karbasi et al.(2011) in which 7881 primary school pupils were assessed for speech abnormalities using a direct and face-to-face evaluation method. A total of 14.8% of people had speech difficulties, of which 13.8% had speech-sound disorders, 1.2% stuttering, and 0.47% voice issues. Some studies reports Voice disorders in children has a prevalence which ranges between 6% and 23% (Garcia Martins et al., 2013; Leiva & Villagrán, 2014; Possamai & Hartley, 2013) . A recent study by Mohammadzadeh and Sandoughdar (2017) in Iran indicated a prevalence of 53.2% of voice disorders in primary school students.

Johnson (2017) reported about 10% of people will experience a learning disability throughout their lives. Compared to girls, guys are more likely to experience learning difficulties .McKinnon et al.(2007) did a study on 10,425 students in Australia to identify those with speech difficulties using a 4-stage procedure. The study's findings show that 1.06 percent of these school-age children suffer from a speech-sound issue. Males were more likely than females to have speech impairments. The prevalence of speech impairments reduced as grade level increased. In a different study by Eadie et al.(2015) ,1494 participants out of an Australian longitudinal group underwent thorough evaluations of their pre-literacy, speech, and language skills when they were 4 years old. Speech problems were present in 3.4% of people. Similarly, Wren et al. (2016) conducted a study to investigate the prevalence and determinants of persistent speech sound disorder (SSD) in 8-year-old children, ignoring those who just presented with common clinical abnormalities (i.e., residual errors). Persistent SSD prevalence was estimated to be 3.6%.

The occurrence of stuttering among students in Cairo was explored by Abou Ella et al .(2015) using a multi-stage random sampling procedure from 10 schools and a total of 8765 primary school students. The prevalence was 1.03 %. In the elder age group, there was a trend toward less stuttering. In a study by Tchoungui Oyono et al.(2018) conducted on 460 participants between the age of 3–5 years the prevalence of fluency disorders was reported to be 8.4% .

By examining the audiological characteristics of children in Rasht, Iran who are in the early grades, Jalali et al.(2020) intended to determine the prevalence of hearing problems in this community. In all, 2019 children were analyzed for the study. The prevalence of hearing loss greater than 15 dB in the right and left ears was found to be 1.94

% and 1.68 %, respectively. Similarly,1.14 % and 1.04 % respectively, of the right and left ears had a high-frequency hearing loss more than 15 dB. Boys were more likely than girls to have hearing loss (in all frequencies).

2.2.2 *Indian reports on incidence and prevalence of communication disorders in children*.

According to a study by Konadath et al.(2013) 6.07 % of the 15,441 people surveyed in the Mandya district, Karnataka were at risk for communication impairments. Those identified as being at risk were then forwarded for a thorough review. Each participant was assessed for the existence of speech and language difficulties as well as ear-related issues. Out of those assessed, 168 people (31.76%) had clinically normal communication abilities, while 361 people (68.24%) had communication difficulties. 34 (9.42%) of the recorded population who were afflicted had speech and language impairments, and 327 (90.58%) experienced ear-related issues. Neurogenic stuttering and multiple impairments were least common, whereas child language disorders were most common. Additionally, boys had a higher prevalence than girls. When compared to other age groups, children between the ages of 3 and 15 had the highest prevalence of speech and language issues, while seniors had the lowest frequency.

The Department of Prevention of Communication Difficulties (POCD), AIISH released a report in 2015, on various school screening activities carried out by the department. According to the report 2010 children were screened from over 25 schools from the years 2012-2014.Among these school children, 14.2% had some form of communication disorders. The most frequent disorders were found to be language-related,

followed by speech, hearing, and multiple disabilities. It was also found that rural areas had higher rates of language, speech, hearing, and multiple abnormalities than urban areas. Relatively, the lower primary grades had a greater prevalence of language problems, speech disorders, hearing abnormalities, and multiple disorders than the upper primary grades. The findings also showed that boys were more likely than girls to experience language disorders, speech disorders, hearing disorders, and multiple disorders.

Raina et al. (2015) carried out a second cross-sectional two-phase examination on all of the kids between the ages of 1 and 10. Phase one of the process involved screening all of the kids between the ages of 1 and 10 using a local instrument for autism assessment. During phase one, the subjects' sociodemographic characteristics were also noted. Phase two entailed clinically evaluating people who had shown signs of autism during screening. The findings indicate a 0.9/1000 prevalence rate. Children with cerebral palsy were the subject of a study by Chauhan et al.(2019) that examined prospective/retrospective, cross-sectional, and cohort studies. The overall pooled prevalence of cerebral palsy was 2.95. Another study was carried out in Andhra Pradesh by Reddy et al.(2010) . The study was done in urban, semi-urban, and rural districts. Findings indicated Children born with Clefts are at a rate of 1.09 per 1000 live births.

Lakhan et al. (2015) reported Intellectual disability is prevalent throughout in India at the rate of 10.5/1000. Rural population rate is 10.08/1000, and urban population rate is 11.1/1000. The prevalence was shown to be strongly associated with age, both in urban and rural populations of children and adults. For children living in urban environments, the potential for confounding or the presence of variables was recognized. Similarly, Sharma et al. (2016) conducted a cross-sectional study with children aged 1 to

10 in the rural and urban Kangra district of Himachal Pradesh, India. The study population had a 1.71 percent prevalence of mental retardation.

Additionally, Singh et al.(2017) reported that the prevalence rate of certain types of Learning disabilities in India ranges 5 to 15 %. Goel (2021) used a sociodemographic datasheet and a structured questionnaire instrument to perform a study utilizing 100 primary school teachers as subjects in chosen primary schools in Delhi to determine the prevalence of specific LDs among primary school kids. According to the analysis of the questionnaire completed by 100 teachers, out of 2934 kids, 784 (or 26 % of the pupils) were at risk of acquiring learning disabilities. According to the study, out of 784 primary school kids who were deemed at risk, 54.9 % were found to have dyslexia, 23.9 % to have dysgraphia, and 21.1 % to have dyscalculia. It has been determined that 26 % of primary school pupils are at likelihood of developing certain learning disabilities.

Children were screened from 97 schools in the Indian state of Tamil Nadu by Devi et al.(2018).The prevalence of stuttering was determined to be 0.46 per among the 74,544 school children that were screened. They saw that the sex ratio was generally more in males (4:1). The severity of stuttering was somewhat and strongly correlated with age at onset and gender. Verma et al. (2021) concluded the prevalence of Hearing loss in children was between 6.6% to 16.47%.

Jijo et al. (2020) did a study by reviewing the clinical records of patients who had been seen over the preceding three years at the JSS Institute of Speech and Hearing, Dharwad, Karnataka. Additionally, information about the attendees of the speech and hearing camp held in Bijapur, Karnataka was also considered. A total of 2064 persons with

communication disorders were included in the study. Findings showed that hearing impairment was the most prevalent ailment among individuals with communication issues in both children and adults. Additional communication impairments included specific language impairment (8.04%), delayed speech and language secondary to cerebral palsy (7.21%), and delayed speech and language secondary to intellectual disability (6.15%).

A report was published by the Department for prevention of communication disorders, AIISH Mysore in 2022 (Sreedevi et al., 2022). The report included information on school screening that took place in and around several Karnataka districts during the period from 2008 to 2020. In this cross-sectional study, communication impairments were tested in a total of 20,424 school-age children (Boys: 10639; Girls: 9785) from Kindergarten to Pre-university. Students from 48 private schools (9542 Children) and 137 government schools (10882 Children) made up the sample population for this study. Out of the total number of school children evaluated, 17,707 students (86.7 %) passed the screening test, while 2,717(13.3 %) were at risk for various communication impairments.

Speech-Language difficulties and hearing disorders were among these communication impairments. Males (14.9 %) were found to have a higher percentage of at risk for communication difficulties than females (11.5 %). Additionally, analysis of the differences across the diseases showed that boys had a higher percentage of at-risk individuals than girls in both hearing and speech-language disorders, with speech-language disorders showing the most difference between the genders.

Government schools (15.9 %) had a higher percentage of children with communication disorders than private schools (10.4 percent). Though hearing and speech-

language impairments were both prevalent in government schools, the difference was more pronounced in speech-language abnormalities. A higher percentage of communication impairments were found in Kinder Garden students (15.6 percent), according to an analysis of students in different grades who were at risk. Compared to Kindergarten and Pre-university, primary, higher primary, and high schools had significantly more speech-language impairments detected. 1492 (7.3 %) of the 20424 children who were screened had hearing impairments, including hearing loss as well as middle ear conditions including impacted wax, Otitis media, anomalies of the tympanic membrane, and so on. Bilateral abnormalities/hearing loss (both ears in 979 children, 65.62 %) occurred more frequently than unilateral (that is, right or left ear in 513 children, 34.38 %). Among these kids, 312 (20.9 %) only had hearing loss that ranged from mild to profound, most likely of the sensorineural variety, without any middle ear issues, 178 (11.9 %) had middle ear issues, and 1,002 (67.2 %) had both hearing impairment and middle ear issues.

A total of 1180 school children had either hearing loss or middle ear difficulties. Children of school age experienced impacted wax the most frequently, followed by otitis media, TM abnormalities, and ET dysfunction. The majority of the children had otitis media (1.1%), impacted wax (3.2%), and tympanic membrane abnormalities (0.7%).

Further, out of 20424 schoolchildren, 1225 (6%) were deemed to be at risk for speech-language difficulties. The majority of school-age children have learning problems, which are then followed by spoken language disorders, fluency disorders (stuttering), speech sound disorders (pronunciation issues), and other conditions.

Thus, we see communication disorders are significantly prevalent in school going children and there is an in increasing needs to identify and rehabilitate at the earliest.

2.3 Early Identification of Childhood Communication Disorders

It makes sense that it would be advantageous to identify emerging issues in young children as soon as possible because doing so would enable a more successful course of action and better outcomes. In order to identify children who may have behavioral or developmental issues, it is vital to address parental concerns. However, this is not sufficient in and of itself (Lagerberg, 2005) .It might be difficult to distinguish between little problems that go away quickly and problems that could be more problematic. Parents' ability to identify issues and seek treatment may be impacted by social situations, cultural and linguistic hurdles, or depression. Some parents may also find it challenging to interact with and communicate with specialists.

Results from more than 40 years of applied research in the areas of brain research, speech-language pathology, and early childhood special education show that effective early intervention programmes improve the lifetime outcomes of children who are at risk and vulnerable as well as have a number of beneficial social effects. (Shonkoff & Phillips, 2000).

Early intervention can change maladaptive trajectories brought on by innate speech-language and communication weaknesses, and it can also lessen more serious outcomes. The integrity of brain circuitry, which is developed as a result of complex interactions between genes, early environments, and experiences, substantially influences coping skills, competence, health, and well-being. Early language skill development

facilitates literacy proficiency, problem solving, sophisticated social behavior, and cultural learning. By the age of 3 years kids who don't get the best start in their language development are neither read nor equipped for the requirements of compulsory formal schooling. They are unable to use language to support their understanding of math and science concepts, which includes language used to negotiate complex relationships and sentiments with peers and adults and to solve problems related to their rapidly growing community base.

2.4 Awareness of Teachers on Communication Disorders

2.4.1 Western *Literature on Teachers' Awareness of Childhood Communication Disorders*

Abrahams et al. (2016) conducted a study using a quantitative, cross-sectional survey study design in the Western Cape, South Africa. A cluster sample of 469 people completed the self-administered POSHA-S questionnaire. The majority of the sample had positive attitudes toward stuttering, especially in regards to the potential of those who stammer, however it should be noted that these opinions were not uniformly good. However, teachers continued to hold false beliefs about personality types and what causes stuttering. As teachers play a significant role in the intervention process for primary school-aged children who stammer, the study gives speech-language therapists a framework for thinking about intervention with teachers and which areas of stuttering to examine.

A Korean study by Song and Kim (2016) investigated whether parents and instructors were aware of the degree to which behavioral traits were connected to children's voice issues. 89 kids between the ages of 3 to 5 had their voice samples obtained, and the G

scale of the GRBAS was used to rate the quality of their voices. The pediatric Voice Handicap Index (pVHI) and the psycho- and voice-behavioral characteristics of the children's parents and teachers were included in the questionnaire. These are the outcomes. First, the G scale results for their children's behavioral features and pVHI showed no significant changes. However, there was no difference in pVHI between parents and teachers, although there were substantial behavioral differences between the two. Additionally, both in parents and teachers, there was a substantial association between the psycho-behavioral and voice behavioral traits. These findings show that parents and instructors are unaware of the voice issues that their kids have, and that these voice issues are influenced by behavioral traits related to vocal use.

Ghimire (2017) conducted a study in 16 schools in the Nepalese city of Dharan. The convenience sample technique was used to pick 150 elementary school teachers and a structured questionnaire was employed. The majority of primary school teachers, 79 (52.67 %), had only fair awareness of learning difficulties, while 71 (47.33%) had insufficient information. The results indicated teachers' awareness of learning impairments is inadequate. Author also highlights that when it comes to initially recognizing learning problems in schoolchildren, classroom teachers are crucial.

Twenty UK-based preschool, primary, and secondary school teachers with knowledge of working with pupils with CL/P took part in a study by Stock et al.(2019)which used an open-ended survey to gather qualitative data from these teachers. The data was arranged under the following five key headings: comprehension of CL/P and its effects, impression of clefting on schooling, needs for teachers' professional development, method of delivery, and influence of CL/P on teachers. Teachers could identify a wide variety of possible social, emotional, and treatment-related issues in the

classroom, but they did not believe that CL/P would have a long-term impact on students' academic progress. According to participant teachers, getting cleft-specific training and having access to appropriate resources would be very beneficial.

A self-administered questionnaire on teacher knowledge of speech/language impairment was used in a study by Uysal et al.(2019) that involved 153 preschool teachers from Kocaeli, Turkey. The research revealed that preschool teachers have limited understanding and awareness of children with speech and language impairments. 46 % of participants said they have little to no experience working with children who have speech and language impairments and don't believe they are competent to teach students who have severe language problems. The results showed that preschool teachers need to learn via seminars and practical workshops about the tools and instructional approaches for successfully educating kids with speech and language impairments.

Jalali et al.(2020) evaluated the familiarity of Jordanian teachers with the most common signs of diseases and developmental disorders. The expertise of the 448 school teachers were evaluated using a specially created test with 30 questions covering intellectual disabilities (ID), autism (ASD), behavioural and emotional disorders (EBD), learning disabilities (LD), and attention deficit and hyperactivity disorder (ADHD). The results demonstrate that teachers are not aware of several traits connected to ailments and developmental problems. LD and ADHD are common aberrant conditions in schoolchildren, but teachers lacked the necessary expertise in this field.

In order to determine the degree of knowledge and attitudes of Makkah elementary school teachers toward children with hearing issues in the classroom, a study was carried

out in Saudi Arabia by Al Otaibi et al.(2020). A cross-sectional analytical study involving 390 elementary school teachers employed by government-run schools in Makkah was carried out between May and December of 2020. A self-administered Arabic questionnaire was employed, which included questions about teachers' attitudes toward and knowledge of students with hearing impairments as well as demographic and professional characteristics. They were 26 to 60 years old. Only 4.9 % of respondents said they had a solid understanding of hearing issues. Compared to their counterparts, teachers who were fairly young, low-income earners, more trained, had a degree in special education, had fewer years of experience, had classes with fewer than 20 students, taught students with hearing problems, had pupils with hearing problems at the time, and had students wearing hearing aids were more knowledgeable about children's hearing problems. Overall, 14.6% of teachers had a favorable attitude toward students who had hearing issues.

Another study by Hearne et al. (2021) assessed an online course for educating teachers on stuttering and examined the attitudes and understanding of New Zealand teachers .Phase one of the study had 59 teachers (35 primary and 24 secondary) completing an online survey about their views toward stuttering, their awareness of the condition, and their classroom management techniques. 27 primary school teachers participated in phase two, completing a brief online education package. The teachers who participated in the survey had a variety of teaching backgrounds and showed favorable opinions toward stuttering but lacked comprehensive understanding of the etiologies. When it came to claims on the usage of classroom methods, teachers frequently responded with "unsure." The e-learning course was well accepted and thought to be helpful in understanding stuttering. Knowledge and attitudes saw a shift in accuracy. Participants in this study had

good attitudes, but knowledge deficiencies. The authors concluded a brief online education programme can help teachers change their attitudes and knowledge for the better and think about new tactics to implement in their current classes.

Algethami (2022) conducted a study in Taif city in the Kingdom of Saudi Arabia to ascertain how much general education teachers are aware of the self-determination skills taught to students with intellectual disabilities at the intermediate stage and whether there are any disparities based on gender, years of experience, and academic background. The study's sample were 334 male and female general education instructors. The study's data were gathered using the questionnaire. The findings indicated that general education teachers' overall level of knowledge of the self-determination abilities given to students with intellectual disabilities in the intermediate stage and their domains scored at a medium level.

2.4.2 Indian Literature on Teachers' Awareness of Childhood Communication Disorders

Lingeswaran (2013) conducted an observational investigation with informed permission from, 34 primary school teachers belonging two separate schools in Puducherry town. With a total of 50 questions, 5 options for each, and a maximum score of 50, a multiple-choice questionnaire format was followed. All 34 teachers were able to properly answer 29% of the questions. Authors concluded majority of primary school teachers who took part had an understanding and awareness of learning difficulties.

The understanding and awareness of learning difficulties among primary school teachers was the subject of an investigation by Shukla and Agrawal (2015). The study's

objective was to determine the frequency of and familiarity with LD amongst primary school teachers. A lottery approach was used to choose sixty-eight primary school teachers for an exploratory study from different schools in the Haridwar area. The study found that elementary school teachers had little knowledge about and awareness of learning disabilities.

A questionnaire-based study was conducted by Tuli et al.(2018) in Sikkim, India, to evaluate the knowledge of early educators and any knowledge gaps they may have regarding hearing impairment. Also defined were the instructors' attitudes and impressions of the outcomes for their pupils with hearing impairments as well as their opinions on inclusive teaching. Only 71 people completed the survey. The findings showed that the teachers who responded were mostly unaware about the origins, investigations, and remedies for hearing loss (HI). 52.9 % of respondents denied that Hearing impairment was a social handicap, while the majority of participants (88.2 %) agreed that teachers must get special training before HI pupils are admitted to the school. They found that the two biggest obstacles to HI children having an inclusive education were other pupils' attitudes (29.5 %) and a lack of adequate training for classroom teachers (40.8 %).

In order to evaluate the awareness and attitudes of instructors regarding primary school students with stuttering utilizing convenient sampling, a study was carried out in primary schools in Dakshina Kannada and Mangalore by Kumar and Varghese (2018) . 70 classroom teachers who are currently working with elementary school students were chosen. Three sections of a questionnaire were created. The average response rate for questions about instructors' awareness of stuttering was 63.16 %. A score of 55.7 % was scored to the teachers' attitude, and a score of 48.5 % scored to the teachers' opinion of how

the students interacted with the stuttering youngsters. Authors concluded teachers are knowledgeable about how speech and language patterns develop as well as frequent mistakes that might happen during this period, which enables them to distinguish between stuttering and typical non-fluency. Understanding teachers' attitudes will help them mount special consideration and make the necessary referrals for the children's assistance.

In order to identify and analyze the knowledge and attitudes of primary school instructors toward children with learning disabilities in certain schools in the district of Pulwama Kashmir, a study was carried out by Arifa et al.(2020). The majority of teachers (73.3 %) had moderate understanding of learning difficulties, compared to 20 % who had insufficient information and only 6.7 % who had adequate knowledge, according to the results. Additionally, teachers were rated as having the best attitudes toward children with learning difficulties by 93.3 % of respondents. There were no teachers who had a hostile perception toward kids with learning difficulties, leaving only 6.7 % of educators who did. According to the study's findings, the majority of primary school teachers had a positive attitude towards children with learning difficulties and had a limited level of knowledge about them.

Madhamani and Joseph (2021) conducted a study in Tamil Nadu among 200 school teachers in the Dharmapuri district utilizing a structured and self-administered questionnaire. The majority of instructors (45%) were found to have a moderate degree of understanding of learning difficulties in children, but a much higher percentage of participants (33.5%) had appropriate knowledge and the remaining participants (21.5%) had insufficient information. The majority of participants (73.5%) were aware that children can have learning disabilities. The researchers came to the conclusion that it was crucial to

increase instructors' understanding of and familiarity with children's learning difficulties. They also asked governments to implement the relevant legislative measures to raise understanding and knowledge of various learning difficulties among families, teachers, and peer groups in order to guarantee that these kids are treated appropriately in the social setting. They also suggested including awareness campaigns in the curricula of teacher training programmes.

2.5 Teacher Training Programs and their outcomes

Programs for teacher development have been shown to be beneficial in changing students' behaviour. The same concepts should be applied when training educators on how to adjust their verbal behaviour in order to improve their communication skills because speech and language are also forms of behaviour. According to Webster-Stratton et al. (2004), positive outcomes from teacher training initiatives imply that educators may be able to shape the students behaviors .

The majority of the work on teacher training focuses on teaching teachers how to change the problematic behaviors of their pupils (Webster-Stratton et al., 2004).These studies on teacher training have discovered that immediate feedback and direct coaching are essential elements of successful training (Koegel et al., 1977; Scheeler et al., 2004) and the number of interactions between teachers and their coaches is positively correlated with student performance on standardized tests (Ross, 1992).

Additionally, until teachers receive high-level training, it is unlikely that pupils' behaviour will gradually improve (Koegel et al., 1977).When combined with parent or child training for kids 4 to 8 years old with behaviour issues, teacher training programmes, according to Webster-Stratton et al. (2004), helped treatment outcomes.

The ideas of the well-known parent training programme Parent Child Interaction Training (PCIT) can be applied to a teacher training programme under the term Teacher Child Interaction Training, according to McIntosh (McIntosh et al., 2000).They emphasized the necessity for treatment manuals so that programmes may be replicated in schools and the need for scientifically supported treatments such as (TCIT).

This study used a multiple baseline design to administer TCIT in two preschool classrooms in order to ascertain whether any of its components would be beneficial for improving language and communication abilities. According to the findings, training was successful in changing how teachers interacted with their pupils, and their assessments of the language and communication abilities of the students were enhanced. TCIT was used in a multiple-baseline study across four preschool classrooms by Lyon et al.(2009). They discovered a slight to moderate improvement.

In a study by Andzik et al.(2019) a convenience sample of 3,200 teachers was polled about the following issues: (a) the number and characteristics of students who lack effective communication skills; (b) the actions taken by teachers to encourage the adoption of AAC; and (c) the kind and duration of training that teachers had specifically for assisting students who require communication supports. Researchers discovered a statistically significant correlation between the teacher's training and the pupils' communication skills. Additionally, teachers who have received more training tend to use a larger range of support techniques, and some training programmes may be more efficient for a particular method of communication.

As a part of a teacher preparation programme, an assistive technology (AT) training component was examined by Van LaarhoVen and Conderman (2011). Following

the completion of the AT programme for undergraduates, participants expressed satisfaction with the knowledge they had learned and a preference for the training's practical aspects. The ability of these people to use AT with kids who have disabilities was not evaluated by researchers, who did not observe these participants in classrooms.

In 2005, Patel and Khamis-Dakwar (2005) piloted a programme to give special education teachers who interact with students who have complex communication requirements on-the-job training. Teachers reported feeling more at ease using AAC with their students who had complex communication requirements after completing didactic training and on-site supervision. Since pre-service and in-service special education instructors have been the focus of the majority of efficacy research, formal training from communication specialists appears to be the most thoroughly studied type of training.

In an another study by Probst and Leppert (2008), a pre-post design was used to develop and assess a teacher training programme for Autism Spectrum Disorders (ASD) that is based on a structures instruction . The pre-post scores based on measures by teacher questionnaire indicated substantial improvement on the class room teachers stress reaction scale. The training involved a total of 10 teachers working with 10 ASD students (Mean age 10 years) in special education classrooms in Germany. Additionally, teachers used two organized teaching techniques in each classroom on average. These results offer some preliminary proof of the therapeutic and social relevance of the training programme under investigation.

Specific communication impairments are not covered in the New Zealand TEACCH primary teacher preparation programmes (SCDs). The effectiveness of a three

hour professional development (PD) programme for a specific group of primary teachers , Special Education Needs Coordinators (SENCOs), around working with kids with SCDs in the classroom was examined by (Cunningham et al., 2009) . Six SENCOs from various schools took part. A within-subjects pretest posttest design was used to assess the effectiveness. The participants reported positive outcomes to the study and asked to develop the PD programme into an effective resource for class room teachers.

Morrier et al.(2011) looked into the training that instructors of children with autism receive. Using an online version of the Autism Treatment Survey, 90 teachers (n = 90) reported training they had received. Less than 15% of respondents reported obtaining training through college or university teacher preparation programmes; full- or half-day workshops were the most frequent type of training mentioned. The usage of evidence-based procedures was not predicted by the forms of training received. Education level, years of teaching kids with ASD, and class style were not important individual training factors. The researchers argued that there is a greater need for teacher preparation programmes for students with ASD.

A departmental project was carried out at All India Institute of Speech and Hearing, Mysore to evaluate the needs for successful inclusive education program from 2006-2008 by Sreedevi et al. (2008). A questionnaire was made considering eight domains related to children with hearing loss. These domains included language skills, social skills, reading/writing skills general knowledge, pragmatic skills, problems faced during extracurricular activities and classroom management. A pre-test was carried out for teachers who worked in classrooms with children having hearing impairment. Followed by this an orientation program was provided which focused on hearing impairment and

strategies for managing children with hearing Impairment in an inclusive set up. The outcomes of the study revealed a positive shift in the attitude of teachers for all the eight domains considered. Teachers who were younger and least experienced showed most positive outcomes while teachers who had experience of more than 11 years were least accepting for the concept of inclusion. Attitudes were also not related significantly to the teacher's gender, teaching subject, and previous knowledge of someone with communication difficulties.

By conducting pre-tests prior to intervention and post-test following intervention on the seventh and sixty-fifth day, Moharana (2019) conducted a study in Orissa which sought to assess the effectiveness of the guidelines on trainee school teachers' knowledge and attitude toward identification and management of children with specific learning disabilities (SPLDs). One district was chosen from each Zone (East, West, North, and South) of Orissa. A sample of 269 aspiring teachers for public schools was chosen. In this study, a pretested and predesigned questionnaire was used in a qualitative study approach. The findings showed that the instructions for aspiring school teachers for the identification and management of children with SPLD were successful in enhancing their knowledge and attitude over time. Researcher concluded Guidelines (self-instructional modules) help aspiring school teachers develop their understanding of and attitudes for recognizing and treating children with SPLDs throughout time.

The department of Tele-Centre for persons with Disabilities, All India Institute of Speech and Hearing, Mysore along with Zonal institute of educational training, Mysore published a report on a series of conducted tele-orientation programs for Kendra Vidyalaya administrative staffs and teachers (Shanbal & Rangaswamy, 2022). A total of 563 Kendra

Vidyalaya staffs participated in the study. A series of 17 tele-orientation sessions were provided for these subjects and following this a google form was provided for feedback and usefulness of the programme. Out of the total 563 participants on 312 responded to the google forms (response rate: 55%). On analysis of the feedback forms 99.04% reported the content of the programme was useful and relevant.

These findings must be used by teacher preparation programmes to provide comprehensive training and continuous assistance to teachers who assist students with complex communication needs.

