

# ADHD: MULTIMODAL INTERVENTION WITH SPEECH AND LANGUAGE THERAPY

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## Abstract

One new issue that is experienced in the childhood period is Attention Deficit Hyperactive Disorder (ADHD) that is in neuropsychiatric syndrome. The Symptoms of these interfere in the development of cognitive, social, and communication in the early life of childhood. A ADHD child tends to have difficulty while communicating, talking, interfering and having the conversation with the people, difficulty stringing words, talking with the loud voice, inefficiency in speaking, and often misstep's cause commotion with others in kindergarten/playgroup students. By the way of treatment of speech therapy the children with the difficulty in communicating due to ADHD can be handled. The treatment of speech therapy is generally used for the provision of treatments, which deal with disorders in the language, speech and sound, which serve as foundation to make a diagnosis and treatment. The manuscript objective is to describe ADHD and how to treat it with speech therapy is oriented to train and sharpen phonological awareness of early childhood in recognizing alphabet and words, especially in its use to communicate.

**Keywords:** ADHD; speech therapy; early childhood.

## 1. Introduction

The early age development is a very much essential for the child as this age is also called as "golden age" period [1][2][3]. This period contributed to the child development that is necessary for the future of the child. This makes the need to be met and also for overcoming the different developmental disorders experienced by children in this age. Some of the phenomena which is been experienced by early childhood associated in its development become a very important thing. The phenomenon is related to the phenomenon of ADHD (Attention Deficit Hyperactivity Disorder) [4][5]. Attention deficit / hyperactivity disorder (ADHD) is a neurodevelopmental disorder in children characterized by improper development of attention, hyperactivity, and / or impulsivity, along with extensive functional and pervasive damage [6][7]. These conditions affects more to

the child in their academic