2.6 Multimedia Training in Learning

Multimedia training is defined as "the display of words and visuals to promote learning." The words may be written in a book or spoken (as in the case of a narrator) (such as on-screen text). Images may be in a static format (such as illustrations), a dynamic format (such as animations, diagrams, maps, or images), or both (such as a video or animation). A static image with narration, an animation, video, or static graphic with onscreen text, or a computer-based interactive game, model, or activity with spoken or written text are some of the most well-liked multimedia programmes in e-learning graphics.

For hundreds of years, words have played a vital role in educational communicat ions, from spoken words (like in lectures) to written words (like on scrolls), printed word s (like in books), and eventually electronic words (such as on screens or via speakers). In terms of our species, verbal language is perhaps the most useful instrument for improving human brain and learning.The rationale for computer-based multimedia instruction is the multimedia principle, which claims that people learn better from words and pictures than

from words alone. (Butcher, 2014; C. I. Johnson & Mayer, 2009). According to the multimedia principle, when it comes to e-learning, people learn more effectively from computer-based words and graphics than from computer-based words alone.

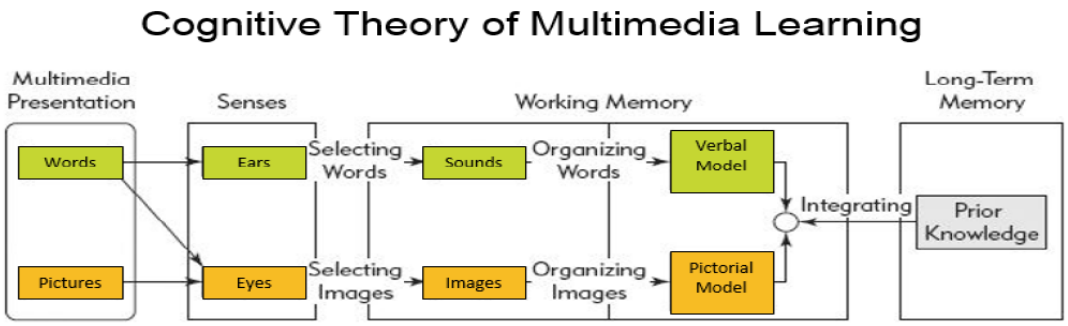


Figure 2.1

Shows Cognitive theory of Multimedia Learning

Communication skill is a very essential tool kit for a full and satisfactory life. Communication disorders may pose a threat in achieving this harmony in life. Speech and language disorders are much prevalent in school going children. Many a times a classroom teacher is not well equipped to deal with children having communication disabilities. One of the main objectives of rehabilitation is to mainstream or integrate children with disabilities into normal schools. Teachers of regular or normal schools play a major role in educational rehabilitation of children with communication needs. There are several concerns regarding current practices in teacher training programs. Teachers of regular or normal schools form an important part in the team of professionals involved in early identification and rehabilitation. The academic progress of these children primarily depend on how the classroom teacher trains them. It's a fact that many teachers are not aware of

the various strategies that can be employed to help children with communication disorders. Children with communication disorders face loads of hardships on a daily basis at school.

Only with the teacher's cooperation and improved knowledge about the problems faced by such children, can a classroom become more acceptable and warmer to a child with communication needs. Policy makers have provided may important educational policies for the disabled, the district education program (DPEP-1998), Sarva Shiksha Abhiyan (SSA -2000) to name a few. However, policy makers have been keeping a blind eye on training teachers in identifying and supporting children with communication difficulties. Research shows, with training, they prove to acquire improved skills set for early identification and appropriate referral. Only if communication difficulties are identified early in life and appropriate, timely rehabilitation is conducted can such a heavy load be lessened on the child, concerned family members, and the nation as a whole.

Chapter 3

METHODS

The development and validation of an online based Flipbook on communication disorders in Malayalam for school teachers was carried out as follows:

3.1 Research Design

A pre-posttest design was used in the study.

3.2 Source of information

The researcher referred to various public education materials and pamphlets available in English at the All-India institute of speech and hearing which were intended for teachers regarding communication disorders seen in school children. Write ups on relevant material by referring to text books and articles on communication disorders in children, basic anatomy and physiology of speech mechanism, tips for teachers and their roles and responsibilities concerning children with communication disabilities was also prepared.

3.3 Organization of information

The information on communication disorders in children obtained in English was organized as follows:

- Basic anatomy and physiology of speech production mechanism
- Introduction to communication and its general functions.

- Common causes of various communication disorders.
- Various communication disorders seen in school-going children and their primary characteristics.
- Classroom tips and strategies that can be used with children facing communication disabilities.

The further procedures were carried out in 4 stages. This was done so as to make the procedure more systematic and organized.

3.3.1 Compilation and Content validation of the compiled public education material in English.

Once all the relevant information on communication disorders in children were collected, it was compiled. The content was divided under the sub-headings such as general features of the disorder, speech and language difficulties seen in the respective population, common etiologies for the disorder, professionals involved in assessment and management of such conditions as well as role of a teacher in school or classroom setting to help these children achieve better academic success. The materials were compiled in the form of Microsoft power point presentations. The compiled material in English was then provided to five speech-language pathologists who work closely with children with communication disorders. Content validation of the complied material was carried out by these professionals with respect to the parameters taken from the feedback questionnaire developed by Goswami et al. (2010). Rating was carried out by the professionals on a 5-point rating scale, ranging from poor to excellent. The rating scale included parameters relevant to the material.

- Simplicity
- iconicity
- Familiarity
- Size of pictures
- Color & appearance
- Relevance
- Trainability
- Stimulability
- Flexibility

The suggestions offered by the judges during the validation task were incorporated before moving to the next stage.

3.3.2 Translation of compiled material to Malayalam and validation of the Malayalam transcript.

The google writing tools were used for the translation purpose. The link to use website is https://www.google.com/intl/ml/inputtools/try/.All the entries were made using an Asus vivo book Laptop in chrome browser. Translation was carried out by researcher who was a student of the language till his higher secondary school programme. Prior to translation the researcher underwent a language proficiency test using Language Experience and Proficiency questionnaire (LEAP-Q; Ramya & Goswami,2009) and was rated '4' corresponding to 'native like' proficiency. The translated material was prepared in the form of Microsoft PowerPoint presentations. Although this translation was not 100%

accurate, the initial translation was done and further modifications were made as per the intended meaning.

Pictures appropriate to the disorder discussed and the context of the disorder were taken by the researcher from books, articles or google.com in order to make the content more transparent and receptive. All the images taken from google was filtered using the creative common license in order to avoid any copyright infringements. After the Malayalam transcript was prepared and pictures were added, six speech-language pathologists who work closely with children with communication disorders and five school teachers who are native speakers with knowledge of reading and writing in Malayalam served as judges for further content validation using the feedback questionnaire developed by Goswami et al (2010) which was mailed to them via email. They rated the Malayalam script on similar domains as done earlier for the material in English. Parameters related to pictures were kept for validation in this phase. The suggestions provided by raters including spelling errors, grammar mistakes, font size and color as well as alignment issues were reviewed, and appropriate modifications were incorporated

3.3.3 Development of the Flipbook.

In this stage, the development of the flipbook was carried out. Flipbooks actively engage the reader, with pictures and other illustrations regarding basic anatomy and physiology of speech production mechanism, communication and its types, factors leading to childhood communication disorders, various childhood communication disorders prevalent in school going children, and its impact on them, need for early identification and referral and roles and responsibilities of teachers in the rehabilitation of children with

communication disorders. The transcript was converted into a PDF format. The development of the flipbook was carried out using a digital platform. The Flip builder (flipbuilder.com) is a software designed to convert PDF and Images to HTML5 & jQuery-based page flip eBook, making PDF files more interactive and dynamic. The language used was simple, clear, and direct.

3.3.4 Validation of the Flipbook developed in Malayalam

After successful preparation of the flipbook, 28 primary school teachers of Malayalam medium schools participated in the study. They were of the age range 25-55 years. They were given a pretest based on a Google form developed with relevant questions. The questions were developed in English initially and were validated by three Speech language pathologists for appropriateness. Suggestion provided were incorporated. Following this, the finalized questions were translated to Malayalam.

The google form contained three subsections.

- Demographic details of the participant such as name, age, gender, years of experience, subject which they teach in class and their qualification.
- In the second subsection, questions regarding the characteristics of various communication disorders were presented.
- The third and final section, contained information on assessment and management of childhood communication disorders.

Both sections had 10 MCQ questions each (total 20 MCQs) with four options and one right answer. The participant was expected to choose the most appropriate answer

according to them from the provided options. The questions used are provided in appendix 2.

The posttest also had the same questions, but an additional 5 questions were added, of which four were MCQs, while the last one was descriptive question. The additional questions used are given in appendix 3. These questions covered aspects such as usefulness of the program, their confidence in identifying and referring children with communication disorders, helping other teachers in their school to identify children with communication disorders as well their suggestions on further scope of improvement of the developed flipbook. The developed flipbook was then shared with 28 teachers via Gmail and other social media platforms. The teachers were expected to go through the material. Five days later, a post test was carried out on the same participants for the same set of 20 questions using google form. The pre and post-test performance was statistically compared for ascertaining the usefulness of the material prepared using the statistical package for social science (SPSS) (version 25). A flow chart depicting the steps is shown below in figure 3.1.

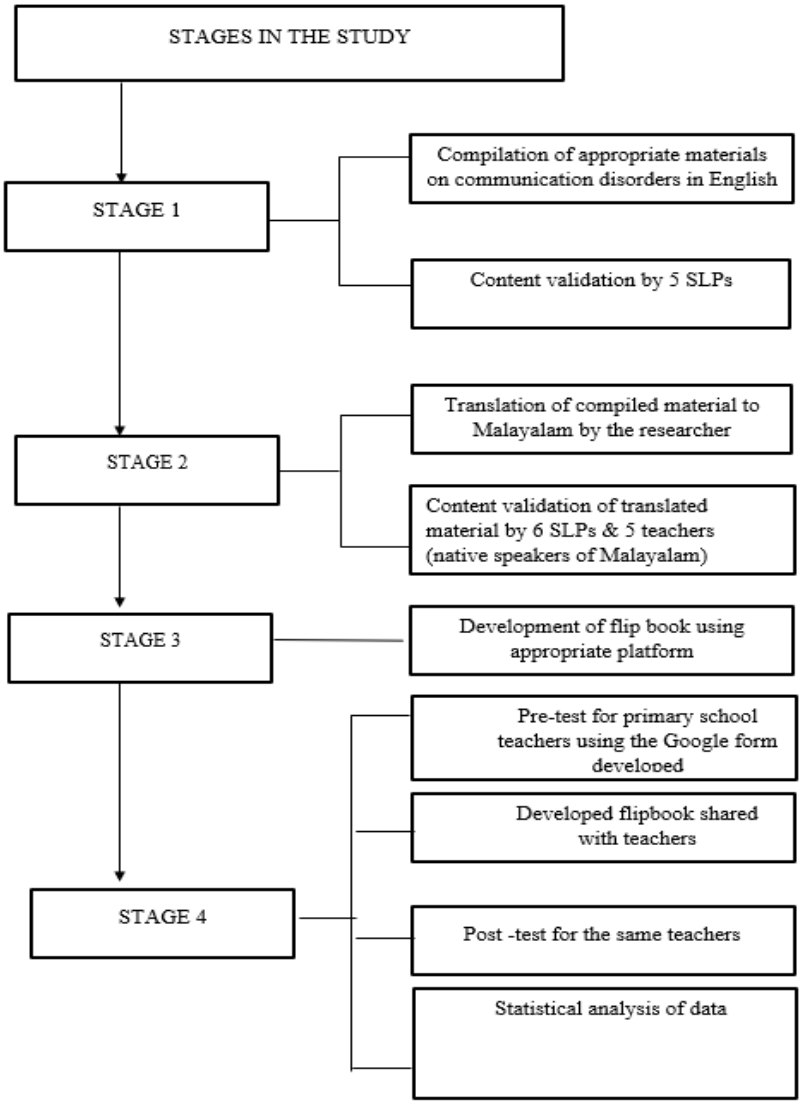


Figure 3.1

Shows flow chart depicting the methodology followed in the study

Thus, it may be concluded that the method used in the study was simple, systematic and comprehensive.

Chapter 4

RESULTS

Communication is one of the fundamental essences of human life. It allows us to let those around us know how we feel and experience things and events. Any breakdown in this capability can have serious negative consequences. Communication disorders are prevalent in school-going children, and several studies have shown their long-term effects. Teachers play a pivotal role in their students' early growth and language development. A conscious and aware teacher can identify children who find communication challenging and refer them to specialists at the earliest. Therefore, it is ideal that a classroom teacher is adequately trained for the same. There is a lot of educational material available in English. But a compiled material on various childhood communication disorders in Malayalam based on an online platform was lacking. The results of the study are reported under the following headings:

- Content validation of the English material.
- Translation of the English material to Malayalam
- Content validation of the Malayalam material
- Development of the Flipbook.
- Analysis of pre-post tests
- Feedback from teachers on the developed Flipbook

4.1 Content validation of the English material

In the initial phase, the compiled information was organized. The initial part provided a brief introduction on speech production system. Further, each disorder condition was briefly introduced, their features were described, and details of professionals who assess and treat these conditions as well as strategies teacher can use to support these children were provided. The organized information was further typed in English as Microsoft Power Point Documents. Followed by this the material was content validated by five speech-language pathologists who closely work with children having communication disorders. The feedback questionnaire developed by Goswami et al. (2010) was used for the same. The validation parameters considered were based on their relevance to the material and are provided in Appendix 1. The results of the rating carried out by the professionals are as follows;

Simplicity: This parameter was rated as good and excellent by one SLP each and 3 SLPs rated it as ‘fair’.

Familiarity: There was a mixed opinion about the familiarity of the developed material; out of five validators, only two validators rated it as 'good,' two rated ‘fair,' and another one validator rated it as ‘poor' qualitatively.

Relevance: This parameter judged whether the material was culturally and ethnically acceptable to Malayalam-speaking teaching population. This parameter also had mixed opinions wherein one validator rated it as excellent, three rated 'good,' and one rated 'poor.'

Trainability: The ratings received for this parameter revealed that the material could be used for teaching in various social environments of the subject. One validator rated it as ‘excellent,' two validators rated it as 'good,' and two others rated it as 'fair.'

Stimulability: This parameter judges whether the developed stimulus material can elicit expected responses from the subject. Three validators rated this parameter as 'good' and two validators rated it as 'fair.'

Flexibility: For optimal use of any resource material, it is necessary for the material to be easily adaptable to the user's needs. Flexibility was rated as 'good' by three validators and as 'fair.' by two validators, respectively.

The content validation carried out by the five Speech Language Pathologists for the English material is depicted in Fig 4.1

Figure 4.1

Shows content validation of English material by Speech Language pathologists

4.2 Translation of the English material to Malayalam

The translation of the English material was carried out using google writing tools using the researcher. The translation was not 100% accurate. Modifications were made in the translation to convey the intended meanings and examples were provided for making the contents more comprehensive. Followed by this it the translated material was provided for validation by six professionals and five school teachers.

4.3 Content validation of Malayalam Material

The content validation of the translated Malayalam material was carried out by six qualified Speech Language pathologists and five native Malayalam-speaking school teachers using the same feedback questionnaire by Goswami et al (2010).

4.3.1 Content validation of the Malayalam material by Speech Language pathologists

Simplicity: Qualitatively, all six validators rated as ‘excellent’ concerning the simplicity of the material.

Familiarity: All six validators rated the Malayalam translated material as ‘excellent’.

Relevance: This parameter judged whether the material was culturally and ethnically acceptable to Malayalam-speaking teaching population. This also had mixed opinions wherein four validators rated excellent and two validators rated 'good.'

Trainability: The ratings received for this parameter by the judges revealed that the material can be used for teaching in various social environments of the subject. One validator rated it as 'excellent,' four validators rated it as 'good,' while one validator rated it as ‘fair’.

Stimulability: This parameter judges whether the developed material can elicit expected responses from the subject. Three validators rated this parameter as 'good', two validators rated it as excellent, and the remaining one rated it as 'fair'.

Flexibility: For optimal use of any resource material, the material must be easily adaptable to the user's needs. Flexibility was rated as 'good' by three validators, excellent by two validators and the remaining validator rated it as 'fair.'

Colour and appearance: The color and appearance of pictures were rated as 'good' by Three validators, 'excellent' by two validators and 'fair' by one. This reveals that most of the pictures were satisfactory and attractive enough to be used in the material.

Size of images: Out of 6 validators, four rated it as 'good', and the remaining two rated it as 'excellent.'

Iconicity: Out of 6 judges, four rated this parameter as 'good,' and one ranked it as 'excellent,' meanwhile, the remaining one rated it as 'fair'. These ratings direct to the pictures used being recognizable and representative of the objects intended to portray.

The figure depicting the results of content validation by the six Speech Language Pathologists is provided below.

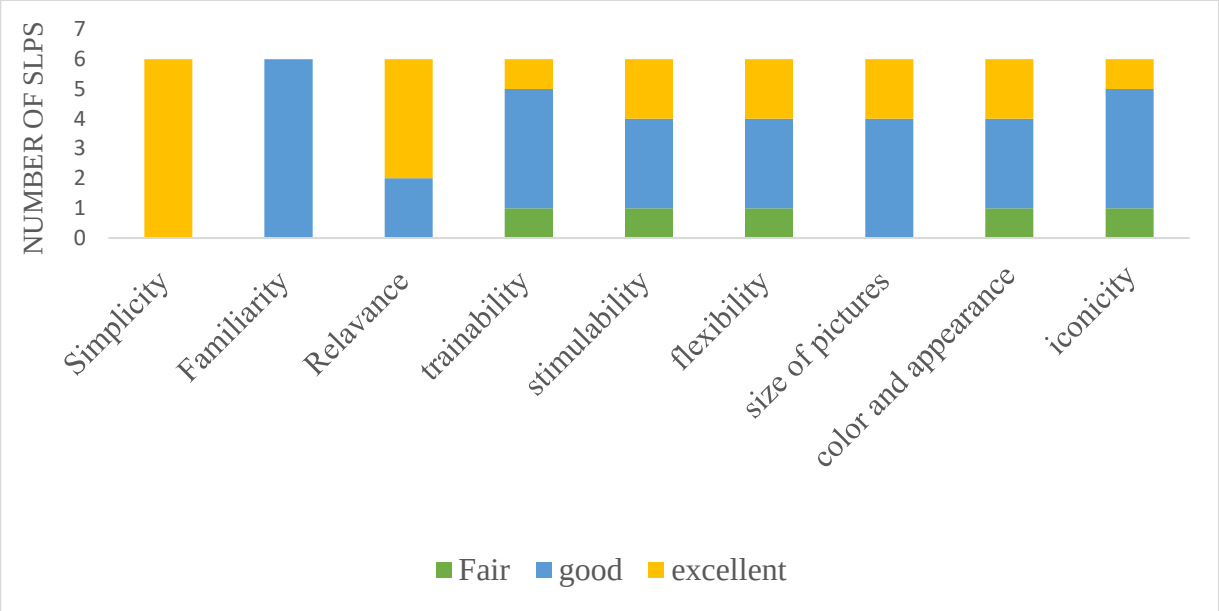


Figure 4.2

Shows content validation rating of the translated Malayalam material by Speech-Language Pathologists

4.3.2 Content validation of the Malayalam material by school teachers

Simplicity: Qualitatively, four validators rated as ‘excellent’ and one rated as ‘good’ concerning the simplicity of the material.

Familiarity: All validators rated it as ‘good' concerning understanding the material.

Relevance: This parameter judged whether the material was culturally and ethnically acceptable to the Malayalam-speaking teaching population. This also had mixed opinions; four validators rated ‘excellent’ and one rated 'good.'

Trainability: The ratings received for this parameter by the judges revealed that the material could be used for teaching in various social environments of the subject. Four validators rated it as 'good' and one was rated as 'good.'

Stimulability: This parameter judges whether the developed material can elicit expected responses from the subject. Two validators rated this parameter as 'good,' another two validators rated it as excellent, and the remaining one rated it as 'fair.'

Flexibility: For optimal use of any resource material, it is necessary for the material to be easily adaptable to the user's needs. Flexibility was rated as 'good' by two validators, excellent by one validator, and two validators rated it as 'fair.' Thus, there is more scope for improvement concerning this material.

Color and appearance: The color and appearance of pictures were rated as 'good' by

Four validators, and as 'excellent' by one validator. This reveals that most of the pictures were satisfactory and were attractive enough to be used in the material.

Size of pictures: Out of 5 validators, four rated the size of pictures in the material as 'good', and the remaining one rated it as 'excellent.'

The ratings carried out by the five Malayalam-speaking school teachers are shown in figure 4.3.

Figure 4.3

Shows content validation rating of Malayalam material by school teachers.

4.4 Development of the Flipbook

On successful completion of the validation of the Malayalam material, the PowerPoint document was converted into a PDF document. This PDF document as mentioned earlier was converted to an interactive Flipbook using Flip builder software.

4.5. Analysis of Pre-post tests

The knowledge of some primary school teachers in Kerala on childhood communication disorders was assessed twice; once before and once after familiarizing themselves with the developed Flipbook on communication disorders via Google forms. The pretest Google forms was shared with 30 school teachers and responses were obtained from 28 teachers. Followed by this, the developed Flipbook was shared with these 28 participants. However, only sixteen participants (four males and twelve females)

completed the posttest; i.e., the response rate was 53.33 %. Furthermore, statistical analysis was performed for the pre-post-test responses obtained from these sixteen participants.

The descriptive scores obtained by the school teachers for pre-test and post-test were analyzed under three domains, namely;

- Knowledge of characteristics of childhood communication disorders,
- Knowledge of assessment and management of these conditions and
- Overall knowledge of childhood communication disorders.

The results are tabulated in Table 4.1.

Table 4.1

Shows Mean and standard deviations of scores obtained by school teachers on pretest and posttest across the domains

SI.NO	Domain for pre-post comparison	**Pre-test (N= 16)**		**Post-test (N=16)**	
		Mean	SD	Mean	SD
1	Knowledge of characteristics of CCDs	5.562	1.223	7.062	1.806
2	Knowledge of Assessment and Management of CCDs	6.75	1.341	8.25	1.125
3	Overall knowledge of characteristics, assessment, and management of CCDs	12.312	2.023	15.312	2.495

Note. CCD stands for Childhood Communication Disorders

Table 4.1 reveals a difference in test scores obtained by school teachers before and after educating themselves, about Childhood communication disorders using the Flipbook shared with them. The mean scores were better for the posttest as compared to the pretest mean scores. The data distributed in table 4.1, is depicted using figures 4.4, 4.5, and 4.6.

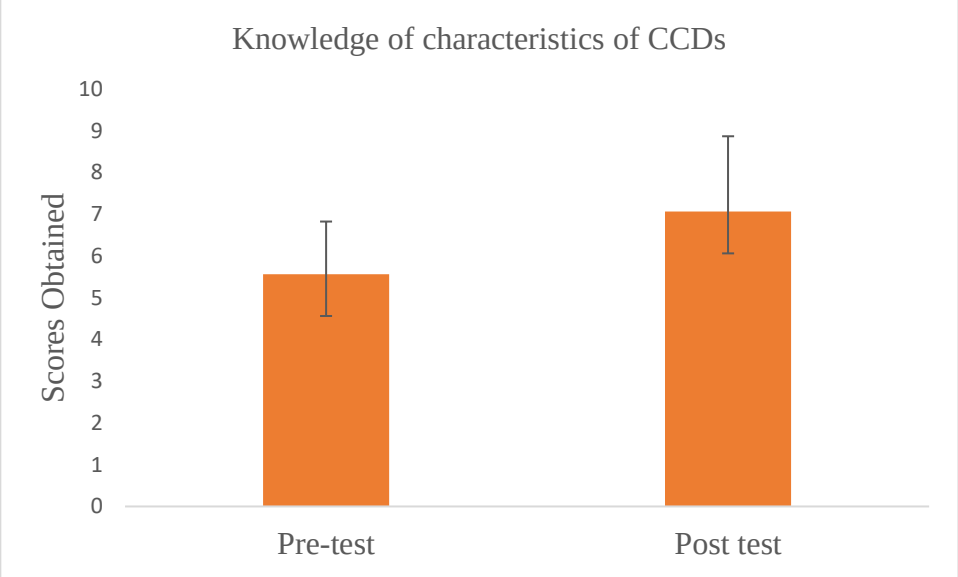


Figure 4.4

Shows pre and post-test results of teacher's knowledge of characteristics of childhood communication disorders.

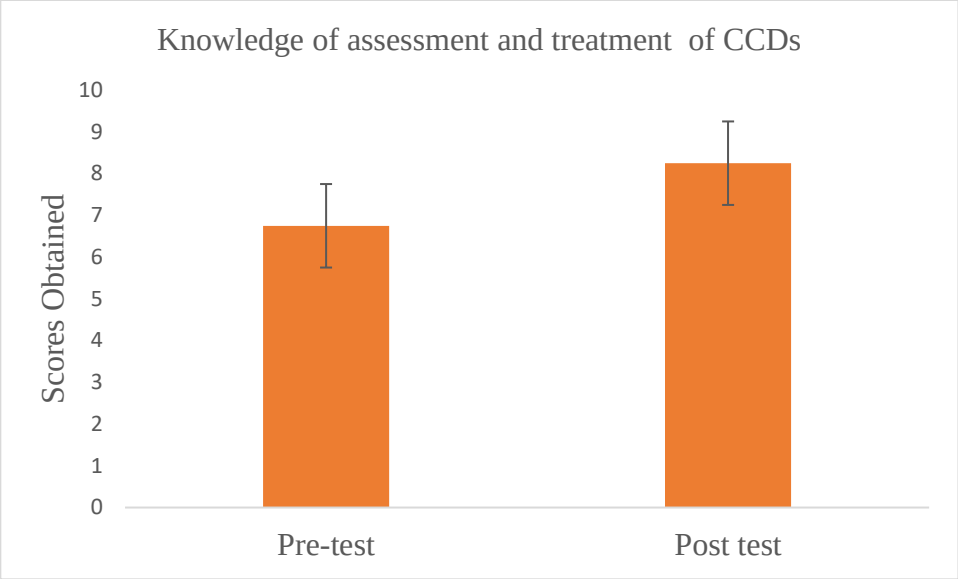


Figure 4.5

Shows pre and post-test results of teacher's knowledge of Assessment and Management of childhood communication disorders.

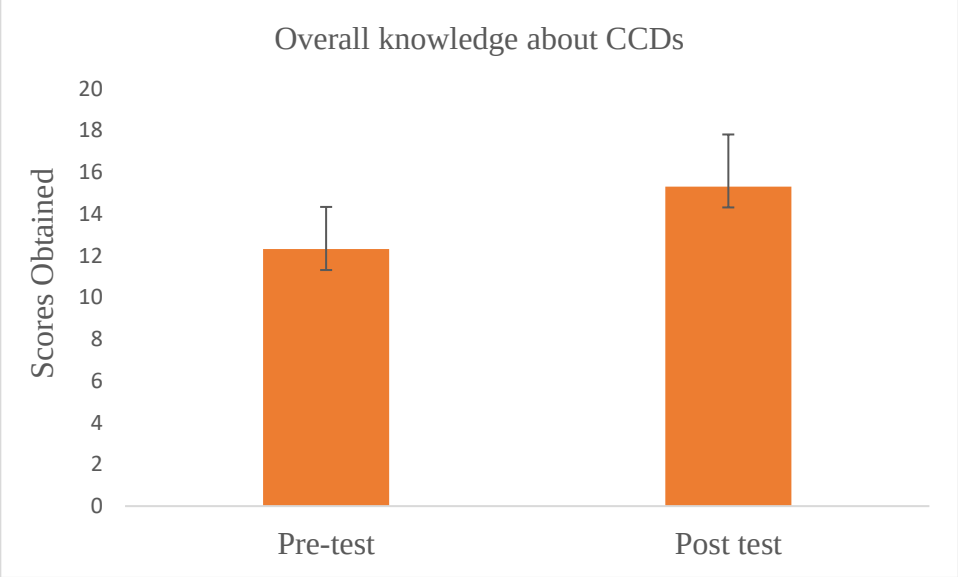


Figure 4.6

*Shows pre and post-test results obtained by school teachers on Overall knowledge about childhood communication disorder*s

The responses obtained from the sixteen participants were subjected to normality check using Shapiro-wilk test. The results of this test revealed non-normal distribution of the scores. Therefore, the non-parametric equivalent of paired t-test, i.e., the Wilcoxon Signed Rank test, was used to compare the pre-test-posttest performances. The results of the Wilcoxson's Signed Rank Test revealed a significant difference in scores obtained by the participants in all three domains during posttest. That is to say in posttest, the participants possessed a better knowledge of characteristics of childhood communication disorders, assessment and management of various childhood communication disorders and overall knowledge about childhood communication disorders. Thus, results indicate the Flipbook effectively improved school teachers' knowledge in all three domains considered. The results are summarized in Table 4.2.

Table 4.2

Shows statistical difference across pre-posttests scores of three domains of the questionnaire

SI.NO	Domain for pre-post comparison	|Z|	p
1	Knowledge of characteristics of CCDs	2.697	0.007*
2	Knowledge of assessment and characteristics of CCDs	2.757	0.006*

3	Overall knowledge of characteristics, assessment, and management of CCDs	3.164	0.002*

*Note. * Indicates a statistical significance at 0.05 level*

CCDs - Childhood communication disorders.

The responses were further analyzed by keeping age of the participant and teaching class level as grouping variables to identify if any statistically significant differences were present among the groups. There were two sub-groups under each grouping variable. In the classification based on age of the participant, the first sub-group consisted of young teachers in the age range of 25-40 years and the second sub-group comprised of participants aged between 41-55 years. In terms of teaching level, the teachers were sub-grouped as upper primary teachers, who teach students studying in fifth to seventh standard and lower primary teachers, who teach children belonging to first to fourth standard. The Mann-Whitney U-test was used to carry out these across group comparisons.

The scores obtained by teachers belonging to the two sub-groups of age wise classification were compared for their knowledge of characteristics of childhood communication disorders and its assessment and treatment. Their overall knowledge about childhood communication disorders (CCDs) was also compared. Results of Mann Whitney U-Test showed a statistically significant higher scores in participants of 41-55 years in two domains in the post test scores. These two domains were, knowledge of assessment and treatment of childhood communication disorders and overall knowledge about childhood communication disorders. However, no significant difference was seen in the third domain

of knowledge of characteristics of childhood communication disorders. The findings of the Mann Whitney U-test are summarized in table 4.3.

Table 4.3

Shows significant difference across age groups for the post test scores in the two domains of the questionnaire

SI.NO	Domain for pre-post comparison	|Z|	p
1	Knowledge of characteristics of CCDs	1.083	0.279
2	Knowledge of assessment and treatment of CCDs	2.941	0.003*
3	Overall knowledge about CCDs	2.196	0.028*

Note. The table shows only posttest values.

** Indicates a statistical significance at a 0.05 level*

CCDs - Childhood communication disorders

A graphical representation of the performance of teachers based on age range is also provided in figure 4.7

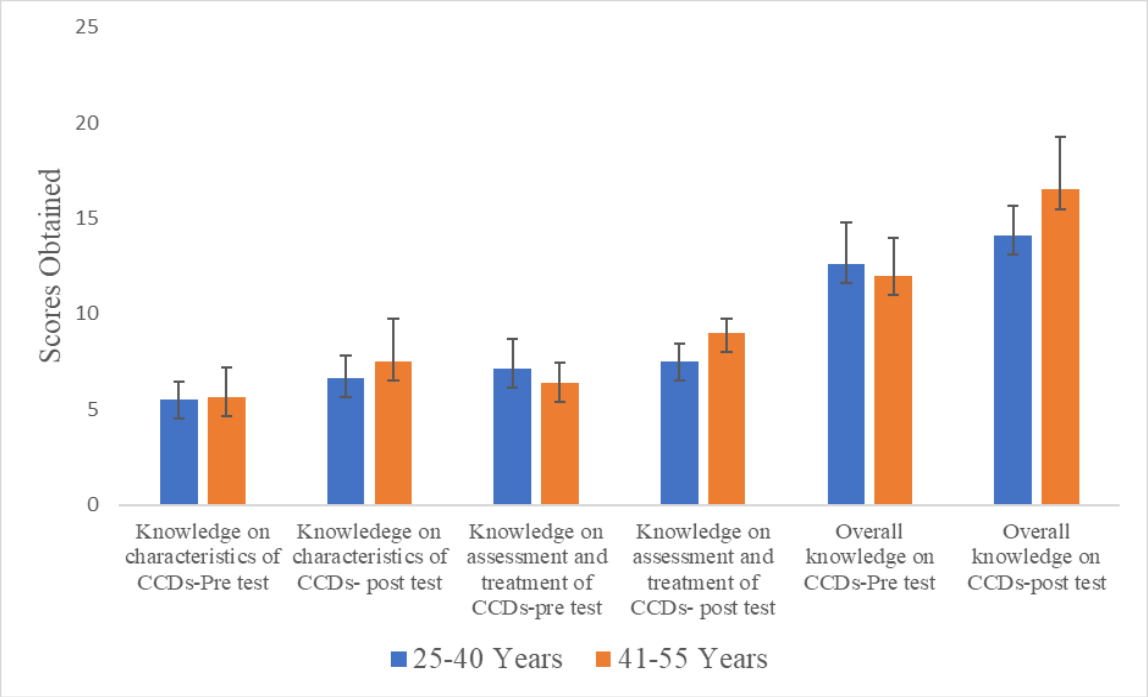


Figure 4.7

Shows graphical representation of the performance of teachers based on age as the grouping variable

The next comparison was carried out between upper and lower primary school teachers. Mann Whitney U-test was conducted to compare their performance across knowledge of characteristics of childhood communication disorders, knowledge of assessment and treatment of childhood communication disorders, and overall knowledge about childhood communication disorders. Results of the Mann Whitney U-test indicated no statistically significant differences between the groups in any of the three domains. The findings of the Mann Whitney U-test are depicted in table 4.4

Table 4.4

Shows no statistical difference across teaching levels of teachers for the post test scores in three domains of the questionnaire

SI.NO	Domain for pre-post comparison	|Z|	p
1	Knowledge of characteristics of childhood communication disorders	.967	0.33
2	Knowledge of assessment and treatment of childhood communication disorders	.432	0.66
3	Overall knowledge about childhood communication disorders	.691	0.49

Note. The table shows only posttest comparison

** Indicates a statistical significance at 0.05 level*

A graphical representation of the performance of teachers based on teaching level is also provided in Figure 4.8

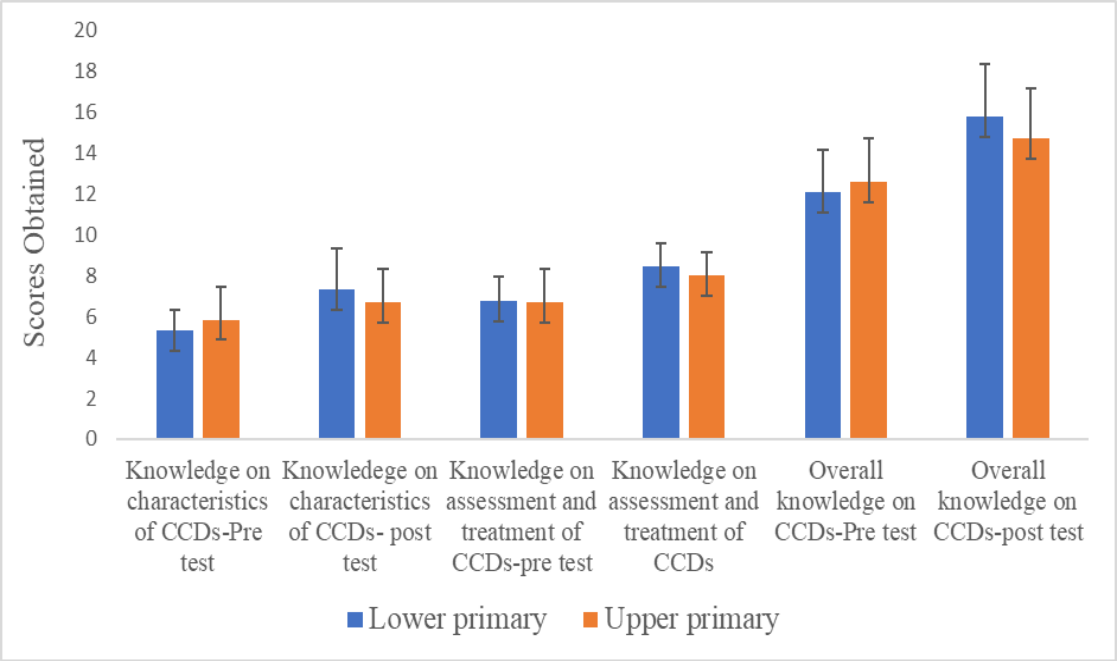


Figure 4.8

Shows graphical representation of the performance of teachers based on teaching level as the grouping variable

4.4. Feedback from teachers on the developed Flipbook

Simultaneously with the posttest, feedback was taken from school teachers regarding the developed Flipbook and its usefulness. A set of five questions were developed and distributed to the participants along with the posttest google forms. The questions used for this are provided in Appendix 3. This feedback questionnaire probed the usefulness of the material, self-perceived confidence in identifying a child with a communication disorder, self-perceived ability to help a colleague to identify a child with communication disorders, and self-perceived need for additional training regarding childhood communication disorders. The last question in the feedback questionnaire

intended to invite suggestions and recommendations from teachers to make the Flipbook more useful. The results of the feedback section is summarized below.

In terms of the usefulness of the material, out of the 16 teachers who participated in the study, twelve teachers (75 %) responded the developed material was helpful, and four of them (25 %) reported the material was somewhat helpful for identification and making appropriate referral of various childhood communication disorders.

The second question of the feedback questionnaire intended to elicit information on how confident the teacher felt about his/her ability in identifying a student with communication disorders. Nine teachers (56.25 %) responded that they are confident in identifying students who have communication difficulties. However, the remaining seven (43.75 %) reported that they are some-what confident in identifying students with communication disorders.

The third question probed the teacher's confidence in helping a colleague to identify students with communication disorders. The response showed fifteen teachers (93.75 %) were confident they could fully or partially help their colleagues at school identify a student challenged with a communication disability. However, one teacher responded she is not optimistic about helping colleagues either fully or partially.

The next question intended to explore whether the participant teachers felt a need for continued education regarding childhood communication disorders. Fourteen (87.5 %) out of the sixteen teachers opinioned they still need more learning and support to identify, refer and provide the best services for a child challenged with a communication disability. The remaining two (12.5 %) felt there is no need for further training.

The last question in the feedback questionnaire was to elicit suggestions from the participant teachers on how to make the material more useful. It was an open-ended and inviting question. Some noteworthy suggestions were to provide more orientation classes on various childhood communication disorders and educating other school teachers using the material, as well as reaching out to a maximum number of school teachers in Kerala. The summary of findings of the feedback form is given in table 4.5.

Table no 4.5

Shows the feedback responses from number of teachers on the developed Flipbook.

SL.NO	*Questions asked*	*Yes*	*Somewhat/Maybe*	*No*
1.	*Did you find the Flipbook helpful?*	*12*	*4*	-
2.	*Do you confident in identifying a child with communication disorders?*	*9*	*7*	-
3.	*Do you feel you can help a colleague identify a student with communication disorders?*	*7*	*8*	*1*
4.	*Do you feel you need additional training regarding childhood communication disorders?*	*8*	*6*	*2*

5.	*Do you have any suggestions to make the flip book more useful? (Descriptive answer).*

To summarize, the results of the present study indicated the developed Flipbook was effective in equipping school teachers with necessary information on childhood communication disorders for early identification and appropriate referrals to professionals. Such timely referrals can reduce the impact of the communication disorders on the quality of life of children and their parents in a substantial way. Hence there is a need to carry out similar studies including large number of school teachers across India.

chapter 5

DISCUSSION

The primary purpose of the present study was to develop and validate an online-based Flipbook in Malayalam on childhood communication disorders for school teachers. Information on the contents of the Flipbook was compiled from public education materials, books, and articles. The material was initially developed in English, validated, and translated into Malayalam. Following the translation and validation of the content, an interactive Flipbook was developed and shared with the participant school teachers. The participants in the study were regular primary school teachers from Kerala. A pre-post-test was also conducted using Google Forms based on the developed material to check its usefulness. The data was analyzed for statistical significance using Wilcoxson's sign rank test and the Mann-Whitney U-test. The results of the study are discussed in the following two sections.

5.1 Development and validation of the Flipbook

The developed English material was content validated by five speech-language pathologists using the feedback questionnaire developed by Goswami et al. (2010). This tool uses a five-point rating scale, ranging from very poor to excellent. Results of the rating indicated that 25 out of the total 30 points fell into the "fair-good" range, with a "good" predominating. The rating provided by validators for the English material showed there was scope for improvement, which can be attributed to several reasons. First, the language used would have been more technical and formal, which meant that it would be difficult

for an ordinary school teacher to read and understand the content. Secondly, there was primarily written content in the material. Another factor may be that the information in the material may not have been arranged in order of relevance for school teachers and their classroom practices. Lastly, the English material lacked pictures that could have promoted user-friendliness and easier understanding.

After correcting the shortcomings of the English material and updating the suggestions provided by the validators, a translation into Malayalam was made using Google's writing tools. The translation was straightforward and accurate. For greater clarity, pictures and examples were added. Fonts were created in an appropriate colour and size. With the inclusion of images, illustrations, and smart arts, the content as a whole became more appealing.

Six speech-language pathologists who work closely with children with communication disabilities validated the content. The purpose was to use their knowledge and experience to make the material more comprehendible and effective in training teachers. The Malayalam transcript's content was also validated concurrently by five school teachers as well. There were several reasons why teachers were included in the validation. First, regular school teachers were the target audience for the Flipbook. Next, it gave the opportunity to learn about the common communication disorders that a teacher might run into in a classroom setting. This made it easier to arrange the material's content according to relevance. Thirdly, it offered a chance to get feedback on the reading experiences of school teachers, including reader engagement, usability, and concept clarity.

The validation results of the Malayalam material by the speech-language pathologists and teachers for the selected parameters fell into the "good to excellent" range.

For ratings carried out by the six speech-language pathologists, out of the 54 rating points, 49 fell into the "good-excellent" range. Similarly, in the case of the five teachers, out of the total 45 rating points, 41 fell into similar fields. This can be attributed to the following reasons: First, the translation was more straightforward, direct, and clear. The more informal the language, the less technical it was. Next, in order to make the content more comprehensible and user-friendly, a larger number of examples were given. Given the circumstances, it was ensured that the images were appropriate and conveyed the correct meaning. Also, the size, colour, and aesthetic appeal of the material may encourage greater user involvement and beneficial results. Fourth, the content was organized in a way that was more suitable and culturally acceptable for Malayalam-speaking teachers and their teaching methods. This meant that the developed material could fulfil its purpose effectively.

A Google form was developed to be used for the pre-post-tests. Google Forms is a simple tool for managing data in cloud. Web-based surveys can be made and designed using it. Anyone on the internet has free access to this tool provided by Google Inc. for the creation of web-based surveys. According to Vasantha Raju and Hari Narayana (2016), the advantages of the platform include its free usage policy and cost-effectiveness. Further, surveys may be created at any time with any number of respondents. The automatic collection of survey responses and data by Google Spreadsheets simplifies data collection and analysis. Thus, google forms was used to conduct the pre-test as well as post-test.

The material's first section covered topics like communication and its methods, along with the fundamental anatomy and physiology of the human speech production mechanism. The information in the section that followed was about the common childhood

communication disorders that affect school-age children. These conditions were ordered as: Speech sound disorders, learning disability, stuttering, intellectual disability, hearing loss, voice disorders, cerebral palsy, cleft Lip and Palate, Autism, and ADHD. This sequence was followed based on the most common to least common, overtly seen communication disorders among school-going children. The signs and symptoms of each condition were briefly discussed, along with information on professionals who could help and suggestions for teachers to cope in a classroom setting. The same set of questions was used to assess school teachers' performance in the post-test. The data was then analyzed using the proper statistical techniques, which will be covered in section 5.2.

5.2. Pre and Post-test Analysis

The pre-post analysis of teacher's performance was carried out using SPPS software (version 25). As the data was not normally distributed, non-parametric statistical tests were used for statistical analysis. The pre-post comparison of teachers' performance was performed using the non-parametric equivalent of a paired t-test, i.e., Wilcoxson's signed rank test. A statistically significant difference was noticed for pre-post-test scores in terms of knowledge of characteristics, knowledge of assessment and management as well as overall knowledge about Childhood communication disorders (CCDs). From this observation, it can be concluded that the Flipbook improved the ability of primary school teachers to identify students who had any forms of CCDs. Also, knowledge about appropriate referrals as well as classroom strategies that can be employed to support students with communication disorders has also shown a significant improvement.

Nagaraj (2021) found a significant difference in knowledge and awareness of voice and its disorders in Kannada-speaking school teachers following an orientation

program using a multimedia material. Similar results were obtained by Mahmoud et al. (2018), who provided an awareness program for 200 primary school teachers about the causes, types, manifestations, and treatment possibilities of mental illness among school children. The results revealed an optimal knowledge in the participants regarding mental illness among school children. Further, in a study carried out by Sreedevi et al. (2008) in Mysore, Karnataka reported a positive change in the attitude of teachers regarding successful inclusive education program for children with hearing impairment following an orientation program.

A study by Yesodharan and Nayak (2011) conducted in Udupi, Karnataka, was in consonance with the present results. A pre-test was completed before giving an awareness video program on ADHD, and a post-test was performed after seven days. The results indicated a significant improvement in primary school teachers' knowledge regarding ADHD after the awareness video program. Another study in accordance with our results was from Pakistan by Syed and Hussein (2010), who developed and evaluated an ADHD training program for teachers. The authors concluded that the workshop improved the school teachers' knowledge regarding ADHD symptomatology, and it remained significant even after six months of training.

Similarly, Silva et al. (2016) conducted a study to verify the knowledge of seventy-five teachers from public and private schools about stuttering and to check the effectiveness of a four-hour teacher training program on stuttering in expanding this knowledge. The authors concluded that the program expanded their knowledge of stuttering.

Teacher's improved performance in post-test may be attributed to the following reasons; primarily, the teachers would have acquired a better understanding and knowledge of the various CCDs discussed in the Flipbook and the assessment and rehabilitation of the school children with communication disorders. Another reason may be that teachers would have been able to relate the examples and pictures provided in contexts of childhood communication disorders to their work experiences, which enhanced their learning. The next reason may be as the material was presented in their mother tongue, school teachers would have accepted the Flipbook better and understood its content adequately.

The Mann-Whitney U test was used to compare the performance across two independent samples. For this purpose, two grouping variables were made. The first grouping variable was the age of the participant teachers, in which they were classified into two groups, one group ranging from 25–40 years and the other 41–55 years. When the scores obtained by these two groups were compared there was significant differences between the groups in terms of pre-test and post-test. Teachers belonging to the older age group of 41-55 years performed significantly better during posttest in terms knowledge on assessment and management of CCDs, as well as their overall knowledge regarding CCDs compared to teachers belonging to 25-40 years.

In a study by Rai (2014), teachers with more experience and prior training had better knowledge and awareness of ASD than teachers without more experience and prior training. On the contrary, Daniel et al. (2013) conducted a study to assess the effect of the educational module on primary school teachers' knowledge regarding early symptoms of childhood psychiatric disorders. The results indicated younger teachers and those with fewer years of teaching experience had higher knowledge gain scores than those who were

older and had more teaching experience. Similarly, the results of Sreedevi et al. (2008) revealed that younger teachers and those with fewer years of experience showed a higher positive attitude towards inclusion of children with hearing impairment. The most experienced teachers of more than 11 years of teaching were the least accepting for the concept of inclusion. Further, Omolayo et al. (2020) also concluded there exists a positive correlation between prior training and knowledge of autism.

Our findings may be attributed to the experience of older teachers who have come across many schoolchildren over a longer period and may have received prior training regarding communication disorders common in school children compared to younger and less experienced teachers. They would have been able to better relate to the classroom management strategies and the professionals who rehabilitate children with communication disorders. Also, the material might have provided more clarity about the basic understanding that was already present or acquired by them through various sources over a period of time, such as skill training programs or professional discussions with colleagues.

The results were also analyzed based on the teaching level, upper vs. lower primary teachers. However, there were no significant differences between upper and lower primary teachers regarding the conditions considered. Thus, it may be hypothesized both the upper and lower primary teachers had the same amount of basic knowledge regarding childhood communication disorders, and the Flipbook was able to promote a similar improvement in knowledge and awareness for both groups of teachers. Further, in conditions like stuttering, despite the student being in the lower or upper primary class, they show the same set of overt speech errors, such as repetitions, prolongations, or blocks.

Both groups of teachers would have related to such easily visible signs and symptoms when reading the Flipbook and gained a similar level of understanding.

The feedback received from teachers on the developed flip book was positive. As stated in results, majority of the school teachers felt the material useful as it helped them achieve a better perspective on various childhood communication disorders. Most of them voted confident in their abilities for identifying a child with communication disorder as well as helping a colleague do the same. Majority of the teachers also stated a need for additional training for improving knowledge regarding the CCDs and their assessment and treatment. Teachers also had suggestions for improving the usefulness of the material such as educating other primary school teachers using the material as well conducting more orientation program for school teachers. All these feedbacks hence suggest the fact that the developed flipbook was able to bring about a positive shift in attitude and knowledge of primary school teachers about various CCDs.

Chapter - 6

SUMMARY AND CONCLUSIONS

Communication is a skill that helps to express our needs and wants. Any difficulty in expressing oneself can have an adverse effect on a person's quality of life. As we saw in the review of literature, Childhood communication disorders (CCDs) are very much prevalent in school going children. CCDs, if left untreated can have serious long-term complications on child and his/her family's wellbeing. School teachers bear a huge responsibility in terms of identifying and referring children facing communication disabilities at the earliest. Hence, it is necessary for school teachers to have sufficient awareness and knowledge about various CCDs, their characteristics, the professionals who can rehabilitate these children as well as classroom strategies that can be employed to support children challenged with communication disabilities.

The primary purpose of the present study was to develop and validate an online based flip book for school teachers in Malayalam regarding CCDs. A pre-posttest was also carried out to analyze the usefulness of the Flipbook. The material was initially prepared in English, content validated by five Speech-Language Pathologists and translated to Malayalam by the researcher. The translated material was further content validated by six Speech-Language Pathologists and five school teachers. Followed by this a flipbook was developed.

Teachers were assessed for their knowledge on childhood communication disorders twice, once before and once after familiarizing themselves with various CCDs

using the flipbook. As the data distribution was non-normal, statistical analysis was computed by using Wilcoxson's sign Rank test and Mann Whitney U-test. The results of the statistical analysis revealed a significant improvement for teachers in terms of knowledge of characteristics of CCDs, knowledge of Assessment and Treatment of CCDs as well as overall knowledge regarding CCDs. The teachers also showed an age wise difference in performance, i.e., teachers belonging to the age group of 41-55 years performed significantly better than those belonging to 25-40 years in terms of in post-test in terms of knowledge about assessment and treatment and overall knowledge regarding CCDs. No significant difference was noticed between upper and lower primary teachers in terms of performance post-test.

The feedback received from teachers suggested the material was useful in improving teacher's knowledge in terms of CCDs. They also reported better confidence in identifying CCDs as well as helping a colleague to do the same. Majority of the teachers also felt a need for improving their existing knowledge on CCDs via orientation programs.

6.1 Implications of the study

- Teachers who are made aware about various CCDs seen in school children will be able to promote early identification of such children.
- They will be able to make appropriate referrals to the professionals involved in assessment / treatment of school children challenged with CCDs.
- These trained teachers will be able to support children with CCDs by employing various classroom strategies and teaching modifications.

- Teachers can also act as a bridge between parents and professionals. This will promote academic success and overall Quality of life of school children challenged with various CCDs.
- The online platforms like Flipbooks can provide an opportunity for educating a large number of teachers without the physical presence of SLPS/Audiologists or any logistical requirements.
- Teachers get an opportunity to educate themselves at their own pace with access to the material whenever needed, thus enabling more flexibility in learning.

6.2 Limitations of the study

- The participants in the study were small in number (N=16).
- The school teachers' posttest performance might have been better if more time was provided for posttest.

6.3 Future Directions

The current study focused on developing and validating a Flipbook on childhood communication disorders among primary school teachers in Kerala. Future studies with a colossal sample size, teachers who teach different subjects, teachers across different regions of Kerala, and teachers belonging to other levels like Kinder-garden, Pre-school, and higher secondary level is warranted. Future studies should also consider an increase in the program duration and provide more time for teachers to apply the knowledge practically in the classroom setting. Moreover, the developed Flip book can be adapted to different Indian languages and used to train teachers who are native speakers of those languages.

REFERNCES

Abou Ella, M., Saleh, M., Habil, I., El Sawy, M., & El Assal, lamia. (2015). Prevalence of stuttering in primary school children in Cairo-Egypt. *International Journal of Speech-Language Pathology*, *17*(4), 367–372. http://dx.doi.org/10.3109/17549507.2015.1010583

Abrahams, K., Harty, M., Kathard, H., St. Louis, K. O., & Thabane, L. (2016). Primary school teachers' opinions and attitudes towards stuttering in two South African urban education districts. *South African Journal of Communication Disorders*, *63*(1), 1–10. https://doi.org/10.4102/sajcd.v63i1.157

Adams, M. J. (1990). *Beginning to read: Learning and thinking about print*. Cambridge, MA: MIT Press.

Algethami, R. K. (2022). General Education Teachers' Awareness of Self-Determination Skills Provided to Students with Intellectual Disabilities in the Intermediate Stage. *Journal of Positive School Psychology*, *6*(2), 5093–5106.

Alonso, R. R. H., & Brigetty, G. P. S. (2020). Analysis of the Prevalence and Incidence of Cleft Lip and Palate in Colombia. *The Cleft Palate-Craniofacial Journal*, *57*(5), 552–559. https://doi.org/10.1177/1055665619886455

AlOtaibi, A. F., Bashawri, H. A., AlOtaibi, H. F., Alqahtani, A. H., Alzahrani, A. S., & AlOtaibi, M. S. (2020). Knowledge and Attitudes of School Teachers toward Hearing Problems with Students in General Elementary Schools in Makkah, 2019. *Medical Science*, *24*(105), 2900–2917.

Andrade, C. R. F. de. (1997). Speech-language idiopathic disorder prevalence in children from one to eleven years of age. *Revista de Saude Publica*, *31*, 495–501. https://doi.org/10.1590/s0034-89101997000600008

Andzik, N. R., Schaefer, J. M., Nichols, R. T., & Cannella-Malone, H. I. (2019). Exploring relationships between teacher training and support strategies for students utilizing augmentative and alternate communication. *Journal of International Special Needs Education*, *22*(1), 25–34. https://doi.org/10.9782/16-00044

Aram, D. M., Ekelman, B. L., & Nation, J. E. (1984). Preschoolers with language disorders: 10 years later. *Journal of Speech, Language, and Hearing Research*, *27*(2), 232–244. https://doi.org/10.1044/JSHR.2702.244

Arifa, S., Shahid, S., Siraj, & Tutor. (2020). A descriptive study to assess the knowledge and attitude of primary school teachers regarding learning disabilities among children in selected schools of district Pulwama Kashmir. *IP Journal of Paediatrics and Nursing Science*, *2*(1):19-32 https://doi.org/10.4103/IJPC.IJPC_227_19

Arkkila, E., Räsänen, P., Roine, R. P., Sintonen, H., Saar, V., & Vilkman, E. (2009). Health-related quality of life of adolescents with childhood diagnosis of specific language impairment. *International Journal of Pediatric Otorhinolaryngology*, *73*(9), 1288–1296. https://doi.org/10.1159/000319735.

Arkkila, E., Räsänen, P., Roine, R. P., & Vilkman, E. (2008). Specific language impairment in childhood is associated with impaired mental and social well-being in

adulthood. *Logopedics Phoniatrics Vocology*, *33*(4), 179–189. https://doi.org/10.1080/14015430802088289PII 792860965

Armstrong, R., Arnott, W., Copland, D. A., McMahon, K., Khan, A., Najman, J. M., & Scott, J. G. (2017). Change in receptive vocabulary from childhood to adulthood: Associated mental health, education and employment outcomes. *International Journal of Language & Communication Disorders*, *52*(5), 561–572. https://doi.org/10.1111/1460-6984.12301

Arunraj, K., Madhu Sudarshan Reddy, Sunitha E., Savithri, S. R., Animesh Barman., &Jayashree C. Shanbal. (2016). School Screening - Distribution of Communication disorders in School Children. A publication of All India Institute of Speech and Hearing, Mysuru.

Arunraj, K., Srividya, S., Ankitha, S., Spoorthi, T., Vasanthalakshmi, M, S., Sreedevi, N., & Pushpavathi, (2021, November 11-12) Prevalence of Communication Disorders among School Children and Adolescents in Southern Karnataka [Paper presentation] 1 st AIISH Audiology Convention(AIISHAC), Mysuru

Baker, L., & Cantwell, D. P. (1987). A prospective psychiatric follow-up of children with speech/language disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, *26*(4), 546–553. https://doi.org/10.1016/S0002-7138%2810%2960013-1

Beck, I. L., & McKeown, M. G. (1991). Research directions: Social studies texts are hard to understand: Mediating some of the difficulties. *Language Arts*, *68*(6), 482–490.

Beitchman, J. H., Brownlie, E. B., & Bao, L. (2014). Age 31 Mental Health Outcomes of Childhood Language and Speech Disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, *53*(10), 1102-1110.https://doi.org/10.1016/j.jaac.2014.07.006

Beitchman, J. H., Nair, R., Clegg, M., & Patel, P. G. (1986). Prevalence of speech and language disorders in 5-year-old kindergarten children in the Ottawa-Carleton region. *Journal of Speech and Hearing Disorders*, *51*(2), 98–110. https://doi.org/10.1044/JSHD.5102.98

Beitchman, J. H., Wilson, B., Johnson, C. J., Atkinson, L., Young, A., Adlaf, E., Escobar, M., & Douglas, L. (2001). Fourteen-year follow-up of speech/language-impaired and control children: Psychiatric outcome. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(1), 75–82. https://doi.org/10.1097/00004583-200101000-00019.

Benasich, A. A., Curtiss, S., & Tallal, P. (1993). Language, Learning, and Behavioral Disturbances in Childhood: A Longitudinal Perspective. *Journal of the American Academy of Child & Adolescent Psychiatry*, *32*(3), 585–594. https://doi.org/10.1097/00004583-199305000-00015

Blair, C., Peters, R., & Lawrence, F. (2003). Family dynamics and child outcomes in early intervention: The role of developmental theory in the specification of effects. *Early Childhood Research Quarterly*, *18*(4), 446–467. https://doi.org/10.1016/J.ECRESQ.2003.09.005

Blair, E., Cans, C., & Sellier, E. (2018). Epidemiology of the cerebral palsies. *Cerebral Palsy*, 19–28. https://doi.org/10.1007/978-3-319-67858-0_3

Blank, M., Weider, S., & Bridger, W. H. (1968). Verbal deficiencies in abstract thinking in early reading retardation. *American Journal of Orthopsychiatry*, *38*(5), 823-834. https://psycnet.apa.org/doi/10.1111/j.1939-0025.1968.tb00601.x

Botting, N., & Conti-Ramsden, G. (2008). The role of language, social cognition, and social skill in the functional social outcomes of young adolescents with and without a history of SLI. *British Journal of Developmental Psychology*, *26*(2), 281–300. https://doi.org/10.1348/026151007X235891

Brownlie, E. B., Beitchman, J. H., Escobar, M., Young, A., Atkinson, L., Johnson, C., Wilson, B., & Douglas, L. (2004). Early language impairment and young adult delinquent and aggressive behavior. *Journal of Abnormal Child Psychology*, *32*(4), 453–467. https://doi.org/10.1023/b:jacp.0000030297.91759.74.

Butcher, K. R. (2014). *The multimedia principle.*

Calandrella, A. M., & Wilcox, M. J. (2000). Predicting language outcomes for young prelinguistic children with developmental delay. *Journal of Speech, Language, and Hearing Research*, *43*(5), 1061–1071. https://doi.org/10.1044/JSLHR.4305.1061

Cantwell, D. P., & Baker, L. (1977). Psychiatric disorder in children with speech and language retardation: A critical review. *Archives of General Psychiatry*, *34*(5), 583–591.

Chauhan, A., Singh, M., Jaiswal, N., Agarwal, A., Sahu, J. K., & Singh, M. (2019). Prevalence of cerebral palsy in Indian children: A systematic review and meta-analysis. *The Indian Journal of Pediatrics*, *86*(12), 1124–1130. https://doi.org/10.1007/s12098-019-03024-0

Clegg, J. (2006). Childhood speech and language difficulties and later life chances. *Language and Social Disadvantage*, 59–73.

Clegg, J., Hollis, C., Mawhood, L., & Rutter, M. (2005). Developmental language disorders–a follow-up in later adult life. Cognitive, language and psychosocial outcomes. *Journal of Child Psychology and Psychiatry*, *46*(2), 128–149. https://doi.org/doi: 10.1111/j.1469-7610.2004.00342.x.

Crookes, T. G., & Greene, M. C. (1963). Some characteristics of children with two types of speech disorder. *British Journal of Educational Psychology*, *33*(1), 31–40.

Cunningham, M., Purdy, S., & Hand, L. (2009). Working with Children with Specific Communication Disorders. A Professional Development Programme for Teachers. *Kairaranga*, *10*(1), 15–21. https://doi.org/10.54322/kairaranga.v11i1.284

Daniel, L. T., Gupta, S., & Sagar, R. (2013). Effect of educational module on knowledge of primary school teachers regarding early symptoms of childhood psychiatric disorders. *Indian Journal of Psychological Medicine*, *35*(4), 368–372. https://doi.org/10.4103/0253-7176.122228

Devi, G. N., Thalamuthu, A., Valarmathi, S., Karthikeyen, N. P., & Srisailapathy, C. S. (2018). Genetic epidemiology of stuttering among school children in the state of Tamil Nadu, India. *Journal of Fluency Disorders, 58,* 11–21. https://doi.org/10.1016/j.jfludis.2018.10.001

Durkin, K., & Conti-Ramsden, G. (2007). Language, social behavior, and the quality of friendships in adolescents with and without a history of specific language impairment. *Child Development, 78*(5), 1441–1457. https://doi.org/10.1111/j.1467-8624.2007.01076.x

Durkin, K., Conti-Ramsden, G., & Simkin, Z. (2012). Functional outcomes of adolescents with a history of specific language impairment (SLI) with and without autistic symptomatology. *Journal of Autism and Developmental Disorders*, *42*(1), 123–138. https://doi.org/10.1007/s10803-011-1224-y

Eadie, P., Morgan, A., Ukoumunne, O. C., Ttofari Eecen, K., Wake, M., & Reilly, S. (2015). Speech sound disorder at 4 years: Prevalence, comorbidities, and predictors in a community cohort of children. *Developmental Medicine & Child Neurology*, *57*(6), 578–584. https://doi.org/10.1111/dmcn.12635

Elbro, C., Dalby, M., & Maarbjerg, S. (2011). Language-learning impairments: A 30-year follow-up of language-impaired children with and without psychiatric, neurological and cognitive difficulties. *International Journal of Language & Communication Disorders*, *46*(4), 437–448. https://doi.org/ 10.1111/j.1460-6984.2011.00004.x

Garcia Martins, R. H., Branco, A., Mendes Tavares, E. L., & Joia Gramuglia, A. C. (2013). Clinical Practice: Vocal nodules in dysphonic children. *European Journal of Pediatrics*, *172*(9)1161–1165. https://doi.org/10.1007/s00431-013-2048-x

Ghimire, S. (2017). Knowledge of Primary School Teacher Regarding Learning Disabilities in School Children. *Journal of Nobel Medical College*, *6*(1), 29–35. https://doi.org/10.3126/jonmc.v6i1.18084

Glogowska, M., Roulstone, S., Peters, T. J., & Enderby, P. (2006). Early speech-and language-impaired children: Linguistic, literacy, and social outcomes. *Developmental Medicine and Child Neurology*, *48*(6), 489–494. https://doi.org/10.1017/S0012162206001046

Goel, U. (2021). Prevalence of selected learning disabilities among primary schoolchildren through primary school teachers: A descriptive survey. *Indian Journal of Psychiatric Nursing*, *8*(1), 23-24. https://doi.org/10.4103/iopn.iopn_51_20

Goh Kok Yew, S., & O'Kearney, R. (2015). Early language impairments and developmental pathways of emotional problems across childhood. *International Journal of Language & Communication Disorders*, *50*(3), 358–373. https://doi.org/10.1111/1460-6984.12142

Goswami, S. P., Shanbal, J, C.,Samasthitha. S. & Navitha. U. (2010).Field Testing of Manual for Adult Non-Fluent Aphasia Therapy in Kannada (MANAT-K). Journal of the All India Institute of Speech and Hearing, *31*, 97-108.

Hearne, A., Miles, A., Douglas, J., Carr, B., Nicholls, J. R., Bullock, M. S., Pang, V., & Southwood, H. (2021). Exploring teachers' attitudes: Knowledge and classroom strategies for children who stutter in New Zealand. *Speech, Language and Hearing*, *24*(1), 28–37. https://doi.org/10.1080/2050571X.2020.1750756

Hertzman, C. (2010). Social geography of developmental health in the early years. *Healthcare Quarterly (Toronto, Ont.)*, *14*, 32–40. https://doi.org/10.12927/hcq.2010.21981

Hulit, L. M., Fahey, K. R., & Howard, M. R. (2014). *Born to talk: An introduction to speech and language development*. Pearson Higher Ed.

J. Snowling, M., Adams, J. W., Bishop, D. V., & Stothard, S. E. (2001). Educational attainments of school leavers with a preschool history of speech-language impairments. *International Journal of Language & Communication Disorders*, *36*(2), 173–183. https://doi.org/10.1080/13682820120976

Jalali, M. M., Nezamdoust, F., Ramezani, H., & Pastadast, M. (2020). Prevalence of hearing loss among school-age children in the north of Iran. *Iranian Journal of Otorhinolaryngology*, *32*(109), 85-92. https://doi.org/10.22038/ijorl.2019.36090.2191

Jijo, P. M., Sreeraj, K., Sandhya, K., Preethi, M., & Rashmi, P. (2020). Prevalence and causes of communication disorders- A retrospective study from northern Karnataka. *Clinical Epidemiology and Global Health*, *8*(1), 138–141. https://doi.org/10.1016/j.cegh.2019.06.002

Johnson, B. (2017). Learning disabilities in children: Epidemiology, risk factors and importance of early intervention. *Bmh Medical Journal-Issn 2348–392x*, *4*(1), 31–37. https://doi.org/10.1037/A0015183

Johnson, C. I., & Mayer, R. E. (2009). A testing effect with multimedia learning. *Journal of Educational Psychology*, *101*(3), 621-629. https://doi.org/10.1037/A0015183

Johnson, C. J., Beitchman, J. H., & Brownlie, E. B. (2010). *Twenty-year follow-up of children with and without speech-language impairments: Family, educational, occupational, and quality of life outcomes*,*19*(1):51-65. https://doi.org/10.1044/1058-0360%282009%2F08-0083%29

Jones, D. (2007). Speaking, listening, planning and assessing: The teacher's role in developing metacognitive awareness. *Early Child Development and Care*, *177*(6–7), 569–579. http://dx.doi.org/10.1080/03004430701378977

Karbasi, S. A., Fallah, R., & Golestan, M. (2011). The prevalence of speech disorder in primary school students in Yazd-Iran. *Acta Medica Iranica*, *49*(1) 33–37.

Kianifar, H., Hasanzadeh, N., Jahanbin, A., Ezzati, A., & Kianifar, H. (2015). Cleft lip and Palate: A 30-year Epidemiologic Study in North-East of Iran. *Iranian Journal of Otorhinolaryngology*, *27*(78), 35–41. https://doi.org/10.22038/IJORL.2015.3221

King, R. R., Jones, C., & Lasky, E. (1982). In retrospect: A fifteen-year follow-up report of speech-language-disordered children. *Language, Speech, and Hearing Services in Schools*, *13*(1), 24–32. https://doi.org/10.1044/0161-1461.1301.24

Koegel, R. L., Russo, D. C., & Rincover, A. (1977). Assessing and training teachers in the generauzed use of behavior modification with autistic children 1. *Journal of Applied Behavior Analysis*, *10*(2), 197–205. https://doi.org/10.1901/jaba.1977.10-197

Konadath, S., Chatni, S., G., J., Maruthy, S., Gupt, M., & P Swamy, S. (2013). Prevalence of communication disorders in a rural population of India. *Journal of Hearing Science*, *3*, 41–49.

Kumar, A., & Varghese, A. (2018). A Study to Assess Awareness and Attitudes of Teachers towards Primary School Children with Stuttering in Dakshina Kannada District, India. *journal of clinical and diagnostic research*, *12*(9),9-13 https://doi.org/10.7860/JCDR/2018/35202.12030

Lagerberg, D. (2005). Parental assessment of developmental delay in children: Some limitations and hazards. *Acta Paediatrica*, *94*(8), 1006–1008. https://doi.org/10.1111/j.1651-2227.2005.tb02035.x

Lakhan, R., Ekúndayò, O. T., & Shahbazi, M. (2015). An estimation of the prevalence of intellectual disabilities and its association with age in rural and urban populations in India. *Journal of Neurosciences in Rural Practice*, *6*(04), 523–528. https://doi.org/10.4103/0976-3147.165392

Law, J., Rush, R., Schoon, I., & Parsons, S. (2009). *Modeling developmental language difficulties from school entry into adulthood: Literacy, mental health, and employment outcomes*, *52*(6):1401-16. https://doi.org/10.1044/1092-4388%282009%2F08-0142%29

Leiva, C. O., & Villagrán, P. C. (2014). Evaluación y diagnóstico de la disfonía en niños. *Neumología Pediátrica*, *9*(3), 75–79. http://dx.doi.org/10.51451/np.v9i3.372

Lewis, B. A., Patton, E., Freebairn, L., Tag, J., Iyengar, S. K., Stein, C. M., & Taylor, H. G. (2016). Psychosocial co-morbidities in adolescents and adults with histories of communication disorders. *Journal of Communication Disorders*, *61*, 60–70. http://dx.doi.org/10.1016/j.jcomdis.2016.03.004

Li X., Qiu H., Jiang Z., Pang W., Guo J., Zhu L., Lyu Z., Wang L., Sun Q., Yao S., Sun Y., Guo L., & Li X. (2018). Epidemiological characteristics of cerebral palsy in twelve province in China. *Chinese Journal of Applied Clinical Pediatrics*, 378–383.

Lingeswaran, A. (2013). Assessing knowledge of primary school teachers on specific learning disabilities in two schools in India. *Journal of Education and Health Promotion*, *31*,2-30. https://doi.org/10.4103/2277-9531.115807

Lyon, A. R., Gershenson, R. A., Farahmand, F. K., Thaxter, P. J., Behling, S., & Budd, K. S. (2009). Effectiveness of teacher-child interaction training (TCIT) in a preschool setting. *Behavior Modification*, *33*(6), 855–884. https://psycnet.apa.org/doi/10.1177/0145445509344215

Lytton, H. (1968). Some Psychological and Sociological Characteristics of" Good" and" Poor Achievers"(Boys) in Remedial Reading Groups: Clinical Case Studies. *Human Development*, *11*(4), 260-76. https://doi.org/10.1159/000270611

Madhamani, A., & Joseph, A. (2021). Assessment of Knowledge and Awareness of Public School Teachers Towards Learning Disabilities in Children-An Institutional Based Cross-Sectional Study in Dharmapuri District, Tamil Nadu. *Journal of Family Medicine and Primary Care*, *10*(7), 2524-2528. https://doi.org/10.4103/jfmpc.jfmpc_1869_20

Maenner, M. J., Shaw, K. A., Bakian, A. V., Bilder, D. A., Durkin, M. S., Esler, A., Furnier, S. M., Hallas, L., Hall-Lande, J., & Hudson, A. (2021). Prevalence and characteristics of autism spectrum disorder among children aged 8 years—Autism and developmental disabilities monitoring network, 11 sites, United States, 2018. *MMWR Surveillance Summaries*, *70*(11), 1-16. https://doi.org/10.15585/mmwr.ss7011a1

Mahmoud, O., Mohamed, A., & Arafa, A. (2018). *Impact of Awareness Program on Knowledge of Primary School Teachers Regarding Mental Disorders among School Children*. https://doi.org/10.9790/1959-0703026166

McCarthy, S., Wilton, L., Murray, M. L., Hodgkins, P., Asherson, P., & Wong, I. C. (2012). The epidemiology of pharmacologically treated attention deficit hyperactivity disorder (ADHD) in children, adolescents and adults in UK primary care. *BMC Pediatrics*, *12*(1), 1–11. https://doi.org/10.1186/1471-2431-12-78

McIntosh, D. E., Rizza, M. G., & Bliss, L. (2000). Implementing empirically supported interventions: Teacher-child interaction therapy. *Psychology in the Schools*, *37*(5), 453–462. https://doi.org/10.1002/1520-6807(200009)37:5<453::AID-PITS5>3.0.CO;2-2

McKinnon, D. H., McLeod, S., & Reilly, S. (2007). The Prevalence of Stuttering, Voice, and Speech-Sound Disorders in Primary School Students in Australia. *Language, Speech, and Hearing Services in Schools*, *38*(1), 5–15. https://doi.org/10.1044/0161-1461(2007/002)

Meisels, S. J., & Shonkoff, J. P. (2000). Early childhood intervention: A continuing evolution. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (pp. 3–31). Cambridge University Press. https://doi.org/10.1017/CBO9780511529320.003

Moats, L. C. (1994). The missing foundation in teacher education: Knowledge of the structure of spoken and written language. *Annals of Dyslexia*, *44*(1), 81–102. https://doi.org/10.1007/BF02648156

Moffitt, T. E. (1993). The neuropsychology of conduct disorder. *Development and Psychopathology*, *5*(1–2), 135–151. https://doi.org/10.1017/S0954579400004302

Mohammadzadeh, A., & Sandoughdar, N. (2017). Prevalence of voice disorders in Iranian primary school students. *Journal of Voice*, *31*(2), 263.e13-263.e18. https://doi.org/10.1016/j.jvoice.2016.04.004

Moharana, K. (2019). Effectiveness of guideline on knowledge and attitude of trainee school teachers towards identification and management of children with specific learning disabilities. *Indian Journal of Psychiatric Nursing*, *16*(2), 77. https://doi.org/10.4103/IOPN.IOPN_27_19

Morrier, M. J., Hess, K. L., & Heflin, L. J. (2011). Teacher training for implementation of teaching strategies for students with autism spectrum disorders. *Teacher Education and Special Education*, *34*(2), 119–132. https://doi.org/10.1177/0888406410376660

Mouridsen, S. E., & Hauschild, K.-M. (2009). A longitudinal study of personality disorders in individuals with and without a history of developmental language disorder. *Logopedics Phoniatrics Vocology*, *34*(3), 135–141. https://doi.org/10.1080/14015430903117441.

Nagaraj , P.(2021). Development of a multimedia manual for school teachers on voice and its disorders. [Unpublished master dissertation]. University of Mysore.

Omolayo, B., Auta, M., Akinyemi, E., & Dennis, U. (2020). Knowledge and Awareness of Autism Spectrum Disorder Among Teachers in Ekiti State, Nigeria. *African Journal of Teacher Education*, *9*(2), 43–61. http://dx.doi.org/10.21083/ajote.v9i2.6240

Parsons, S., Schoon, I., Rush, R., & Law, J. (2011). Long-term outcomes for children with early language problems: Beating the odds. *Children & Society*, *25*(3), 202–214. https://doi.org/10.1111/j.1099-0860.2009.00274.x

Patel, R., & Khamis-Dakwar, R. (2005). An AAC training program for special education teachers: A case study of Palestinian Arab teachers in Israel. *Augmentative and Alternative Communication*, *21*(3), 205–217. https://doi.org/10.1080/07434610400011638

Possamai, V., & Hartley, B. (2013). Voice disorders in children. *Pediatric Clinics*, *60*(4), 879–892. https://doi.org/10.1016/j.pcl.2013.04.012

Probst, P., & Leppert, T. (2008). Brief report: Outcomes of a teacher training program for autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *38*(9), 1791–1796. https://doi.org/10.1007/s10803-008-0561-y

Rai, S ., Shetty ,A., (2014). Awareness And Knowledge Of Attention Deficit Hyperactivity Disorders Among Primary School Teachers In India. *International Journal Of Current Research And Review*.*6*(9),30-6. International Journal Of Current Research And Review. 6. 30-6.

Raina, S. K., Kashyap, V., Bhardwaj, A. K., Kumar, D., & Chander, V. (2015). Prevalence of autism spectrum disorders among children (1-10 years of age)–Findings of a mid-term report from Northwest India. *Journal of Postgraduate Medicine*, *61*(4), 243. https://doi.org/10.4103/0022-3859.166512

Ramya, M., & Goswami, S.P.(2009). Language Proficiency Questionnaire : An Adaptation of LEAP-Q in Indian Context.[Unpublished Masters Dissertation].University of Mysore.

Ravi, S. K. Sumanth, P., Saraswathi, T., Chinoor, M. A. B., Ashwini, N., & Ahemed, E. (2021). Prevalence of communication disorders among school children in Ballari, South India: A cross-sectional study. *Clinical Epidemiology and Global Health*, *12*, 100851. https://doi.org/10.1016/J.CEGH.2021.100851

Reddy, S. G., Reddy, R. R., Bronkhorst, E. M., Prasad, R., Ettema, A. M., Sailer, H. F., & Bergé, S. J. (2010). Incidence of cleft Lip and palate in the state of Andhra Pradesh, South India. *Indian Journal of Plastic Surgery : Official Publication of the Association of Plastic Surgeons of India*, *43*(2), 184–189. https://doi.org/10.4103/0970-0358.73443

Ross, J. A. (1992). Teacher efficacy and the effects of coaching on student achievement. *Canadian Journal of Education*, 17(1), 51–65. https://doi.org/10.2307/1495395

Rossetti, L. M. (2001). *Communication intervention: Birth to three*. Cengage Learning.

Rowland, A. S., Skipper, B. J., Umbach, D. M., Rabiner, D. L., Campbell, R. A., Naftel, A. J., & Sandler, D. P. (2015). The prevalence of ADHD in a population-based sample. *Journal of Attention Disorders*, *19*(9), 741–754. https://doi.org/10.1177/1087054713513799

Ruben, R. J. (2000). Redefining the survival of the fittest: Communication disorders in the 21st century. *The Laryngoscope*, *110*(2), 241–241. https://doi.org/10.1097/00005537-200002010-00010.

Scheeler, M. C., Ruhl, K. L., & McAfee, J. K. (2004). Providing performance feedback to teachers: A review. *Teacher Education and Special Education*, *27*(4), 396–407. https://doi.org/10.1177%2F088840640402700407

Schoon, I., Parsons, S., Rush, R., & Law, J. (2010). Children's language ability and psychosocial development: A 29-year follow-up study. *Pediatrics*, *126*(1), e73–e80. https://doi.org/10.1542/peds.2009-3282

Shaheen, M. M., Raquib, A., & Ahmad, S. M. (2012). Prevalence and associated socio-demographic factors of chronic suppurative otitis media among rural primary school children of Bangladesh. *International Journal of Pediatric Otorhinolaryngology*, *76*(8), 1201–1204. https://doi.org/10.1016/j.ijporl.2012.05.006

Shanbal, J.C, Karuppuswamy, A & Reddy, M. S. (2015). Distribution of Communication Disorders in primary school children. *Journal of All India Institute of Speech and Hearing*, *34*, 128-133

Shanbal, J .C. & Rangaswamy, Y. (2022). Phase II - tele orientation on communication disorders in school children for KVS staff. (M Pushpavathi - Edr). Publication of the All India institute of speech and hearing, Mysore.

Sharma, S., Raina, S. K., Bhardwaj, A. K., Chaudhary, S., Kashyap, V., & Chander, V. (2016). Prevalence of mental retardation in urban and rural populations of the goiter zone in Northwest India. *Indian Journal of Public Health, 60*(2), 131-7. https://doi.org/10.4103/0019-557X.184545

Shonkoff, J. P., & Phillips, D. A. (2000). *Committee on Integrating the Science of Early Childhood Development, National Research Council and Institute of Medicine. From neurons to neighborhoods: The science of early childhood development*. Washington: National Academy Press.

Shukla, P., & Agrawal, G. (2015). Awareness of learning disabilities among teachers of primary schools. *Online Journal of Multidisciplinary Research, 1*(1), 33–38.

Silva, L. K., Martins-Reis, V. de O., Maciel, T. M., Ribeiro, J. K. B. C., Souza, M. A. de, & Chaves, F. G. (2016). Stuttering at school: The effect of a teacher training program on stuttering. *CoDAS*, *0*, 0. https://doi.org/10.1590/2317-1782/20162015158

Singh, S., Sawani, V., Deokate, M., Panchal, S., Subramanyam, A., Shah, H., & Kamath, R. (2017). Specific learning disability: A 5 year study from India. *International Journal of Contemporary Pediatrics*, *4*(3), 863-868. https://doi.org/10.18203/2349-3291.ijcp20171687

Song, K. H., & Kim, J. (2016). The awareness of parents and teachers in the psycho- and voice behavioral characteristics related to children's voice problems. *Phonetics and Speech Sciences*, *8*(2), 49–56. https://doi.org/10.13064/KSSS.2016.8.2.049

Sreedevi, N., Arunraj, k, Vasantha Lakshmi, M. S., Sandeep, M., Spoorthi, T., Srividya, S., & Ankita, S. (2022). *SCHOOL SCREENING REPORT ON COMMUNICATION DISORDERS: At-risk prevalence rate of Hearing and Speech-Language disorders in school children*. Prevention of Communication Disorders (POCD) : Epidemiological Research Reports. https://aiishmysore.in/en/admin/file_att/Full%20report%20-%20School%20screening.pdf

Sreedevi, N .,Shoba , N. B.,Latha, C.(2008).Evaluating the needs for successful inclusive education program.An ARF project submitted to All India Institute of Speech and Hearing, Mysore

St Clair, M. C., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2011). A longitudinal study of behavioral, emotional and social difficulties in individuals with a history of specific language impairment (SLI). *Journal of Communication Disorders*, *44*(2), 186–199. https://doi.org/10.1016/j.jcomdis.2010.09.004

Stattin, H., & Klackenberg-Larsson, I. (1993). Early language and intelligence development and their relationship to future criminal behavior. *Journal of Abnormal Psychology*, *102*(3), 369. https://doi.org/10.1037/0021-843x.102.3.369

Stock, N. M., Ridley, M., & Guest, E. (2019). Teachers' perspectives on the impact of cleft lip and/or palate during the school years. *The Cleft Palate-Craniofacial Journal*, *56*(2), 204–209. https://doi.org/10.1177%2F1055665618770191

Syed, E. U., & Hussein, S. A. (2010). Increase in Teachers' Knowledge About ADHD After a Week-Long Training Program: A Pilot Study. *Journal of Attention Disorders*, *13*(4), 420–423. https://doi.org/10.1177/1087054708329972

T. Christopulos, T., & Kean, J. (2020). General education teachers' contribution to the identification of children with language disorders. *Perspectives of the ASHA Special Interest Groups*, *5*(4), 770–777. http://dx.doi.org/10.1044/2020_PERSP-19-00166

Tchoungui Oyono, L., Pascoe, M., & Singh, S. (2018). The prevalence of speech and language disorders in french-speaking preschool children from Yaoundé (Cameroon). *Journal of Speech, Language, and Hearing Research*, *61*(5), 1238–1250. https://doi.org/10.1044/2018_JSLHR-L-16-0400

Tuli, I. P., Sarkar, A., Ilapakurty, B., & Najar, I. N. (2018). Knowledge, Attitude of Sikkim Primary School Teachers About Paediatric Hearing Loss. *Indian Journal of Otolaryngology and Head & Neck Surgery*, *70*(3), 331–336. https://doi.org/10.1007/s12070-017-1095-4

Uysal, A. A., Güdük, A. H., & Tura, G. (2019). Knowledge and Attitudes of Preschool Teachers about Speech and Language Disorders in Turkey. *Asian Journal of Education and Training*, *5*(4), 562–568. https://doi.org/10.1186/s12888-016-0845-2

Van LaarhoVen, T., & Conderman, G. (2011). Integrating assistive technology into special education teacher preparation programs. *Journal of Technology and Teacher Education*, *19*(4), 473–497.

Varsha, N., & Praveena, J. (2020). Prevalence of speech language and hearing impairment in school going children of rural area: A longitudinal study. *International Journal of Community Medicine and Public Health*, *7*, 4043–4047. https://doi.org/10.18203/2394-6040.ijcmph20204374

Vasantha Raju, N., & Harinarayana, N. S. (2016, January 1). *Online survey tools: A case study of Google Forms*.

Verma, R. R., Konkimalla, A., Thakar, A., Sikka, K., Singh, A. C., & Khanna, T. (2021). Prevalence of hearing loss in India. *National Medical Journal of India*, *34*(4) 216-222. https://doi.org/10.25259/nmji_66_21

Wadman, R., Botting, N., Durkin, K., & Conti-Ramsden, G. (2011). Changes in emotional health symptoms in adolescents with specific language impairment:

Changes in emotional health. *International Journal of Language & Communication Disorders, 46*(6), 641–656. https://doi.org/10.1111/j.1460-6984.2011.00033.x

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*, *33*(1), 105–124. https://doi.org/10.1207/S15374424JCCP3301_11

Wren, Y., Miller, L. L., Peters, T. J., Emond, A., & Roulstone, S. (2016). Prevalence and Predictors of Persistent Speech Sound Disorder at Eight Years Old: Findings From a Population Cohort Study. *Journal of Speech, Language, and Hearing Research, 59*(4), 647–673. https://doi.org/10.1044/2015_JSLHR-S-14-0282

Yesodharan, R., & Nayak, A. K. (2011). Whether a video awareness programme is effective in increasing the knowledge of primary school teachers regarding ADHD? An experimental study. *I-Manager's Journal on Nursing*, *1*(4), 22-28. https://doi.org/10.26634/jnur.1.4.1529

Zeidan, J., Fombonne, E., Scorah, J., Ibrahim, A., Durkin, M. S., Saxena, S., Yusuf, A., Shih, A., & Elsabbagh, M. (2022). Global prevalence of autism: A systematic review update. *Autism Research, 15*(5), 778–790. https://doi.org/10.1002/aur.2696

APPENDIX 1

Shows feedback questionnaire used for content validation of the material.

Name of the Validator: Designation of the Validator:

SI.NO	Parameters		Very poor	Poor	fair	good	Excellent
1.	Simplicity						
2.	Familiarity						
3.	Relevance						
4.	Trainability						
5.	Stimulability						
6.	Flexibility						
7.	Size of pictures						
8.	Color and appearance						
9.	Iconicity						

Definition of Parameters.

1. Simplicity: Are the test stimuli / Material comprehendible?

2. Familiarity: Is the test material familiar to the user?

3. Relevance: Whether the test material is culturally and ethically acceptable?

4. Flexibility: Can the stimuli be easily modified?

5. Trainability: Can the Stimuli be used for intervention purposes in different milieu?

6. Stimulability: Does the stimulus material elicit responses from the individuals?

7. Size of pictures: Whether the picture stimuli are of appropriate size?

8. Color and appearance: Are the picture stimuli appropriate in terms of color and dimension?

9. Iconicity: Does the picture stimuli appear to be recognizable and representational?

APPENDIX 2

Shows the questionnaire used for carrying out pre-post assessment of school teachers via google forms.

Section-1 -Demographic details

1.നിങ്ങളുടെ പേര്?

2.വയസ്സ്?

3.Gender/ ലിംഗം?

3.നിങ്ങളുടെ വിദ്യാഭ്യാസയോഗിത എന്താണ്?

4.എത്ര നാളായി ടീച്ചറായി ജോലിചെയ്തുവരുന്നു?

5.നിങ്ങൾ കുട്ടികളെ ഏതെല്ലാം വിഷയങ്ങൾ പഠിപ്പിക്കുന്നുണ്ട്?

Section-2- കുട്ടികളിലെ ആശയവിനിമയ വൈകല്യങ്ങളുടെ ലക്ഷണങ്ങൾ (knowledge on characteristics of childhood communication disorders)

1.എത്ര വയസ്സിൽ കേൾവിക്കുറവ് കണ്ടുപിടിക്കാനാകും?

a. ഒരുദിവസമാകുമ്പോൾ

b.ഒരു വയസ് ആകുമ്പോൾ

c.മൂന്ന് വയസാകുമ്പോൾ

d.അഞ്ചുവയസ് ആകുമ്പോൾ

2. താഴെ പറയുന്നവയിൽ ഓട്ടിസം ഉള്ള കുട്ടികളിൽ കാണുന്ന ലക്ഷണം ഏത്?

a.കേൾവിക്കുറവ്

b. ഉച്ചാരണ പ്രശ്നങ്ങൾ

c. കൈ കാൽ ശക്തി കുറവ്

d. മറ്റുകുട്ടികളുടെകൂടെ ചേരാനും കളിക്കാനും ഉള്ള ബുദ്ധിമുട്ട്

3.കുട്ടികളിൽ മുതിർന്നവരെപോലെ നല്ല ഉച്ചാരണ ശുദ്ധി എത്ര വയസാകുമ്പഴേക്കും കാണപ്പെടുന്നു?

a.മൂന്നുവയസ്

b.അഞ്ചുവയസ്

c.ഒൻപതു വയസ്

d.പന്ത്രണ്ടുവയസ്

4. താഴെ പറയുന്നവയിൽ സെറിബ്രൽ പാൾസി ഉള്ള കുട്ടികളിൽ കാണുന്ന ലക്ഷണം ഏതാണ് ?

a.നടക്കുവാനുള്ള ബുദ്ധിമുട്ടുകൾ

b.കൈകാലുകളിൽ ശക്തി കുറവ്

c.ഭക്ഷണം കഴിക്കാനുള്ള ബുദ്ധിമുട്ട്

d.മുകളിൽ പറഞ്ഞവ എല്ലാം കാണപ്പെടുന്നു

5.പഠന വൈകല്യം ഉള്ള കുട്ടികളിൽ ബുദ്ധിശക്തി :

a.കുറവില്ല

b.കുറവുണ്ടാകും

c.എനിക്ക് അറിയില്ല

d.ബുദ്ധിശക്തി കുറവോ കൂടുതലോ ആയിരിക്കാം

6.കുട്ടികളിൽ കാണപ്പെടുന്ന ശബ്ദത്തിന്റെ പ്രശ്നങ്ങളുടെ പൊതുവായ കാരണമെന്താണ് ?

a.ആവശ്യത്തിന് വെള്ളം കുടിക്കാതിരിക്കുന്നത്

b.ഉറക്കെ സംസാരിക്കുന്നതും അലറുന്നതും

c.അമിതമായി ടിവി കാണുന്നത്

d. പോഷകാഹാരക്കുറവ്

7.ഉച്ചാരണ ശുദ്ധി ഇല്ലാത്ത കുട്ടികളിൽ കാണുന്ന ലക്ഷണം ഏതാണ് ?

a.ഒരു അക്ഷരത്തിനുപകരം മറ്റൊരു അക്ഷരം പറയുന്നത്

b.ചിലഅക്ഷരങ്ങൾ ഒഴിവാക്കുന്നത് /പറയാതിരിക്കുന്നത് .

c.വാക്കുകളിൽ അധികഅക്ഷരങ്ങൾ ചേർക്കുന്നത്

d.മുകളിൽ പറഞ്ഞവയെല്ലാം ഈ കുട്ടികളിൽ കാണുന്നു

8.താഴെ പറയുന്നവയിൽ പഠന വൈകല്യമുള്ള കുട്ടികളിൽ കാണുന്നത് ഏതാണ് ?

a.പാഠ്യേതര പ്രവർത്തനങ്ങളിൽ മികവ് കാണിക്കുന്നത്

b.എഴുതാനും വായിക്കാനുമുള്ള ബുദ്ധിമുട്ട്

c.ധാരാളം അക്ഷര തെറ്റുകൾ വരുത്തുന്നത്

d.മുകളിൽ പറഞ്ഞ എല്ലാ ലക്ഷണങ്ങളും കാണപ്പെടുന്നു

9. താഴെ പറയുന്നവയിൽ വിക്കുള്ള കുട്ടികളിൽ കാണാത്ത ലക്ഷണം ഏതാണ് ?

a.പറയുന്ന വാക്കുകളോ വാക്കുകളുടെ ഭാഗങ്ങളോ ആവർത്തിക്കുന്നത്

b.ഒരു വാക്കിനുപകരം വേറെ വാക്ക് ഉപയോഗിക്കുന്നത്

c.പരിമിതമായ ബുദ്ധിശക്തി

d.ആളുകളോട് സംസാരിക്കാനുള്ള മടി .

10.താഴെ പറയുന്നതിൽ ബുദ്ധിമാന്ദ്യതയെ കുറിച്ചുള്ള തെറ്റായ പ്രസ്താവന ഏതാണ്?

a.അവർക്ക് കാണാൻ കഴിയാത്ത വസ്തുക്കളുടെ പേരുകൾ എളുപ്പത്തിൽ പഠിക്കാൻ കഴിയില്ല.

b.ആംഗ്യങ്ങളും മുഖഭാവങ്ങളും മനസ്സിലാക്കാനുള്ള ബുദ്ധിമുട്ട് ഉണ്ടാകാം

c.അവരുടെ സ്വര നിലവാരം പരുക്കൻ ആയിരിക്കാം

d.ഇവിടെ കൊടുത്തിരിക്കുന്ന എല്ലാപ്രസ്താവനകളും ശെരി ആണ് .

Section-3- കുട്ടികളിലെ ആശയവിനിമയ വൈകല്യങ്ങളുടെ വിലയിരുത്തലും ചികിത്സയും (knowledge of Assessment and Management of communication disorders)

1.എത്ര വയസ്സിലാണ് മുറിച്ചുണ്ടിനുള്ള ആദ്യ ഓപ്പറേഷൻ ചെയ്യുക?

a.ഒരു മാസം പ്രായമുള്ളപ്പോൾ

b.മൂന്ന് മാസം പ്രായമുള്ളപ്പോൾ

c.ഒരു വർഷം പ്രായമുള്ളപ്പോൾ

d.മൂന്നു വർഷം പ്രായമുള്ളപ്പോൾ

2. ADHD ഉള്ള കുട്ടിയെ എങ്ങനെ സഹായിക്കാൻ ആകും ?

a.അവർക്ക് വ്യക്തവും ഹ്രസ്വവുമായ നിർദ്ദേശങ്ങൾ നൽകിക്കൊണ്ട്

b.കാര്യങ്ങൾ ആസൂത്രണം ചെയ്യാൻ കുട്ടിയെ സഹായിച്ചുകൊണ്ട്

c.പോഷകസമൃദ്ധമായ ഭക്ഷണം, ധാരാളം വ്യായാമം, മതിയായ ഉറക്കം എന്നിവ ഉറപ്പുവരുത്തികൊണ്ട്

d.മുകളിൽ പറഞ്ഞവ എല്ലാം നടത്തികൊണ്ട്

3.വിക്കുള്ള കുട്ടിയെ എങ്ങനെ സഹായിക്കാൻ ആകും ?

a.കുട്ടിയുടെ സംസാരപിഴവുകൾ എപ്പോളും തിരുത്തുന്നത്

b.നന്നായി സംസാരിക്കണം എന്ന് എപ്പോഴും ഓർമിപ്പിക്കുന്നത്

c.സാവദാനം സംസാരിക്കാൻ പ്രോത്സാഹിപ്പിക്കുന്നത്

d.വിക്കുള്ള ഒരു കുട്ടിയെ സഹായിക്കാൻ കഴിയില്ല .

4.ഓട്ടിസം ഉള്ള കുട്ടികളിലെ സെൻസറി പ്രശ്നങ്ങൾ നിയന്ത്രിക്കാൻ സഹായിക്കുന്നതാര് ?

a.സ്പീച് ലാംഗ്വേജ് പാത്തോളജിസ്റ്റ്

b.ന്യൂറോളജിസ്റ്റ്

c.പീഡിയാട്രീഷ്യൻ

d.ഒക്യുപേഷണൽ തെറാപ്പിസ്റ്റ്

5. ശ്രവണ സഹായിയിൽ നിന്ന് കുട്ടിക്ക് പരിമിതമായ ഗുണം മാത്രമേ ലഭിക്കുന്നോള്ളൂ എങ്കിൽ , അവർക്ക് പിന്നെയുള്ള ഏറ്റവും നല്ല ഓപ്ഷൻ എന്താണ് ?

a.ആംഗ്യഭാഷ പഠിക്കുന്നത്

b.വേറെ വഴികൾ ഇല്ല

c.കോക്ലിയാർ ഇംപ്ലാന്റ് ഉപയോഗിക്കുന്നത്

d.എനിക്ക് അറിയില്ല

6.ബുദ്ധി മാന്ദ്യത ഉള്ള കുട്ടിക്ക് ദൈനംദിന പ്രവർത്തികൾക്കാവശ്യമാ സൂക്ഷ്മചലനങ്ങൾ മെച്ചപ്പെടുത്താനുള്ള വ്യായാമങ്ങൾ നിർദേശിക്കുന്നതാര്?

a.ശിശുരോഗവിദഗ്ധൻ

b.മനശ്ശാസ്ത്രജ്ഞ വിദഗ്ധൻ

c.ഒക്യുപേഷണൽ തെറാപ്പിസ്റ്റ്

d.സ്പെഷ്യൽ അദ്ധ്യാപകൻ

7. ഒരു അദ്ധ്യാപകൻ എന്ന നിലയിൽ സംസാര ശബ്ദങ്ങളുടെ വൈകല്യമുള്ള കുട്ടികളെ നിങ്ങൾക് എങ്ങനെ സഹായിക്കാനാകും ?

a.സഹപാഠികൾ കുട്ടിയെ കളിയാക്കുന്നില്ലെന്ന് ഉറപ്പാക്കിക്കൊണ്ട് .

b.ക്ലാസ് മുറിയിൽ കുട്ടിക്ക് നല്ല സംസാര മാതൃകയായികൊണ്ട് .

c.കുട്ടിയെ സ്പീച് ലാംഗ്വേജ് തെറാപ്പിക് റെഫർ ചെയ്തുകൊണ്ട്

d.മേൽപറഞ്ഞവ എല്ലാം ചെയ്തുകൊണ്ട്

8. ശബ്ദത്തിൽ വരുന്ന തകരാറുകൾ ഒരു പരിധി വരെ എങ്ങനെ തടയാൻ സാധിക്കും?

a. കൂടുതൽ മധുരം കഴിച്ചുകൊണ്ട്

b.മസാല അധികം ഉള്ള ഭക്ഷണങ്ങൾ കഴിച്ചുകൊണ്ട്

c.വിറ്റാമിൻ ഗുളികകൾ കഴിച്ചുകൊണ്ട്

d.ധാരാളം വെള്ളം കുടിച്ചുകൊണ്ട്

9.സെറിബ്രൽ പാൾസി ഉള്ള കുട്ടികൾക്ക് വേണ്ട സേവനങ്ങൾ ഏതെല്ലാം?

a.ഫിസിയോതെറാപ്പി മാത്രം

b.ഒക്യുപേഷണൽ തെറാപ്പിയും & ഫിസിയോതെറാപ്പിയും

c.ഫിസിയോതെറാപ്പിയും & സ്പീച് തെറാപ്പിയും

d.ഒക്യുപേഷണൽ തെറാപ്പിയും, ഫിസിയോ തെറാപ്പിയും & സ്പീച് തെറാപ്പിയും

10.പഠന വൈകല്യം ഉള്ള കുട്ടികളെ പഠിപ്പിക്കാനുള്ള ഏറ്റവും മികച്ച വഴി എന്താണ് ?

a.ക്ലാസ്സിൽ കുട്ടികളോട് സ്ട്രിക്ട് ആയി ഇരുന്നുകൊണ്ട്

b.കാണാപാഠം പഠിക്കാൻ പറഞ്ഞുകൊണ്ട്

c.ഒരു ട്യൂഷൻ അറേഞ്ച് ചെയ്തുകൊണ്ട്

d.കുട്ടിയുടെ തനതായ പഠനശൈലി കണ്ടെത്തി ആ രീതിയിൽ പഠിപ്പിച്ചുകൊണ്ട്

APPENDIX 3

Shows questions used to obtain Feedback from teachers regarding the developed Flipbook and its usefulness.

1.നിങ്ങൾ വായിച്ച ഫ്ളിപ് ബുക്ക് (Flip Book) ഉപകാരപ്രദം ആയിരുന്നോ?

- ആയിരുന്നു
- കുറെയൊക്കെ ആയിരുന്നു
- അല്ല

2.സംസാരവൈകല്യങ്ങൾ ഉള്ള കുട്ടികളെ കുറച്ചുകൂടി എളുപ്പത്തിൽ ഇനി തിരിച്ചറിയാൻ നിങ്ങൾക്ക് സാധിക്കുമെന്ന് തോന്നുന്നുണ്ടോ ?

- തോന്നുന്നുണ്ട്
- ഒരുപരിധി വരെ സാധിച്ചേക്കാം
- തോന്നുന്നില്ല

3.സംസാരവൈകല്യമുള്ള കുട്ടികളെ തിരിച്ചറിയുന്നതിന് നിങ്ങളുടെ സ്കൂളിലെ മറ്റ് അദ്ധ്യാപകരെ സഹായിക്കാൻ നിങ്ങൾക്ക് സാധിക്കുമോ ?

- സാധിക്കും
- ഒരു പരിധിവരെ സാധിച്ചേക്കാം
- സാധിക്കില്ല

4.കുട്ടികളിൽ കാണപ്പെടുന്ന സംസാരവൈകല്യങ്ങൾ തിരിച്ചറിയാൻ നിങ്ങൾക്ക് കൂടുതൽ പരിശീലനം ആവശ്യമുണ്ട് എന്ന തോന്നുന്നുണ്ടോ ?

- തോന്നുന്നുണ്ട്
- കുറച്ചുംകൂടി പരിശീലനം ആവശ്യമുണ്ട്
- തോന്നുന്നില്ല

5.ഈ മെറ്റീരിയൽ എങ്ങനെ കൂടുതൽ ഉപയോഗപ്രദമാക്കാം എന്നതിനെക്കുറിച്ച് നിങ്ങൾക്ക് എന്തെങ്കിലും നിർദ്ദേശങ്ങളുണ്ടോ?

APPENDIX 4

Shows the content of the developed flipbook on childhood communication disorders in Malayalam for school teachers

Development and Validation of an online based Flipbook on childhood communication disorders in Malayalam for School teachers

Candidate : Mr. Delvin Devassia
Roll No: 20 SLP015

Guide : Dr. N Sreedevi
Professor of Speech Sciences
AIISH , Mysore -6

ഹലോ പ്രിയപ്പെട്ട ടീച്ചർ, നിങ്ങൾക്ക് സുഖമാണെന്ന് കരുതുന്നു. ആദ്യമായി തന്നെ ഈ പ്രോഗ്രാമിൽ പങ്കെടുക്കുന്നതിന് നന്ദി പറയുന്നു.

മനുഷ്യരിൽ കണ്ടുവരുന്ന വിവിധ ആശയവിനിമയ തകരാറുകൾ വിലയിരുത്തുന്നതിനും, ചികിൽസിക്കുന്നതിനും പരിശീലനം ലഭിച്ച വിദഗ്ധരാണ് ഞങ്ങൾ. (സ്പീച്ച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റ് / Speech Language Pathologist).

ആശയവിനിമയം (Communication)

- വിവരങ്ങൾ കൈമാറുന്ന പ്രക്രിയയാണ് ആശയവിനിമയം. താഴെ പറയുന്നവയെല്ലാം ആശയവിനിമയത്തിനുള്ള വഴികളാണ്:
- സംസാരിക്കുക(ആശയവിനിമയ രീതികളിലെ ഏറ്റവും ശ്കതമായത് സംഭാഷണമാണ്).
- എഴുതുക
- ആംഗ്യഭാഷ (Sign language)
- ആംഗ്യങ്ങൾ (Gestures)

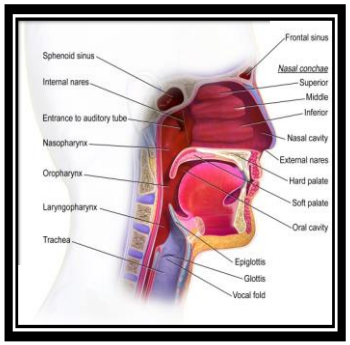
നമ്മൾ എങ്ങനെയാണ് സംസാരിക്കുന്നത് എന്ന് നോക്കാം.

സംസാരിക്കുന്നതിന് സഹായിക്കുന്ന 5 സംവിധാനങ്ങളുണ്ട്:

നാഡീവ്യൂഹങ്ങൾ (Nervous system)	തലച്ചോറിൽ നിന്ന് ശരീരഭാഗങ്ങളിലേക്ക് വിവരങ്ങൾ കൊണ്ടുപോകുകയും കൊണ്ടുവരുകയും ആണ് ഇവരുടെ ജോലി.
ശ്വസന വ്യവസ്ഥ (Respiratory system)	നമ്മെ ശ്വസനത്തിനായി സഹായിക്കുന്നു. ശ്വസിക്കുന്ന വായു ആണ് നമ്മൾ സംസാരിക്കാൻ ഉപയോഗിക്കുന്നത്.

ഫൊണേറ്ററി സംവിധാനം (Phonatory system)	ശബ്ദം ഉണ്ടാക്കുക ആണ് ഈ സംവിധാനം ചെയ്യുന്നത്.വോയിസ് ബോക്സിൽ ഉള്ള വോക്കൽ കോർഡ്സ് (*vocal cords in the voice box*) ആണ് ഈ ജോലി ചെയ്യുന്നത്.
അനുരണന സംവിധാനം (Resonatory system)	ഓരോരുത്തരുടെയും ശബ്ദത്തിനു അവരുടെതായ തനിമ ഉണ്ടാക്കാൻ സഹായിക്കുന്നു .
ആർട്ടിക്കുലേറ്ററി സംവിധാനം (Articulatory system)	നാവ്,ചുണ്ടുകൾ, താടിയെല്ല്, അണ്ണാക്ക് തുടങ്ങിയ അവയവങ്ങൾ ചേർന്നുപ്രവർത്തിച്ചാണ് നമ്മൾ പറയുന്ന എല്ലാ അക്ഷരങ്ങളും ഉണ്ടാകുന്നത്.

താഴെ കാണുന്ന ചിത്രത്തിൽ സംസാരിക്കാൻ സഹായിക്കുന്ന എല്ലാ അവയവങ്ങളും കാണിച്ചിരിക്കുന്നു :



നമ്മൾ സംസാരിക്കുന്നതിനു മുമ്പ് ശ്വാസം എടുക്കുന്നു

നമ്മൾ ഈ ശ്വാസം പുറത്തുവിടുമ്പോൾ അത് നമ്മുടെ സംസാരത്തിനുള്ള ഉറവിടമായി പ്രവർത്തിക്കുന്നു

ഈ വായു നമ്മുടെ വോയിസ് ബോക്സിൽ ഉള്ള വോക്കൽ കോർഡ്സിനെ ചലിപ്പിക്കുന്നു

അങ്ങനെ ശബ്ദം ഉണ്ടാകുന്നു

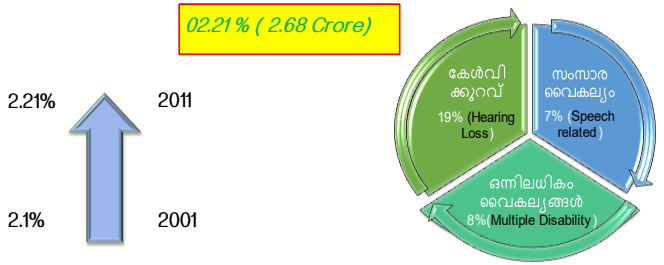
വോക്കൽ കോർഡ് മുതൽ ചുണ്ടുകൾ വരെയുള്ള ഓരോ അവയവങ്ങളുടെയും ഒത്തുചേർന്ന പ്രവർത്തനഫലമായി അക്ഷരങ്ങൾ ഉണ്ടാകുന്നു.

ഈ ഉപ-സംവിധാനങ്ങളിൽ ഏതെങ്കിലും ഒന്നിന് എന്തെങ്കിലും പ്രശ്നങ്ങൾ ഉണ്ടായാൽ,നമുക്ക് സംസാരിക്കാൻ ബുദ്ധിമുട്ടുണ്ടാകാം.

ആശയവിനിമയ വൈകല്യങ്ങൾ

- ഇന്ത്യയിലെ വികലാംഗ ജനസംഖ്യയുടെ ശതമാനം (2011)
  Percentage of disability in India *(As per 2011 census of India):*

02.21 % (2.68 Crore)



മേൽപറഞ്ഞ കണക്കുകളിൽ, നല്ലൊരു ശതമാനം കുട്ടി കളും ഉണ്ട്.സംസാരിക്കാൻ ബുദ്ധിമുട്ടുള്ള കുട്ടികൾക്ക് നന്നായി പഠിക്കാനോ, മറ്റുകുട്ടികളുമായി സൗഹൃദം പങ്കിടാനോ ,നല്ലൊരു ജോലി നേടാനോ സാധിക്കണമെന്നില്ല.

സംസാരവൈകല്യങ്ങളെപ്പറ്റി അറിവുള്ള ഒരു അധ്യാപകന് സംസാരിക്കാൻ ബുദ്ധിമുട്ടുകളുള്ള ഒരു കുട്ടിയെ എത്രയും വേഗം ഒരു സ്പെഷ്യലിസ്റ്റിലേക്ക് നയിക്കാൻ കഴിയും.

സാധാരണയായി കുട്ടികളിൽ കാണുന്ന ആശയവിനിമയ പ്രശ്നങ്ങൾ ഇവിടെ പറയുന്നു:

- ഉച്ചാരണ ശുദ്ധിയില്ലായ്മ(*Speech sound disorder*)
- പഠന വൈകല്യം (*Learning disability*)
- ബുദ്ധിമാന്ദ്യം(*intellectual disability*)
- വിക്ക് (*stuttering*)
- കേൾവിക്കുറവ് (*Hearing loss*)
- ശബ്ദത്തിനുണ്ടാകുന്ന തകരാറുകൾ (*voice disorders*)

- സെറിബ്രൽ പാൾസി (*cerebral palsy*)
- മുച്ചുണ്ട്, അണ്ണാക്കിലെ പിളർപ്പ് (*Cleft lip & palate*)
- ഓട്ടിസം (*Autism*)
- അറ്റെൻഷൻ ഡെഫിസിറ്റ് ഹൈപ്പർ ആക്ടിവിറ്റി ഡിസോർഡർ (*ADHD*)

ഇതുവരെ പറഞ്ഞ വൈകല്യങ്ങളെക്കുറിച്ച് കൂടുതൽ വിശദമായി അറിയാം.

1. ഉച്ചാരണ ശുദ്ധിയില്ലായ്മ(*Speech Sound Disorders*)

കൊച്ചുകുട്ടികൾ സംസാരിക്കാൻ പഠിക്കുമ്പോൾ,വാക്കുകൾ ശരിയായി ഉച്ചരിക്കാൻ ബുദ്ധിമുട്ടുകൾ നേരിടുന്നു. ഇത് വളർച്ചയുടെ ഒരു ഭാഗം ആണ്.

കുട്ടി വളരുന്നതനുസരിച്ച് തെറ്റുകളുടെ അളവ് കുറയുകയും,കൂടുതൽ വ്യക്തമായി സംസാരിക്കുകയും ചെയ്യുന്നു.

കുട്ടികൾ വളരുന്നതിനനുസരിച്ചു സംസാര ശബ്ദങ്ങൾ (*Speech sounds*) പഠിക്കുന്നു.

ഓരോ പ്രായത്തിലും പുതിയ ശബ്ദങ്ങൾ അവർ പറഞ്ഞു തുടങ്ങുന്നു .

5-6 വയസ്സ് ആകുമ്പോഴേക്കും, മിക്ക കുട്ടികളും എല്ലാ ശബ്ദങ്ങളും ശരിയായി പറയാൻ പഠിക്കുന്നു.

എന്നിരുന്നാലും, എല്ലാ കുട്ടികളും ഈ ഉച്ചാരണ കഴിവുകൾ കാര്യക്ഷമമായി പഠിക്കണം എന്നില്ല.

ഈ അവസ്ഥക്ക് സ്പീച് സൗണ്ട് ഡിസോർഡർ/ ഉച്ചാരണ ശുദ്ധിയില്ലായിമ എന്നുപറയുന്നു.

ഉച്ചാരണ ശുദ്ധിയില്ലായിമ ഉള്ള കുട്ടികളിൽ താഴെ പറയുന്ന തെറ്റുകൾ കാണാം:

ഒരു ശബ്ദത്തിന് പകരം മറ്റൊന്ന് പറയുന്നു .
ഉദാ: കരടി എന്നതിന് പകരം തരടി എന്ന് പറയുന്നു.

ആവശ്യമില്ലാതെ വാക്കുകളിൽ ശബ്ദങ്ങൾ ചേർക്കുന്നു.
ഉദാ: വീട് എന്നതിന് വീക്കാട് എന്ന് പറയുന്നു.

വാക്കുകളിലെ ചില ശബ്ദങ്ങൾ ഒഴിവാക്കുന്നു.

ഉദാ : കതിര എന്നതിന് തിര എന്ന് പറയുന്നു.

ചില ശബ്ദങ്ങൾ ഏകദേശം ശരിയായി പറഞ്ഞേക്കാം, എന്നാൽ വ്യക്തമായിരിക്കണമെന്നില്ല.

ഉച്ചാരണ ശുദ്ധിയില്ലായിമക്ക് കാരണമാകുന്നത് എന്താണ്?

പാരമ്പര്യത്തിൽ നിന്ന് കിട്ടിയത്

സംസാരത്തെ ബാധിക്കുന്ന ഘടനാപരമായ പ്രശ്നങ്ങൾ (*Structural defects*).ഉദാ:മുറിച്ചുണ്ട്/ മുച്ചുണ്ട്,നാവിനു കെട്ട്, തുടങ്ങിയവ.

കേൾവിക്കുറവ്

സംസാരിക്കാൻ സഹായിക്കുന്ന നാഡികളുടെ തകരാറുകൾ.

ബുദ്ധിമാന്ദ്യം,അല്ലെങ്കിൽ തലക്ക് ഏൽക്കുന്ന ക്ഷതങ്ങൾ.

എന്നിരുന്നാലും പല കുട്ടികളിലും ഈ അവസ്ഥയുടെ കൃത്യമായ കാരണം ചൂണ്ടിക്കാണിക്കാൻ കഴിയാറില്ല.

ആർക്കൊക്കെയാണ് സഹായിക്കാൻ കഴിയുക?

സ്പീച്ച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റ്(*Speech Language pathologists*)- ഉച്ചാരണ കഴിവുകൾ വിലയിരുത്തുകയും, സ്പീച്ച് തെറാപ്പി നൽകുകയും ചെയ്യുന്നു.

ഓഡിയോളജിസ്റ്റുകൾ (*Audiologists*)- കേൾവിശക്തി വിലയിരുത്തുകയും വേണ്ടിവന്നാൽ ശ്രവണ സഹായി നൽകുകയും ചെയ്യുന്നു. .

ഇ.എൻ.ടി ഡോക്ടർമാർ (*E.N.T doctors*) - സംസാരിക്കാൻ സഹായിക്കുന്ന അവയവങ്ങളുടെ ഘടനയും പ്രവർത്തനവും പരിശോധിക്കുകയും ചികിത്സ നൽകുകയും ചെയ്യുന്നു.

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും?

ക്ലാസ് മുറിയിൽ കുട്ടിക്ക് നല്ല സംസാര മാതൃകയാകുക. വ്യക്തമായി സംസാരിക്കുക.

ആവശ്യമെങ്കിൽ കുട്ടിയെ സ്പീച്ച് തെറപ്പിസ്റ്റിനെ (*SLP*) കാണിക്കാൻ മാതാപിതാക്കളോട് നിർദേശിക്കുക.

മറ്റ് സഹപാഠികൾ കുട്ടിയെ കളിയാക്കുന്നില്ലെന്ന് ഉറപ്പാക്കുക.

കുട്ടി നല്ല ഉച്ചാരണ ശുദ്ധിയോടെ സംസാരിക്കുമ്പോൾ, അവനെ/അവളെ പ്രോത്സാഹിപ്പിക്കുക.

2. പഠന വൈകല്യം (*Learning disability*)

പഠന വൈകല്യം എന്നത് പഠനപരമായ കഴിവുകളെ ബാധിക്കുന്ന ഒരവസ്ഥയാണ് (*Academic skills*) .അതായത്, വായിക്കുവാനും എഴുതുവാനും, ഗണിതപ്രശ്നങ്ങൾ പരിഹരിക്കുവാനും ഈ കുട്ടികൾ ബുദ്ധിമുട്ട് നേരിടുന്നു.

പഠന വൈകല്യം (LD) ഉള്ള കുട്ടികൾക്ക് ശരാശരിയേക്കാൾ ഉയർന്ന ബുദ്ധിശക്തിയുണ്ട് (IQ).

LD ഉള്ള ഒരു കുട്ടിക്ക് ഇനിപ്പറയുന്ന ലക്ഷണങ്ങൾ ഉണ്ടാകാം:

- സ്വന്തം ആശയങ്ങളെക്കുറിച്ച് സംസാരിക്കാനുള്ള ബുദ്ധിമുട്ട്.
- വാക്കുകൾ ഓർത്തു പറയാനുള്ള ബുദ്ധിമുട്ട്.
- വായിക്കുന്ന പാഠ്യ ഭാഗമോ കഥകളോ മനസിലാക്കാനുള്ള ബുദ്ധിമുട്ട്.
- പുതിയ വാക്കുകൾ പഠിക്കുവാനുള്ള ബുദ്ധിമുട്ട്.

- ചോദ്യങ്ങൾ മനസ്സിലാക്കുന്നതിലും നിർദ്ദേശങ്ങൾ പാലിക്കുന്നതിലും അവർ ബുദ്ധിമുട്ട് നേരിടുന്നു.
- ടീച്ചർ പറയുന്ന നിർദ്ദേശങ്ങൾ ഓർത്തുവെക്കാൻ ബുദ്ധിമുട്ടാണ്.
- എഴുതുമ്പോൾ ധാരാളം അക്ഷര തെറ്റുകൾ ഉണ്ടാക്കിയേ ക്കാം.
- അവർ കണക്കിൽ/ ഗണിതത്തിൽ മോശമായിരിക്കാം.

- അക്ഷരങ്ങളും അക്കങ്ങളും പഠിക്കാൻ ബുദ്ധിമുട്ടാണ്.
- അവർക്ക് ശബ്ദങ്ങളെ അക്ഷരങ്ങളുമായി ബന്ധപ്പെടുത്തി പഠിക്കാൻ കഴിയാറില്ല.
- അവർ എഴുതുമ്പോൾ അക്ഷരങ്ങളുടെ ക്രമം തെറ്റിച്ചേക്കാം.
- സ്കൂളിലെ പാഠ്യേതര പ്രവർത്തനങ്ങളിൽ അവർ മിടുക്കരായിരിക്കാം

- ബോർഡിൽ എഴുതിയിരിക്കുന്നത് പകർത്താനുള്ള ബുദ്ധി മുട്ട് .
- വളരെ കഴപ്പം പിടിച്ച കൈയക്ഷരം.
- മിറർ റൈറ്റിംഗ് (*Mirror writing*) ചിലരിൽ. കണ്ടേക്കാം.അതായിത്,അക്ഷരങ്ങൾ തിരിച്ചെഴുതുന്നത് . ഉദാ – b ക്ക് d എന്ന് എഴുതുന്നു.
- എത്ര പഠിച്ചിട്ടും ,അധിക ശ്രദ്ധകൊടുത്തിട്ടും പരീക്ഷകളിൽ പരാജയപ്പെടുന്നു.

പഠനവൈകല്യം എന്തുകൊണ്ട് ഉണ്ടാകുന്നു ?

- അച്ഛനോ അമ്മക്കോ LD ഉണ്ടെങ്കിൽ കുട്ടിക്കും ഉണ്ടാകാൻ ഉള്ള സാധ്യത കൂടുതൽ ആണ്.
- ഗർഭസ്ഥസമയത്ത് അമ്മയുടെ മദ്യം അല്ലെങ്കിൽ മയക്കുമരുന്ന് പോലുള്ളവയുടെ ഉപയോഗം പഠന വ്യകല്യത്തിനുള്ള ഉള്ള സാധ്യത വർദ്ധിപ്പിക്കും.
- ചെറുപ്പത്തിൽ തലച്ചോറിനേൽക്കുന്ന ക്ഷതം

ആർക്കൊക്കെയാണ് സഹായിക്കാൻ കഴിയുക?

പീഡിയാട്രീഷ്യൻ (*Pediatrician*): കുട്ടിയുടെ പൊതുവായ വളർച്ചയും വികാസവും പരിശോധിക്കുകയും ആവശ്യമെങ്കിൽ ഉചിതമായ റഫറലുകൾ കൊടുക്കുകയും ചെയ്യുന്നു.

ക്ലിനിക്കൽ സൈക്കോളജിസ്റ്റ് (*Psychologist*): ബുദ്ധിക്ഷമത വിലയിരുത്തുകയും കുട്ടിയുടെ മാനസിക സമ്മർദ്ദം (Mental pressure and anxiety) നിയന്ത്രിക്കാൻ സഹായിക്കുകയും ചെയ്യുന്നു.

സ്പെഷ്യൽ എഡ്യൂക്കേഷൻ ടീച്ചർ (*Special Education Teacher*) : എഴുതാനും വായിക്കാനുമുള്ള കഴിവുകൾ പഠിപ്പിക്കുന്നു. തുടർന്നും സ്കൂൾ കാലഘട്ടത്തിൽ പഠനപരമായ എല്ലാ സഹായങ്ങളും ചെയ്യുന്നു .

സ്പീച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റുകൾ (*Speech Language Pathologist*): കുട്ടിയുടെ ആശയവിനിമയ കഴിവുകളെ വിലയിരുത്തി വേണമെങ്കിൽ സ്പീച്ച് തെറപ്പി നൽകുന്നു .

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും?

ഏറ്റവും പുതിയവിദ്യാഭ്യാസ സാങ്കേതിക വിദ്യകൾ, ചികിത്സകൾ, പ്രോഗ്രാമുകൾ എന്നിവയെകുറിച്ച ബോധവാന്മാരായിരിക്കുക.

ഒന്നിലധികം ഇന്ദ്രിയങ്ങളെഉൾപ്പെടുത്തി പഠനം രസകരമാക്കുക.

(ചിത്രങ്ങളും പാട്ടുകളും പഠനസമയത് ഒരുമിച്ചുപയോഗിക്കുന്നത്).

പഠിപ്പിക്കുന്ന കാര്യത്തെ ദൃശ്യപരമായി കുട്ടിക്ക് കാണിച്ച് കൊടുക്കുക.

ഒരു വിഷയത്തെക്കുറിച്ചുള്ള വിവരങ്ങൾ ചെറിയ ചെറിയ കണികകളായി കുട്ടിയെ പഠിപ്പിക്കുക.

നിങ്ങളുടെ വിദ്യാർത്ഥികളുടെ പ്രയത്നങ്ങളെ പ്രശംസിക്കുക.

3. വിക്ക് (*Stuttering*)

സംസാരത്തിനിടയിൽ തടസ്സങ്ങൾ ഉണ്ടാകുന്നത് സാധാരണമാണ്. ഇവയെ ഡിസ്ഫ്ലുയൻസി (*disfluency*) എന്ന് വിളിക്കുന്നു .

എന്നാൽ, വിക്കുന്ന ആളുകളിൽ ഡിസ്ഫ്ലുയൻസി പതിവിലും കൂടുതൽ ആയിരിക്കും.

സമ്മർദത്തിലോ ആവേശത്തിലോ ഉള്ളപ്പോൾ കുട്ടി കൂടുതൽ വിക്കുന്നു.

ആരുടെകൂടെയാണോ സംസാരിക്കുന്നത്,അതനുസരിച്ചു കൂടുതലോ കുറച്ചോ വിക്ക് കാണപ്പെടാം.

ഉദാ : അമ്മയോട് സംസാരിക്കുമ്പോൾ തീരെ വിക്കുന്നില്ല,എന്നാൽ ടീച്ചറുടെ ചോദ്യത്തിന് കുട്ടി വല്ലാതെ വിക്കുന്നു.

വിക്കുന്ന കുട്ടിയിൽ ടെൻഷനും സംസാരിക്കാനുള്ള താല്പര്യക്കുറവും കണ്ടേക്കാം.

തീവ്രത അനുദിനം മാറാം. ചിലദിവസങ്ങളിലും സന്ദർഭങ്ങളിലും കുട്ടി തീരെ വിക്കുന്നില്ല. എന്നാൽ മറ്റു ചിലപ്പോൾ വളരെ അധികം വിക്കുന്നു.

1.5 വയസ്സ് മുതൽ 3 വയസ്സ് വരെ പ്രായമുള്ള ചെറിയ കുട്ടികൾ ദിവസവും ധാരാളം പുതിയ വാക്കുകൾ പഠിക്കുന്നു.

എന്നാൽ ഈ കുട്ടികൾ വളരെ സുഗമമായി സംസാരിക്കില്ലായിരിക്കാം.

മിക്ക കുട്ടികളിലും ഈ ബുദ്ധിമുട്ട് കാണപ്പെടുന്നു . ഇത് തീർത്തും സ്വാഭാവികമാണ്.

നാലു വയസ്സിനുമുകളിലും,ഇത്തരം തടസ്സങ്ങൾ കാണുന്നുണ്ടെങ്കിൽ അതിനു ചികിത്സ ആവശ്യമാണ്.

വിക്കുന്ന കുട്ടികളുടെ സംസാര ലക്ഷണങ്ങൾ എന്തൊക്കെയാണ്?

വാക്കുകളുടെ ആദ്യത്തെ ശബ്ദം ആവർത്തിക്കുന്നത്.	അക്ഷരത്തിൻറെയോ വാക്കുകളുടെയോ വലിച്ചുനീട്ടൽ.	സംസാരിക്കുമ്പോൾ നീണ്ട ഇടവേളകൾ കാണപ്പെടുന്നു .
"എ എ എനിക്ക് ഒരു കാർ വേണം"	ആ.....ന	എനിക്ക് ഒരു -------(silence)... കേക്ക് വേണം.

സംസാരിക്കാനുള്ള മടി.

പറയാൻ ബുദ്ധിമുട്ടുള്ള വാക്കുകളെ ഒഴിവാക്കുന്നത്, അല്ലെങ്കിൽ വേറെ വാക്കുകൾ ഉപയോഗിക്കുന്നത്.

ഞാൻ അ അ .... പപ്പയെ കണ്ടു. (അച്ഛനുപകരം പപ്പാ എന്ന വാക്ക് പറയുന്നു)

സംസാരിക്കുമ്പോൾ അനാവശ്യവും അമിതവുമായ മുഖഭാവങ്ങളും ശരീര ചലനങ്ങളും കാണപ്പെട്ടേക്കാം.

അമിത വേഗത്തിലോ സാവധാനത്തിലോ സംസാരിക്കുന്നത്.

സംസാരിക്കുമ്പോൾ വിക്കാനുള്ള കാരണങ്ങൾ എന്തൊക്കെയാണ്?

ജനതിക കാരണങ്ങളാൽ ചില കുടുംബങ്ങളിൽ വിക്ക് കാണപ്പെടുന്നു.

കുട്ടി പരിചിതനായ ഒരാളുടെ വിക്കിനെ അനുകരിക്കുന്നത് .

അനിയനോ അനുജത്തിയോ ജനിച്ചതിനുശേഷം, മാതാപിതാക്കളിൽ നിന്ന് വാത്സല്യവും പരിചരണവും ലഭിക്കുന്നതിന് കുട്ടികൾ സംസാരിക്കുമ്പോൾ വിക്ക് പ്രകടമാക്കിയേക്കാം.

സംസാരിക്കുമ്പോൾ വിക്കുന്ന കുട്ടിയെ ആർക്കാണ് സഹായിക്കാൻ കഴിയുക?

സ്പീച്ച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റ് (*Speech Language Pathologist*) → കുട്ടിയുടെ സംസാരത്തെ വിലയിരുത്തുകയും സുഗമമായി സംസാരിക്കാൻ പരിശീലിപ്പിക്കുകയും ചെയ്യുന്നു.

മനശാസ്ത്രജ്ഞർ (*Psychologist*) → വിക്കുന്നത് കാരണമുണ്ടാകുന്ന മാനസിക സമ്മർദത്തെ നിയന്ത്രിക്കാൻ സഹായിക്കുന്നു.

സംസാരിക്കുമ്പോൾ വിക്കുന്ന കുട്ടിയെ നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാം?

വിദ്യാർത്ഥിക്ക് വേണ്ടി വാക്കുകൾ പൂർത്തിയാക്കരുത്, അല്ലെങ്കിൽ അവനുവേണ്ടി സംസാരിക്കരുത്.

→ അവൻ സമയം എടുത്ത് പൂർത്തിയാക്കട്ടെ.

ഞാൻ എന്റെ ഗൃഹപാഠം ചെയ്തു . പക്ഷെ എനിക്കൊരു സം സം ..... എനിക്കൊരു സംശയമുണ്ട്.

കാര്യങ്ങളുടെ ഉള്ളടക്കത്തിൽ ശ്രദ്ധിക്കുക .അവൻ എങ്ങനെ അത് പറയുന്നു എന്നതിൽ ആകുലരാകേണ്ട.

→ കുട്ടിയുടെ പരിശ്രമത്തെ അഭിനന്ദിക്കുകയും ചെയ്യുക

അതെ,എബി പറയുന്നത് ശരിയാണ്.

കുട്ടിയെ സ്പീച്ച് തെറാപ്പിസ്റ്റിനെ കാണിക്കാൻ മാതാപിതാക്കളോട് നിർദ്ദേശിക്കുക.

സാവധാനം സംസാരിക്കുന്നതിന് കുട്ടിയെ പ്രോത്സാഹിപ്പിക്കുക.

കുട്ടിയെ സഹപാഠികൾ കളിയാക്കുന്നില്ലെന്ന് ഉറപ്പുവരുത്തുക.

4. ബുദ്ധിമാന്ദ്യത (*Intellectual Disability*)

ചിന്തിക്കാനും,കാര്യങ്ങൾ മനസ്സിലാക്കാനുമുള്ള കഴിവില്ലായ്മ, സന്ദർഭത്തിന് അനുസരിച്ച് സംസാരിക്കാനുള്ള ബുദ്ധിമുട്ട് എന്നിവയെല്ലാം കൂടിയ ഒരവസ്ഥയാണ് ബുദ്ധിമാന്ദ്യത അഥവാ ബുദ്ധിശക്തിക്കുറവ്.

ബുദ്ധിമാന്ദ്യതയുള്ള ഒരു കുട്ടിയുടെ ബുദ്ധിക്ഷമത ശരാശരിയിൽ താഴെയായിരിക്കും.

എങ്കിലും,തീവ്രതയിൽ ഏറ്റക്കുറച്ചിലുകൾ ഉണ്ടാകാം.

എന്നാൽ ശരിയായ തെറാപ്പിയും പരിശീലനവും ഉപയോഗിച്ച് ഈ കുട്ടികളുടെ അവസ്ഥ മെച്ചപ്പെടുത്താൻ കഴിയും.

ബുദ്ധിമാന്ദ്യതക്ക് കാരണമാകുന്ന ഗർഭാവസ്ഥയിലെ കാരണങ്ങൾ എന്തെല്ലാമാണ്?

- റുബെല്ല,സൈറ്റോമെഗാലൊവൈറസ്, ചിക്കൻപോക്സ് തുടങ്ങിയ വൈറൽ അണുബാധകൾ.
- അമ്മക്കുണ്ടാകുന്ന മാനസിക വൈകാരിക സമ്മർദ്ദങ്ങൾ.
- അമ്മക്ക് അപകടമോ വീഴ്ചയോ സംഭവിക്കുന്നത്.
- അമ്മയിൽ അയഡിൻ,കാത്സ്യം തുടങ്ങിയ ധാതുലവണങ്ങളുടെയും വിറ്റാമിൻറെയും (*vitamins and minerals deficiency*) കുറവുമൂലം ഉണ്ടാകുന്ന പോഷകാഹാരക്കുറവ്.

ബുദ്ധിമാന്ദ്യതക്ക് കാരണമാകുന്ന പ്രസവ സമയത്തെ കാരണങ്ങൾ എന്തൊക്കെ ആണ്?

മാസം തികയാതെയുള്ള പ്രസവം(*Premature delivery*).

പ്രസവസമയത്ത് തലച്ചോറിനേറ്റ പരിക്ക്.

ബുദ്ധിമാന്ദ്യതക്ക് കാരണമാകുന്ന പ്രസവശേഷമുള്ള വളർച്ചയുമായി ബന്ധപ്പെട്ട ചില കാരണങ്ങൾ :

തലച്ചോർ വികാസത്തെ ബാധിക്കുന്ന അണുബാധകൾ (*meningitis/ മസ്തിഷ്ക ജ്വരം*).

അപകടങ്ങളോ വീഴ്ച്ചകളോ കാരണം തലയ്ക്കു കഴുത്തിനും ഉണ്ടാകുന്ന പരിക്ക്.

വിഷവസ്തുക്കളുമായുള്ള സമ്പർക്കം (*ഈയം,മെർക്കറി*).

ബുദ്ധിപരമായ വൈകല്യമുള്ള കുട്ടികളിൽ മൂന്നിൽ രണ്ടിലും കാരണം അജ്ഞാതമാണ്.

ബുദ്ധിപരമായ വൈകല്യമുള്ള കുട്ടികളുടെ പൊതു ലക്ഷണങ്ങൾ എന്തൊക്കെയാണ്?

ഗർഭാവസ്ഥയിലെ വളർച്ചക്കുറവ് ,തലയുടെ വലുപ്പത്തിലെ വ്യത്യാസങ്ങൾ.

സ്വയം ഭക്ഷണം കഴിക്കുക, സ്വന്തമായി ബാത്റൂമിൽ പോവുക,വസ്ത്രം ധരിക്കുക തുടങ്ങിയ കാര്യങ്ങൾ ചെയ്യാൻ ബുദ്ധിമുട്ടുകൾ ഉണ്ടാകാം.

ഭക്ഷണം കഴിക്കാനും വെള്ളം കുടിക്കാനും പ്രശ്നങ്ങൾ ഉണ്ടാകാം. കഴിക്കാൻ കൂടുതൽ സമയം എടുത്തേക്കാം.

പ്രായത്തിനനുസൃതമായ കളിപ്പാട്ടങ്ങളോടുള്ള താൽപര്യക്കുറവ് കണ്ടേക്കാം.

ഓർമ്മ ശക്തി, യുക്തിയോടെ കാര്യങ്ങൾ ചെയ്യുന്നത് എന്നിവയിൽ ബുദ്ധിമുട്ടുകൾ .

മറ്റ് കുട്ടികളുമായി ഒത്തുചേർന്ന് കളിക്കാനുള്ള ബുദ്ധിമുട്ട് ഉണ്ടാകാം . കളികളുടെ നിയമങ്ങൾ അവർക്ക് മനസ്സിലാകുന്നില്ല.

ക്ലാസിൽ നൽകുന്ന നിർദേശങ്ങൾ പാലിക്കാൻ ബുദ്ധിമുട്ടുകൾ ഉണ്ടാകാം.

ബുദ്ധിപരമായ വൈകല്യമുള്ള ഒരു കുട്ടിയുടെ സംസാരവും ഭാഷാ ലക്ഷണങ്ങളും താഴെ പറയുന്നു:

- സംസാര ഭാഷ വളർച്ചക്ക് താമസം ഉണ്ടാകുന്നു.
- പുതിയ ആശയങ്ങളും വാക്കുകളും മനസ്സിലാക്കാനും പഠിക്കാനും ബുദ്ധിമുട്ട് നേരിടുന്നു.
- കാണാൻ കഴിയാത്ത വസ്തുക്കളുടെ പേരുകൾ പഠിക്കാൻ ബുദ്ധിമുട്ടുന്നു.
- ആംഗ്യങ്ങളും മുഖഭാവങ്ങളും മനസ്സിലാക്കാൻ ബുദ്ധിമുട്ടുന്നു.

- വ്യക്തമല്ലാത്ത സംസാരം ഉണ്ടാകാം. അതിനാൽ,പറയുന്നത് നമുക്ക് മനസ്സിലാക്കാൻ ബുദ്ധിമുട്ടുണ്ടാകാം.
- സംസാരിക്കാൻ ചെറുതും ലളിതവുമായ വാക്കുകൾ ഉപയോഗിച്ചേക്കാം.
- ചില കുട്ടികളിൽ ശബ്ദനിലവാരം മോശമായിരിക്കും

ബുദ്ധിപരമായ വൈകല്യമുള്ള കുട്ടിയെ ആർക്കൊക്കെയാണ് സഹായിക്കാൻ കഴിയുക?

ശിശുരോഗവിദഗ്ധൻ (Pediatrician) - കുട്ടിയുടെ പൊതുവായ വളർച്ചയും വികാസവും പരിശോധിക്കുകയും ആവശ്യമെങ്കിൽ ഉചിതമായ റഫറലുകൾ കൊടുക്കുകയും ചെയ്യുന്നു.

മനശ്ശാസ്ത്രജ്ഞ വിദഗ്ധൻ (Psychologist) -ബുദ്ധിക്ഷമത വിലയിരുത്തുകയും കുട്ടിയുടെ സ്വഭാവം മെച്ചപ്പെടുത്തുകയും ചെയ്യുന്നു .

സ്പീച്ച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റ് (Speech Language Pathologist) - കുട്ടിയുടെ ആശയവിനിമയ കഴിവുകളെ വിലയിരുത്തിസ്പീച്ച് തെറപ്പി നൽകുന്നു.ഭക്ഷണം കഴിക്കാനുള്ള ബുദ്ധിമുട്ടുകളെയും ചികിൽസിക്കുന്നു.

ഒക്യുപേഷണൽ തെറാപ്പിസ്റ്റ് (Occupational Therapist) - ദൈനംദിന പ്രവർത്തികൾക്കാവശ്യമാ സൂക്ഷ്മചലനങ്ങൾ (Fine motor skills) മെച്ചപ്പെടുത്താനുള്ള വ്യായാമങ്ങൾ നിർദ്ദേശിക്കുന്നു.

സ്പെഷ്യൽ എഡ്യുക്കേഷൻ ടീച്ചർ (Special education Teacher) - വിദ്യാഭ്യാസപരമായി വേണ്ട കഴിവുകൾ വളർത്താനുള്ള പരിശീലനം നൽകുന്നു .

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും?

ബോർഡിൽ എഴുതിയ കാര്യങ്ങൾ വാക്കാലും പറഞ്ഞു കൊടുക്കുക .

ഫ്ലോ ചാർട്ടുകൾ, കൺസെപ്റ്റ് മാപ്പുകൾ എന്നിവ ഉപയോഗിക്കുക.

പഠിപ്പിക്കുമ്പോൾ വീഡിയോകളും ചിത്രങ്ങളും ഉപയോഗിക്കുക.

പ്രധാനപ്പെട്ട വിവരങ്ങൾ വേർതിരിക്കാനും ഹൈലൈറ്റ് ചെയ്യാനും മറക്കരുത്.

ചെറുതും ലളിതവുമായ നിർദ്ദേശങ്ങൾ നൽകുക

അധിക പിന്തുണയ്ക്കായി കുട്ടിയെ പഠനപരമായി മികച്ച വിദ്യാർത്ഥികളുടെ അടുത്ത് ഇരുത്തുക (*peer buddy system*).

5. കേൾവിക്കുറവ് *(Hearing Loss)*

ഒരു ചെവിയിലോ അല്ലെങ്കിൽ ഇരു ചെവികളിലുമൊ അണുബാധയോ നാഡികളുടെ തകരാറുകളുമോ കാരണം കേൾവിക്കുറവ് ഉണ്ടാകുന്നു.
ചിലകുട്ടികളിൽ ജന്മനാതന്നെ കേൾവിക്കുറവ് ഉണ്ടാകാം.

ചില കുട്ടികൾക്ക് ചെറിയ അളവിൽ കേൾവിക്കുറവ് ഉണ്ടാകാം, എന്നാൽ മറ്റ് ചിലരിൽ ഗുരുതരമായ കേൾവിക്കുറവ് കാണപ്പെടാം. കേൾവിക്കുറവ് കൂടുന്നതനുസരിച്ച് സംസാരിക്കാനുള്ള ബുദ്ധിമുട്ടുകളും കൂടുന്നു .

ഇതെല്ലാം മനസ്സിലാക്കി, പല സർക്കാരുകളും നവജാതശിശുക്കൾക്ക് ശ്രവണ പരിശോധന (*New Born hearing screening*) നിർബന്ധമാക്കിയിട്ടുണ്ട്.കേൾവിക്കുറവ് നേരത്തേ തിരിച്ചറിയുന്നതിനും വേണ്ട ചികിത്സ നൽകുന്നതിനും ഇത് സഹായിക്കും .

- കേൾവിക്കുറവുള്ള കുട്ടിയെ ശ്രവണസഹായികൾ ഉപയോഗിച്ച് നേരത്തെ തന്നെ പരിശീലിപ്പിച്ചാൽ,സാധാരണ വളരുന്ന കുട്ടികളെപ്പോലെ ഇവർക്കും സംസാരിക്കുവാൻ കഴിഞ്ഞേക്കാം.
- അതേസമയം, ശ്രവണസഹായികൾ(*Hearing Aids*) കാര്യമായി പ്രയോജനപ്പെടാത്ത കുട്ടികൾക്ക് കോക്ലിയാർ ഇമ്പ്ലാൻറ്റ്(*Cochlear implants*) സഹായകരമായേക്കാം.
- പല സർക്കാരുകളും ഈ ശസ്ത്രക്രിയയ്ക്കായി പല പദ്ധതികളും രൂപീകരിച്ചിട്ടുണ്ട്.അതിലൊന്നാണ് *ശ്രുതി തരംഗ് സ്കീം.*

- ☐ കുറഞ്ഞതോതിൽ കേൾവിക്കുറവുള്ള കുട്ടികൾ മറ്റു സഹായങ്ങളില്ലാതെതന്നെ സംസാരിക്കാൻ പഠിച്ചേക്കാം.
- ☐ കേൾവിക്കുറവ് തിരിച്ചറിയാൻ വൈകിയാൽകുട്ടികൾ ആംഗ്യങ്ങൾ പഠിക്കുകയും, ഉപയോഗിക്കുകയും ചെയ്തേക്കാം.
- ☐ കുട്ടികൾ നേരത്തെ തന്നെ ആംഗ്യം കാണിക്കാൻ പഠിച്ചാൽ, പിന്നീട് കോക്ലിയാർ ഇമ്പ്ലാൻറ്റ് / ശ്രവണസഹായി ഉപയോഗിച്ച് അവരെ കേൾക്കാനും സംസാരിക്കാനും പഠിപ്പിക്കാൻ ബുദ്ധിമുട്ടായിരിക്കും.

കേൾവിക്കുറവുള്ള കുട്ടികളുടെ സംസാരഭാഷാശേഷി എങ്ങനെയായിരിക്കാം ?

- സംസാരിച്ചു തുടങ്ങാനുള്ള കാലതാമസം.
- പേരുവിളിച്ചാൽ പ്രതികരിക്കാതിരിക്കാം.
- ഉറക്കെയുള്ള ശബ്ദങ്ങളോട് മാത്രം പ്രതികരിക്കുന്നു.
- പുതിയ വാക്കുകൾ പതുക്കെ പഠിക്കുന്നു.

- ചെവിവേദനയോ ചെവിയൊലിപ്പോ കാണപ്പെടാം.
- അവരോടു പറഞ്ഞകാര്യങ്ങൾ, ഒന്നും കൂടെ പറയാൻ ആവശ്യപ്പെട്ടെന്ന് വരാം
- പലപ്പോഴും വലിയ വാക്യങ്ങൾ മനസ്സിലാക്കാനും പറയാനും ബുദ്ധിമുട്ട് ഉണ്ടാവാം
- അവരുടെ ശബ്ദം പരുക്കനായിരിക്കും.

കേൾവിക്കുറവുണ്ടാകാനുള്ള കാരണങ്ങൾ എന്തൊക്കെയാണ്?

കേൾവിക്കുറവുള്ള കുടുംബപാരമ്പര്യം.

അമ്മ ഗർഭണിയായിരിക്കുമ്പോൾ ഉണ്ടാകുന്ന അണുബാധകൾ (Viral fever), പോഷകാഹാരക്കുറവ്, വീഴ്ച്ചകൾ തുടങ്ങിയവ.

കുട്ടി വീഴുമ്പോൾ തലക്കോ ചെവിക്കോ പരിക്ക് പറ്റുന്നത്.

കേൾക്കാൻ നമ്മളെ സഹായിക്കുന്ന നാഡികൾക്ക് പരിക്ക് പറ്റുന്നത്.

ചെവിക്കുള്ളിൽ പെൻസിൽമുന,റബ്ബർ ,ഹെയർപിൻ തുടങ്ങിയവ പോയാൽ അവ അണുബാധകൾക്ക് കാരണമായേക്കാം.

ചെവിക്കുള്ളിൽ ചൂടുള്ള എണ്ണ ഒഴിക്കുന്നത്.

കേൾവിക്കുറവുള്ള കുട്ടിയെ ആർക്കാണ് സഹായിക്കാൻ കഴിയുക?

ഇ.എൻ.ടി ഡോക്ടർ (*ENT doctor*) - ചെവിയുടെ അണുബാധകളും മറ്റുതകരാറുകളും കണ്ടുപിടിക്കുകയും ചികിത്സയ്ക്കുകയും ചെയ്യുന്നു .

ഓഡിയോളജിസ്റ്റുകൾ (*Audiologist*) - കേൾവി ശക്തി വിലയിരുത്തുകയും വേണ്ടിവന്നാൽ ശ്രവണ സഹായി (*Hearing Aids*) നൽകുകയും ചെയ്യുന്നു.

സ്പീച്ച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റ് (*Speech language pathologists*) - കുട്ടിയുടെ സംസാരശേഷി പരിശോധിക്കുകയും, സ്പീച്ച് തെറപ്പി നൽകുകയും ചെയ്യുന്നു

സ്പെഷ്യൽ എഡ്യുക്കേഷൻ ടീച്ചർ (*Special education teacher*) - വിദ്യാഭ്യാസപരമായ കഴിവുകളെ വളർത്തുവാൻ സഹായിക്കുന്നു .ഉദാ : പേന പിടിക്കുക,കോപ്പി എഴുതുക

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും??

കുട്ടികൾ ക്ലാസ്സിൽ ചെവിയിൽ പെൻസിൽ,റബ്ബർ തുടങ്ങിയവ ഇടുന്നില്ല എന്നുറപ്പാകുക.

കുട്ടിയോട് സംസാരിക്കുന്നതിനു മുമ്പ് അവൻ/അവൾ നിങ്ങളെ ശ്രദ്ധിക്കുന്നുണ്ട് എന്ന് ഉറപ്പുവരുത്തുക.

ചെവി വേദനയോ,ചെവിയിൽ നിന്ന് വെള്ളമോ വരുന്നുണ്ട് എന്ന് കുട്ടി പരാതിപ്പെട്ടാൽ, അതിനു ശ്രദ്ധ കൊടുക്കുകയും മാതാപിതാക്കളെ അറിയിക്കുകയും ചെയ്യുക.

ക്ലാസ്സ്മുറിയിൽ അനാവശ്യമായ ഒച്ചപ്പാടും ബഹളവും ഇല്ല എന്ന് ഉറപ്പുവരുത്തുക . കാരണം, ഹിയറിങ് എയ്ഡ് ഉപയോഗിക്കുന്ന കുട്ടിക്ക് പഠിപ്പിക്കുന്നത് കേൾക്കാൻ അത് കേൾക്കാൻ ബുദ്ധിമുട്ട് ഉണ്ടാക്കാം.

കാര്യങ്ങൾ എളുപ്പത്തിൽ മനസ്സിലാവാൻ സംസാരത്തോടൊപ്പം ആവശ്യത്തിന് മുഖഭാവങ്ങളും, ആംഗ്യങ്ങളും ഉപയോഗിക്കുക.

നിങ്ങളുടെ മുഖഭാവങ്ങളും ചുണ്ടുകളുടെ ചലനങ്ങളും കുട്ടിക്ക് കാണാൻ കഴിയുന്ന തരത്തിൽ, ക്ലാസ്റൂമിൽ മതിയായ വെളിച്ചമുണ്ടെന്ന് ഉറപ്പുവരുത്തുക.

കാര്യങ്ങൾ എളുപ്പത്തിൽ മനസ്സിലാവാൻ സംസാരത്തോടൊപ്പം ആവശ്യത്തിന് മുഖഭാവങ്ങളും, ആംഗ്യങ്ങളും ഉപയോഗിക്കുക.

നിങ്ങളുടെ മുഖഭാവങ്ങളും ചുണ്ടുകളുടെ ചലനങ്ങളും കുട്ടിക്ക് കാണാൻ കഴിയുന്ന തരത്തിൽ, ക്ലാസ്റൂമിൽ മതിയായ വെളിച്ചമുണ്ടെന്ന് ഉറപ്പുവരുത്തുക.

6. വോയ്സ് ഡിസോർഡേഴ്സ്

സംസാരിക്കുക, പാടുക, ചിരിക്കുക, കരയുക, അലറുക തുടങ്ങിയ നിരവധി ആവശ്യങ്ങൾക്കായി വോയിസ് ബോക്സിലുള്ള വോക്കൽ കോർഡ്സ് ചലിക്കുമ്പോഴാണ് ശബ്ദം ഉണ്ടാകുന്നത് (*vocal cords inside the voice box vibrates to make sounds*).

ഒരു വ്യക്തിയുടെ ശബ്ദം അയാളുടെ പ്രായം, ലിംഗഭേദം, വൈകാരികാവസ്ഥ (happy/sad/angry) എന്നിവ അറിയാൻ നമ്മെ സഹായിക്കും.

എന്താണ് വോയ്സ് ഡിസോർഡർ?

സാധാരണനിലയിൽനിന്നും ശബ്ദത്തിനു വ്യതിയാനങ്ങൾ ഉണ്ടാകുമ്പോൾ അതിനെ വോയിസ് ഡിസോർഡർ എന്ന് വിളിക്കുന്നു.

ഇത് ഏതു പ്രായക്കാരിലും കാണപ്പെടാം.

ശബ്ദത്തിന് ബുദ്ധിമുട്ടുകൾ ഉള്ള കുട്ടികളുടെ ലക്ഷണങ്ങൾ എന്തെല്ലാം?

സംസാരിക്കുമ്പോഴോ, പാടുമ്പോഴോ ശ്വാസം കിട്ടാതെ വരുക.

രണ്ടോഴ്യോ അതിൽ കൂടുതലോ നീണ്ടുനിൽക്കുന്ന പരുക്കൻ സ്വരം .

കുട്ടിക്ക് ഒച്ച ഉയർത്താനുള്ള ബുദ്ധിമുട്ട് .

കുട്ടി തൊണ്ടവേദന അല്ലെങ്കിൽ തൊണ്ട വരണ്ടതായി പരാതിപ്പെടാം.

മുറിഞ്ഞതോ വിറയാർന്നതോ ആയ ശബ്ദം.

കുട്ടികളിലെ ശബ്ദ തകരാറുകളുടെ കാരണങ്ങൾ എന്തെല്ലാം?

ഉചിതമല്ലാത്തതോ, തെറ്റായതോ ആയ രീതിയിൽ പാടുന്നത് അഥവാ സംസാരിക്കുന്നത് ശബ്ദത്തിന് ഹാനി ഉണ്ടാക്കിയേക്കാം.

ശ്വാസനാളത്തിന് (*Trachea*) ശരിയായ വളർച്ച എത്താത്തത്.

ശ്വാസനാളത്തിലെ ക്യാൻസർ (Laryngeal Cancer).

വോക്കൽ കോർഡ് പാൾസി (പക്ഷാഘാതം) – നാഡീപരമായ തകരാറുകൾ കാരണമുണ്ടാകുന്ന ശബ്ദ പ്രശ്നങ്ങൾ .

ഹാനികരമായ രാസവസ്തുക്കൾ അടങ്ങിയ പുക ശ്വസിക്കുന്നത്.

ശ്വാസനാളത്തിന് (*Tracheal abnormalities*) ജന്മനാ ഉണ്ടാകുന്ന വൈകല്യങ്ങൾ.

വോയിസ് ഡിസോർഡറുള്ള കുട്ടിയെ ആർക്കാണ് സഹായിക്കാൻ കഴിയുക?

ഇ.എൻ.ടി ഡോക്ടർ (*E.N.T doctor*)	ശബ്ദ പ്രശ്നങ്ങളിലേക്ക് നയിക്കുന്ന കാരണങ്ങളെ മരുന്നും ഓപ്പറേഷനും വഴി ചികിത്സിക്കുന്നു .
സ്പീച്ച് പത്തോളജിസ്റ്റ് (*Speech Language Pathologist*)	പ്രായത്തിനും ലിംഗഭേദത്തിനും സന്ദർഭത്തിനും അനുയോജ്യമായ രീതിയിൽ ശബ്ദം ഉപയോഗിക്കാൻ പഠിപ്പിക്കുന്നു.
മനശാസ്ത്രജ്ഞൻ (*Psychologist*)	ശബ്ദപ്രശ്നങ്ങൾ മൂലമുള്ള ഉത്കണ്ഠയെ നേരിടാൻ കുട്ടിയെ സഹായിക്കുന്നു.

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും??

നിങ്ങൾ വിദ്യാർത്ഥിക്ക് ഒരു നല്ല മാതൃക ആകുക. ഉദാ : ക്ലാസ്സിൽ വളരെ അധികം ശബ്ദത്തിൽ സംസാരിക്കാതിരിക്കുക, ഇടക്ക് ആവശ്യം പോലെ വെള്ളം കുടിക്കുക.

സ്കൂൾ സമയത്ത് ചെറിയ വോയ്സ് വിശ്രമം (*voice rest*) നൽകുക.

സംസാരിക്കുന്ന ആളുടെ അടുത്തുനിന്ന് സംസാരിക്കാൻ കുട്ടിയെ ഓർമ്മിപ്പിക്കുക. ഇത് അനാവശ്യമായി അലറുന്നത് ഒഴിവാക്കാൻ സഹായിക്കും.

ഒരു ക്ലാസ്സും ഡിസ്കഷനുശേഷം നിങ്ങളുടെ വിദ്യാർത്ഥികൾക്ക് വാട്ടർ ബ്രേക്ക് (*Water break*) നൽകുന്നത് ഉറപ്പാക്കുക.

അമിതമായ നിലവിളിയും, പരുഷമായ രീതിയിൽ സംസാരിക്കുന്നത്, എന്നിവ നിരുത്സാഹപ്പെടുത്തുക.

ഒരു വിദ്യാർത്ഥി മറ്റൊരാളുടെ ശബ്ദമോ ആലാപന ശൈലിയോ അനുകരിക്കാൻ ശ്രമിക്കുമ്പോൾ അതിനെ പ്രോത്സാഹിപ്പിക്കരുത്.

കുട്ടികളെപ്പോലെ, അദ്ധ്യാപകരിലും ശബ്ദസംബന്ധമായ തകരാറുകൾ ഉണ്ടായേക്കാം .

അതിനാൽ നിങ്ങൾക്ക് ആരോഗ്യകരമായ ജീവിതശൈലി ഉണ്ടെന്ന് ഉറപ്പാക്കുക.

ശബ്ദ ദുരുപയോഗം ഒഴിവാക്കുകയും ധാരാളം വെള്ളം കുടിക്കുകയും, സ്വരത്തിന് വേണ്ടത്ര വിശ്രമം കൊടുക്കുകയും ചെയ്യുക .

7. സെറിബ്രൽ പാൾസി (*Cerebral Palsy*)

മസ്തിഷ്ക ക്ഷതം മൂലമുണ്ടാകുന്ന വികസന വൈകല്യങ്ങളുടെ ഒരു കൂട്ടമാണ് സെറിബ്രൽ പാൾസി.

ജനിക്കുന്നതിന് മുമ്പോ, ജനിക്കുന്ന സമയത്തോ, അല്ലെങ്കിൽ ജനിച്ച ശേഷം കുറച്ചു നാളുകൾക്കുള്ളിലോ തലക്ക് ക്ഷതം സംഭവിച്ചാൽ അത് സെറിബ്രൽ പാൽസിക്ക് കാരണമാകാം

സെറിബ്രൽ പാൾസിയുടെ ലക്ഷണങ്ങൾ സ്ഥിരമായി തുടരുന്നു.കാലക്രമേണ,ചികിത്സകൊണ്ട് ലക്ഷണങ്ങൾ ഒരു പരിധി വരെ മെച്ചപ്പെടുത്താം.

സെറിബ്രൽ പാൾസിയുടെ പൊതു ലക്ഷണങ്ങൾ

- ചില കുട്ടികൾക്ക് നടക്കാനോ കൈകാലുകൾ അനക്കാനോ സാധിക്കാറില്ല.
- മറ്റു ചില കുട്ടികൾക്ക് നടക്കാനും അവരുടെ ജോലികൾ ചെയ്യാനും കഴിയുന്നു .
- വായ പൂർണമായി അടക്കാൻ സാധിക്കാത്തതിനാൽ, വായയുടെ വശങ്ങളിൽനിന്ന് ഉമിനീർ പുറത്തുവന്നുകൊണ്ടിരുന്നേക്കാം.
- ബുദ്ധിക്കുറവ്, കാഴ്ച്ചയുടെ തകരാറുകൾ, കേൾവി പ്രശ്നങ്ങൾ എന്നിവ ഉണ്ടാകാം.
- കുട്ടിയുടെ നിയന്ത്രണത്തിലില്ലാത്തഅനാവശ്യമായ ശാരീരിക ചലനങ്ങൾ കണ്ടേക്കാം(hyperkinetic movements).

- നടക്കാനായി ചില സഹായികളോ ഉപകരണങ്ങളോ ഉപയോഗിച്ചേക്കാം.
- നേരെ നിൽക്കാനോ ശരീരം ബാലൻസ് ചെയ്യാനോ ചിലർക്കാകില്ല
- ഭക്ഷണം ചവയ്ക്കാനും ഇറക്കാനും ബുദ്ധിമുട്ട് ഉണ്ടായേക്കാം.
- സ്വയം ഇരിക്കാനും നിൽക്കാനും നടക്കാനുംതാമസമുണ്ടായേക്കാം.
- മലമൂത്ര വിസർജനം നിയന്ത്രിക്കാനുള്ള ബുദ്ധിമുട്ട് ഉണ്ടായേക്കാം.

സെറിബ്രൽ പാൾസിയുടെ കാരണങ്ങൾ എന്തെല്ലാം?

പ്രസവത്തിനു മുമ്പുള്ള കാരണങ്ങൾ

ഗർഭിണിയായ അമ്മക്ക് ഉണ്ടാകുന്ന അണുബാധകൾ (Viral infections), ലഹരിവസ്തുക്കളുടെ ഉപയോഗം,പോഷകാഹാരക്കുറവ്,വിഴ്ച്ച തുടങ്ങിയവ.

പ്രസവസമയത്തെ കാരണങ്ങൾ

ജനനസമയത്ത് ഉണ്ടാകുന്ന പ്രശ്നങ്ങൾ കാരണം തലക്ക് പരിക്കേൽക്കുന്നത്.

ജനിച്ചയുടൻ ആവശ്യത്തിന് ഓക്സിജൻ കിട്ടാതിരിക്കുന്നത് (Hypoxia). പൊക്കിൾക്കൊടി കഴുത്തിൽ ചുറ്റുക, ജനനസമയത്ത് കാലുകൾ ആദ്യം പുറത്തുവരുന്നത്,ജനിച്ചയുടനെ കരയാതിരിക്കുന്നത് തുടങ്ങിയവ ഈ അവസ്ഥക്ക് കാരണമായേക്കാം.

പ്രസവത്തിനു ശേഷമുള്ള കാരണങ്ങൾ

ജനിച്ച ഉടനെത്തന്നെ തന്നെ കുട്ടിക്ക് വീഴ്ചയോ അണുബാധയോ (Viral fevers, Meningitis) സംഭവിക്കുന്നത് സെറിബ്രൽ പാൽസിക്ക് കാരണമാകാം.

സെറിബ്രൽ പാൾസി ബാധിച്ച കുട്ടിയുടെ സംസാര-ഭാഷാ ബുദ്ധിമുട്ടുകൾ താഴെ പറയുന്നു :

- സംസാരിച്ചുതുടങ്ങാൻ താമസിച്ചേക്കാം.
- സംസാരിക്കാൻ മതിയായ ശ്വാസം കിട്ടാതെ വരുക.
- സംസാരം വ്യക്തമല്ലാതെ ഇരിക്കുക.(poor intelligibility)
- ചില അക്ഷരങ്ങൾ പറയാനുള്ള ബുദ്ധിമുട്ട് (Pronunciation difficulty)
- കരകരപ്പുള്ള ശബ്ദം

അനുബന്ധ പ്രശ്നങ്ങളുടെ എണ്ണം കൂടുന്നതിനനുസരിച്ച് സംസാരിക്കാനുള്ള ബുദ്ധിമുട്ടും കൂടുന്നു .

(കാഴ്ചക്കുറവ്,കേൾവിക്കുറവ് തുടങ്ങിയ വ ഉണ്ടെങ്കിൽ ഭാഷ പഠിക്കാൻ കൂടുതൽ ബുദ്ധിമുട്ടാകുന്നു).

സെറിബ്രൽ പാൾസി ബാധിച്ച കുട്ടിയെ ആർക്കൊക്കെയാണ് സഹായിക്കാൻ കഴിയുക?

ശിശുരോഗവിദഗ്ധൻ (Pediatrician)- കുട്ടിയുടെ പൊതുവായ വളർച്ചാ വികസനം പരിശോധിക്കുകയും ഉചിതമായി ചികിൽസിക്കുകയും ചെയ്യുന്നു.

ന്യൂറോളജിസ്റ്റുകൾ (Neurologist)- നാഡികളുടെയും പേശികളുടെയും (Nerves & Muscles) പ്രവർത്തനത്തെ വിലയിരുത്തുകയും ചികിൽസിക്കുകയും ചെയ്യുന്നു.

ഫിസിയോതെറാപ്പിസ്റ്റ്(Physiotherapist) - വിവിധതരം വ്യായാമങ്ങളിലൂടെ കൈകാലുകളുടെ ചലനവും ശക്തിയും കൂട്ടാൻ സഹായിക്കുന്നു.

സ്പീച് ലാംഗ്വേജ് പാത്തോളജിസ്റ്റ് (Speech Language Pathologist) - സംസാരിക്കാനും ഭക്ഷണം കഴിക്കാനുമുള്ള ബുദ്ധിമുട്ടുകൾ വിലയിരുത്തുകയും ചികിത്സിക്കുകയും ചെയ്യുന്നു.

ഒക്യുപേഷണൽ തെറാപ്പിസ്റ്റ് (Occupational therapist) - കുട്ടിക്കുണ്ടാകുന്ന സെൻസറി പ്രശ്നങ്ങൾ (Sensory issues) കൈകാര്യം ചെയ്യുന്നു. സൂഷ്മ ചലനങ്ങളുടെ കാര്യത്തിലും വേണ്ട ചികിത്സ നൽകുന്നു.

ഓഡിയോളജിസ്റ്റ് (Audiologist) - കേൾവിശക്തി വിലയിരുത്തുകയും ഉചിതമായി ചികിൽസിക്കുകയും ചെയ്യുന്നു.

സെറിബ്രൽ പാൾസി ബാധിച്ച കുട്ടിയെ നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും?

അടിയന്തിര സാഹചര്യത്തിൽ എന്തുചെയ്യണമെന്ന് നിങ്ങൾക്കറിയാമെന്ന് ഉറപ്പാക്കുക. സെറിബ്രൽ പാൾസി ബാധിച്ച ഒരു കുട്ടിക്ക് പതിവിലും കൂടുതൽ വൈദ്യസഹായം ആവശ്യമായി വന്നേക്കാം.
ഉദാ : ക്ലാസ് സമയത്തോ അല്ലെങ്കിൽ കളിക്കിടയിലോ കുട്ടിക്ക് അപസ്മാരം(*seizures*) വന്നാൽ എന്ത് ചെയ്യണം എന്ന് ടീച്ചർ അറിഞ്ഞിരിക്കണം.

നിങ്ങളുടെ വിദ്യാർത്ഥി വാക്കിംഗ് *(Walking aids)* എയ്ഡ്സ് ഉപയോഗിക്കുന്നുണ്ടെങ്കിൽ, അവന്/ അവൾക്ക് ക്ലാസ്സ്മുറിയിലൂടെ സുഗമമായി സഞ്ചരിക്കാം എന്ന് ഉറപ്പുവരുത്തുക.

നിങ്ങൾ ചെറുതും ക്രിയാത്മകവുമായ നിർദേശങ്ങളാണ് നൽകുന്നതെന്ന് ഉറപ്പാക്കുക.

സെറിബ്രൽ പാൾസി കുട്ടിയുടെ ആത്മാഭിമാനവും ആത്മവിശ്വാസവും കുറയ്ക്കും. അവരുടെ ചെറിയ ചെറിയ വിജയങ്ങളെ പ്രോത്സാഹിപ്പിക്കുന്നത് കൂടുതൽ ആത്മവിശ്വാസമുള്ളവരാകാൻ അവരെ സഹായിക്കും.

അവർക്ക് എന്തെങ്കിലും പിന്തുണ ആവശ്യമുണ്ടെങ്കിൽ നിങ്ങളുടെ അടുത്ത് വരാമെന്ന് ശാന്തമായി അവരോട് പറയുക.

സെറിബ്രൽ പാൾസിയെ കുറിച്ച് ക്ലാസ്സിലെ കുട്ടികളെ ബോധവാന്മാരാക്കുക

സെറിബ്രൽ പാൾസിയുള്ള കുട്ടിയെ ആരും കളിയാക്കുന്നില്ല എന്നും ഉറപ്പുവരുത്തുക.

8. മുറിച്ചുണ്ടും അണ്ണാക്കിലെ പിളർപ്പ്/വിള്ളൽ (*Cleft Lip & Palate*)

ചില കുട്ടികളുടെ ചുണ്ടുകളിൽ കാണപ്പെടുന്ന പിളർപ്പാണ് മുറിച്ചുണ്ട്.

അണ്ണാക്കിൽ ദ്വാരം ഉണ്ടാകുമ്പോൾ അതിനെ അണ്ണാക്കിലെ വിള്ളൽ എന്ന് പറയുന്നു.

മുറിച്ചുണ്ടും അണ്ണാക്കിലെ വിള്ളലും ഒരുമിച്ച് ചില കുട്ടികളിൽ കാണപ്പെടാം.

ഇവ ജന്മനാ ഉണ്ടാകുന്ന ഘടനാപരമായ അപാകതകളാണ് (Structural defects).

ഈ അവസ്ഥകളുടെ ലക്ഷണങ്ങൾ താഴെ പറയുന്നു:

- അമ്മയുടെ മുലപ്പാൽ കുടിക്കാനുള്ള ബുദ്ധിമുട്ട്.
- ഭക്ഷണം കഴിക്കുന്നതിലും വിഴുങ്ങുന്നതിലുമുള്ള ബുദ്ധിമുട്ടുകൾ വളർച്ചാകുറവുകൾ .
- ചിലരിൽ പരിമിതമായ ബുദ്ധി ശക്തി ഉണ്ടാകാം .
- ഇടയ്ക്കിടെ വരുന്ന ചെവിയുടെ അണുബാധ.

സംസാരവും ഭാഷാ വൈദഗ്ധ്യവും

- ⊡ സംസാരിക്കുമ്പോൾ വായു മൂക്കിലൂടെ പുറത്തേക്ക് വരുന്നു.അതിനാൽ അവർ മൂക്കിൽ നിന്ന് സംസാരിക്കുന്നതുപോലെ തോന്നുന്നു.
- ⊡ ഉച്ചാരണ പിശകുകൾ ഉണ്ടാകുന്നു.
- ⊡ ഇവരിൽ ചില ശബ്ദ പ്രശ്നങ്ങളും കണ്ടേക്കാം.ഉദാ : വളരെ മൃദുലമായ സ്വരം
- ⊡ ചിലരിൽ ഭാഷ വളർച്ചയിലും കുറവുകൾ കാണാൻ കഴിയും.

ഭക്ഷണം കഴിക്കുമ്പോൾ ഇവർനേരിടുന്ന പ്രശ്നങ്ങൾ ഇനിപ്പറയുന്നവയാണ്:

ഭക്ഷണം കഴിക്കുന്നത് അവർക്ക് വളരെ ശ്രമകരമാണ്.

കഴിക്കുന്ന ഭക്ഷണം, വെള്ളം,പാൽ തുടങ്ങിയവ മൂക്കിലൂടെ പുറത്തേക്ക് വന്നേക്കാം.

കഴിക്കുന്ന സമയത്ത് അമിതമായ വായു ഭക്ഷണത്തോടൊപ്പം അകത്തേക്കെടുത്തേക്കാം.

ആവശ്യത്തിന് ഭക്ഷണം കഴിക്കാത്തതിനാൽ ശരീരഭാരം കൂടുന്നില്ല. അത് പോഷകാഹാരക്കുറവിന് കാരണമായേക്കാം.

മുറിച്ചുണ്ടിനും അണ്ണാക്കിലെ വിള്ളലിനും കാരണങ്ങൾ എന്തെല്ലാം ?

ജനിതക കാരണങ്ങൾ (Genetic conditions)

ഗർഭിണിയായ അമ്മയിൽ ഫോളിക് ആസിഡ് (Folic acid) സാധാരണയിലും കുറയുന്നത്.

ഗർഭിണിയായ അമ്മയിലെ പ്രമേഹം (Gestational Diabetes)

ആർക്കൊക്കെയാണ് സഹായിക്കാൻ കഴിയുക?

മാക്സിലോ ഫേഷ്യൽ സർജൻ (Maxillofacial surgeon): മുറിച്ചുണ്ടും അണ്ണാക്കിലെ പിളർപ്പും ഓപ്പറേഷൻ ചെയ്ത് ശരിയാക്കുന്നു.

സ്പീച്ച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റുകൾ (Speech Language Pathologist) : കുട്ടിയുടെ സംസാരവും ഭാഷയും വിലയിരുത്തി വേണ്ട ചികിത്സ നൽകുന്നു . കുട്ടിക്ക് ഭക്ഷണം നൽകാനും അമ്മയെ സഹായിക്കുന്നു .

ഡയറ്റീഷ്യൻ(Dietician): ആവശ്യത്തിനുള്ള പോഷകാഹാരവും വളർച്ചയും ഉറപ്പാക്കാൻ ഭക്ഷണ പരിഷ്കാരങ്ങൾ നടത്തുന്നു .

ഓഡിയോളജിസ്റ്റ് (Audiologist) : കേൾവി ശക്തി വിലയിരുത്തുകയും ആവശ്യമെങ്കിൽ ശ്രവണസഹായി നൽകുകയും ചെയ്യുന്നു.

ശിശുരോഗവിദഗ്ധൻ (Pediatrician) : കുട്ടിയുടെ വളർച്ചയും വികാസവും പരിശോധിക്കുകയും വേണ്ട റെഫെറൽസ് കൊടുക്കുകയും ചെയ്യുന്നു.

ഓർത്തോഡോണ്ടിസ്റ്റ് (Orthodontist) : പല്ലുമായി ബന്ധപ്പെട്ട അസാധാരണതകൾ കൈകാര്യം ചെയ്യുന്നു .

മുലയൂട്ടൽ വിദഗ്ധൻ (Lactation specialist) : അമ്മക്ക് കുട്ടിയെ മുലയൂട്ടാൻ വേണ്ട സഹായങ്ങൾ നൽകുന്നു.

സൈക്കോളജിസ്റ്റുകൾ (Psychologists): മാതാപിതാക്കളുടെയും കുട്ടിയുടെയും മാനസിക സമ്മർദ്ദം പരിമിതപ്പെടുത്താൻ സഹായിക്കുന്നു.

പ്രോസ്റ്റോഡോണ്ടിസ്റ്റ് (Prosthodontist) : ആവശ്യാനുസരണം പ്രോസ്തെസിസ് (Prosthesis) തയ്യാറാക്കി സഹായിക്കുന്നു (ഉദാ : കൃത്രിമ അണ്ണാക്ക്).

കുട്ടിക്ക് മുന്നുമുതൽ ആറുമാസം വരെ പ്രായം ആകുമ്പോൾ മുറിച്ചുണ്ടിനുള്ള ആദ്യ ഓപ്പറേഷൻ ചെയ്യുന്നു.

അണ്ണാക്കിനുള്ള ഓപ്പറേഷൻ കുട്ടിക്ക് പത്തുമുതൽ പന്ത്രണ്ടു മാസം വരെ പ്രായമാകുമ്പോൾ ചെയ്യപ്പെടുന്നു.

എന്നിരുന്നാലും, ഓപ്പറേഷൻ മൂലവൻ പ്രശ്നങ്ങളും പരിഹരിക്കില്ല. കുട്ടി വളരുംതോറും സംസാരപ്രശ്നങ്ങൾ, ദന്തപ്രശ്നങ്ങൾ തുടങ്ങിയവ ഉണ്ടാകാം.

മുഖരൂപം (*Facial appearance*) മെച്ചപ്പെടുത്തുന്നതിന് കുട്ടിക്ക് കൂടുതൽ ഓപ്പറേഷനുകൾ ആവശ്യമായി വരും.

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും?

ക്ലാസ് മുറിയിൽ, കുട്ടിയെ മറ്റേതൊരു വിദ്യാർത്ഥിയെയും പോലെ പരിഗണിക്കണം.

സഹപാഠികൾ കുട്ടിയെ കളിയാക്കുന്നില്ലെന്ന് ഉറപ്പുവരുത്തുക.

ശ്രവണ പ്രശ്നങ്ങളുണ്ടെങ്കിൽ കുട്ടിയെ കേൾക്കാൻ എളുപ്പമുള്ള സ്ഥാനത്ത് ഇരുത്തുക.

കുട്ടിയുടെ അവസ്ഥയെക്കുറിച്ച് സഹപാഠികളെ ബോധവാന്മാരാക്കുക .

വിദ്യാർത്ഥി ചോദ്യങ്ങൾക്ക് ഉത്തരം നൽകുമ്പോൾ വാക്കുകൾ പൂർത്തിയാക്കാതെ നല്ല ഉച്ചാരണം പ്രോത്സാഹിപ്പിക്കുകയും ചെയ്യുക.

കുട്ടിക്ക് സ്കൂൾ വർഷങ്ങളിൽ അധിക ശസ്ത്രക്രിയ ആവശ്യമായി വരുന്നത് അസാധാരണമല്ല എന്നു പറഞ്ഞല്ലോ

ഈ സമയങ്ങളിൽ പ്രധാന നിർദ്ദേശങ്ങളോ, അസൈൻമെന്റുകളോ, ടെസ്റ്റുകളോ കുട്ടിക്ക് നഷ്ടമാകുന്നില്ലെന്ന് ഉറപ്പാക്കാൻ അധ്യാപകർ ശ്രദ്ധിക്കണം.

9. ഓട്ടിസം (Autism)

ഓട്ടിസമുള്ള ഒരു കുട്ടിക്ക് മറ്റുള്ളവരുമായി ഇടപഴകുവാനും സംസാരിക്കുവാനും ബുദ്ധിമുട്ടുകൾ ഉണ്ടാകുന്ന . ഇതോടൊപ്പം ചില പെരുമാറ്റ പ്രശ്നങ്ങളും ഉണ്ടാകാം.

ഓട്ടിസത്തിൻറ്റെ ലക്ഷണങ്ങൾ എന്തൊക്കെയാണ്?

- മുഖത്തേക്കും കണ്ണിലേക്കും നോക്കി സംസാരിക്കാനുള്ള ബുദ്ധിമുട്ട്.
- പുറത്തേക്ക് ദീർഘനേരം നോക്കിയിരിക്കുന്ന പ്രവണത ചിലരിൽ കാണപ്പെടുന്നു.
- സുഹൃത്തുക്കളെ ഉണ്ടാക്കാനും സൗഹൃദം നിലനിർത്താനും ഉള്ള ബുദ്ധിമുട്ട്.
- പലപ്പോഴും തങ്ങളുടേതായ ഒരു ലോകത്ത് ഒതുങ്ങി കൂടുവാൻ അവർ ആഗ്രഹിക്കുന്നു.
- ശബ്ദങ്ങൾ കേൾക്കുമ്പോൾ ചെവി പൊത്തുന്നു.

- കൈകളും ശരീരഭാഗങ്ങളും പ്രത്യേക രീതിയിൽ ചലിപ്പിക്കുക (*Repetitive movements*).
- സ്ഥിരമായി പാലിച്ചുവരുന്ന ദിനചര്യയിൽ മാറ്റം വരുന്നത് അവർക്ക് ബുദ്ധിമുട്ടുണ്ടാക്കും.ഉദാ : എന്നും ഒരേ ഗ്ലാസിൽ ചായ കുടിക്കുന്നത്.
- തങ്ങളുടെ വികാരങ്ങളെ അമിതമായി പ്രകടിപ്പിക്കുന്നു.ഉദാ : സന്തോഷമാകുമ്പോൾ അമിതമായി ചിരിക്കുന്നു.
- കാണാൻ കഴിയാത്ത കാര്യങ്ങൾ മനസ്സിലാകില്ല.ഉദാ : കഴിഞ്ഞതും നടക്കാൻ പോകുന്നതുമായ കാര്യങ്ങൾ മനസ്സിലാക്കാൻ സാധിക്കാതെ വരുക.
- സ്വയം പരിക്കേൽപ്പിക്കുന്നത് (*Self injurious behaviors*).ഉദാ: സ്വയം കടിക്കുക,തല ഭിത്തിയിൽ ഇടിക്കുക

എന്താണ് ഓട്ടിസത്തിന് കാരണമാകുന്നത് ?

ജനിതക കാരണങ്ങൾ (*genetic causes*)

മാതാപിതാക്കൾ കുട്ടിയോടൊപ്പം വേണ്ടത്ര സമയം ചിലവിടാത്തത് സംസാരിക്കാൻ പഠിക്കുന്നതിനു കുട്ടിക്ക് തടസ്സമായേക്കാം (*Poor stimulation*)

ഓട്ടിസം ബാധിച്ച കുട്ടിയെ ആർക്കൊക്കെയാണ് സഹായിക്കാൻ കഴിയും:

ശിശുരോഗവിദഗ്ധൻ (*Pediatrician*)	കുട്ടിയുടെ പൊതുവായ വളർച്ചയും വികാസവും നിരീക്ഷിക്കുകയും മറ്റ് പ്രൊഫഷണലുകൾക്ക് ഉചിതമായ റഫറലുകൾ കൊടുക്കുകയും ചെയ്യുന്നു
ഡയറ്റീഷ്യൻ (*Dietician*)	കുട്ടിക്ക് ഉചിതമായ പോഷകാഹാരം ലഭിക്കുന്നുണ്ടെന്ന് ഉറപ്പുവരുത്തുന്നു.

സ്പീച്ച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റ് (Speech Language Pathologist)	കുട്ടിയുടെ സംസാരശേഷിയെ വിലയിരുത്തി സ്പീച് തെറപ്പി നൽകുന്നു.
സ്പെഷ്യൽ എഡ്യൂക്കേഷൻ ടീച്ചർ (Special education teacher)	എഴുതാനും വായിക്കാനും ആവശ്യമായ കഴിവുകൾ പഠിപ്പിക്കുന്നു.
ഒക്യുപേഷണൽ തെറാപ്പിസ്റ്റ് (Occupational therapist)	സെൻസറി പ്രശനങ്ങൾ (Sensory issues) പരിഹരിക്കാനും, ദൈനംദിന പ്രവർത്തികൾക്കാവശ്യമാ സൂക്ഷ്മ ചലനങ്ങൾ (Fine Motor skills) പഠിക്കാനും സഹായിക്കുന്നു.

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും?

- ഓട്ടിസം ഉള്ള കുട്ടിയുടെ ലക്ഷണങ്ങളെകുറിച്ച ബോധവാന്മാരാക്കുക.
- ഓട്ടിസത്തെക്കുറിച്ച് സഹപാഠികളെ ബോധവാന്മാരാക്കുക.
- ധാരാളം ദൃശ്യ വിവരങ്ങൾ ഉപയോഗിച്ച് പാഠങ്ങൾ പഠിപ്പിക്കുക.
- സഹപാഠികൾ കുട്ടിയെ കളിയാക്കുന്നില്ലെന്ന് ഉറപ്പാക്കുക.
- കുട്ടി നൽകുന്ന ആംഗ്യങ്ങളും സൂചനകളും മനസ്സിലാക്കുകയും പ്രതികരിക്കുകയും ചെയ്യുക.

10. അറ്റെൻഷൻ ഡെഫിസിറ്റ് ഹൈപ്പർആക്ടിവിറ്റി ഡിസോർഡർ (ADHD)

- ശ്രദ്ധക്കുറവ്,അത്യധികം ആവേശഭരിതമായ പെരുമാറ്റം, അസാധരണമാംവിധമുള്ള ശാരീരിക പ്രവർത്തനങ്ങൾ എന്നിവയാൽ വിശേഷിപ്പിക്കപെടുന്ന ഒരു അവസ്ഥ ആണ് ADHD.

ADHD ഉള്ള കുട്ടികളുടെ പൊതുലക്ഷണങ്ങൾ:

- അക്രമകരവും അക്ഷമത കലർന്നതുമായ സ്വഭാവങ്ങൾ.
- ശ്രദ്ധ വേണ്ട കാര്യങ്ങൾ / ജോലികൾ ഒഴിവാക്കുന്നത്.
- തങ്ങളുടെ ഊഴത്തിനായി കാത്തിരിക്കാനുള്ള ബുദ്ധിമുട്ട്.
- ദിവാസ്വപ്നങ്ങൾ കാണുന്നത്.

- ഇരിക്കേണ്ടപ്പോൾ സീറ്റ് വിട്ടുപോകുന്നത്.
- അനാവശ്യമായി ഓടുന്നതോ ഉയരങ്ങളിൽ കയറുന്നതോ.

- ഒരിടത്തിരുന്നു കളിക്കണോ വിനോദങ്ങളിൽ ഏർപ്പെടാനോ കഴിയാത്തത്.
- മറ്റുള്ളവരുടെ സാധനങ്ങൾ അവരുടെ അനുവാദമില്ലാതെ ഉപയോഗിക്കുന്നത്.

ADHD ഉള്ള കുട്ടികളിലെ സംസാര പ്രശ്നങ്ങൾ താഴെ പറയുന്നവയാണ്

- അമിതമായി സംസാരിക്കുക
- മറ്റുള്ളവർ സംസാരിക്കുമ്പോൾ ഇടക്കുകയറി സംസാരിക്കുന്നത്
- ഒരാളുമായി സംസാരിക്കുമ്പോൾ തൻ്റെ ഊഴത്തിനായി കാത്തിരിക്കാൻ സാധിക്കുന്നില്ല
- ചോദ്യങ്ങൾ പൂർത്തിയാകുന്നതിന് മുമ്പ് ഉത്തരം പറയുന്നത്

- വായിക്കുന്ന കാര്യങ്ങളിലെ ഉള്ളടക്കം മനസിലാക്കാനും അതിനെ പറ്റി പറയാനുമുള്ള ബുദ്ധിമുട്ട് .
- എപ്പോൾ എന്ത്പറയണമെന്നോ ആരോടെങ്ങനെ സംസാരിക്കണമെന്നോ അവർക്കറിയില്ല.
  ഉദാ : മുതിർന്ന ആളുകളോട് സംസാരിക്കുമ്പോൾ നീ,നിനക്ക എന്നിങ്ങനെയുള്ള വാക്കുകൾ ഉപയോഗിക്കുന്നു.
- എഴുതാനും വയ്ക്കാനുമുള്ള ബുദ്ധിമുട്ടുകൾ

ക്ലാസ് മുറിയിൽ ADHD ഉള്ള ഒരു കുട്ടിയുടെ പെരുമാറ്റം താഴെ പറയുന്നവയാണ്:

- ഹോം വർക്ക് ചെയ്യാൻ മറക്കുന്നു
- പെൻസിൽ റബ്ബർ പോലെയുള്ള സാധനങ്ങൾ ഇടയ്ക്കിടെ നഷ്ടപ്പെടുക
- ശ്രദ്ധയും ഏകാഗ്രതയും എളുപ്പത്തിൽ നഷ്ടപ്പെടുന്നു
- അവരോട് സംസാരിക്കുമ്പോൾ അവർ ശ്രദ്ധിക്കാറില്ല
- ഒരേസമയത്ത് ഒത്തിരി കാര്യങ്ങൾ ചെയ്യാൻ നോക്കുന്നു

ADHD ഉള്ള ഒരു കുട്ടിയെ സഹായിക്കാൻ ആർക്കൊക്കെയാണ് കഴിയുക?

ന്യൂറോളജിസ്റ്റ് (*Neurologist*)	A D H D യുടെ ലക്ഷണങ്ങൾ വിലയിരുത്തി മരുന്നുകൾ നൽകി സഹായിക്കുന്നു
ഡയറ്റീഷ്യൻ (*Dietician*)	ഭക്ഷണ പരിഷ്കാരങ്ങൾ വഴി A D H D യുടെ ലക്ഷണങ്ങൾ കുറക്കാൻ സഹായിക്കുന്നു

സ്പീച് ലാംഗ്വേജ് പത്തോളജിസ്റ്റ് (*Speech Language Pathologist*)	കുട്ടിയുടെ സംസാരശേഷി പരിശോധിക്കുകയും സ്പീച് തെറപ്പി നൽകുകയും ചെയ്യുന്നു.
ഒക്യുപേഷണൽ തെറാപ്പിസ്റ്റ് (*Occupational Therapist*)	ശ്രദ്ധ കൂട്ടാനും ഒരിടത്ത് അടങ്ങിയിരുന്ന് കാര്യങ്ങൾ ചെയ്യാനും വേണ്ട വ്യായാമങ്ങൾ നിർദ്ദേശിക്കുന്നു.
മനശാസ്ത്രജ്ഞൻ (*Psychologist*)	ADHD യുടെ ലക്ഷണങ്ങൾ വിലയിരുത്തുകയും,കുട്ടിയുടെ സ്വഭാവ പ്രശ്നങ്ങൾ കൈകാര്യംചെയ്യുകയും ചെയ്യുന്നു.

നിങ്ങൾക്ക് എങ്ങനെ സഹായിക്കാനാകും?

- ☐ എല്ലാ ദിവസവും ഒരേ ദിനചര്യകൾ പിന്തുടരാൻ കുട്ടിയെ പരിശീലിപ്പിക്കുക.
- ☐ സ്കൂൾ ബാഗുകൾ, വസ്ത്രങ്ങൾ, കളിപ്പാട്ടങ്ങൾ എന്നിവ എല്ലാ ദിവസവും ഒരേ സ്ഥലത്ത് വയ്ക്കാൻ പ്രോത്സാഹിപ്പിക്കുക.
- ☐ ജോലികൾ നേരത്തെ ആരംഭിക്കുകയും ഇടവേളകൾ എടുക്കുകയും ചെയ്യുന്നത് സമ്മർദ്ദം പരിമിതപ്പെടുത്താൻ സഹായിച്ചേക്കാം.
- ☐ ലക്ഷ്യങ്ങൾ ലിസ്റ്റുചെയ്യാനും, പോസിറ്റീവ് പെരുമാറ്റങ്ങൾ ട്രാക്കുചെയ്യാനും ഒരു ചാർട്ട് ഉപയോഗിക്കുക.

- കുട്ടിയുടെ പാഠ്യേതരമായ കഴിവുകൾ കണ്ടെത്തുകയും പ്രോത്സാഹിപ്പിക്കുകയും ചെയ്യുക .
- പോഷകസമൃദ്ധമായ ഭക്ഷണം,ഉചിതമായ വ്യായാമം,മതിയായ ഉറക്കം എന്നിവ ഉറപ്പുവരുത്തുക.
- എന്തെങ്കിലും കാര്യം ചെയ്യേണ്ടിവരുമ്പോൾ വ്യക്തമായ നിർദ്ദേശങ്ങൾ നൽകുക .
- ചെയ്യേണ്ട കാര്യങ്ങൾ ആസൂത്രണം ചെയ്യാൻ അവരെ സഹായിക്കുക.

പ്രിയപ്പെട്ട ടീച്ചർക്ക് നന്ദി.കുട്ടികളിൽ കാണപ്പെടുന്ന വിവിധ സംസാരവൈകല്യങ്ങളെ കുറിച്ച നിങ്ങൾക്ക് ഇപ്പോൾ കൂടുതൽ അറിവുലഭിച്ചെന്ന് കരുതുന്നു. എന്തെങ്കിലും സംശയമോ ചോദ്യങ്ങളോ ഉണ്ടെങ്കിൽ ബന്ധപ്പെടുക.

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Appendix 5

Shows the link to access to developed flipbook on childhood communication disorders in Malayalam for school teachers.

http://203.129.241.86/Question%20Papers/delvin%20dissertation-2022/mobile/index.html#p=6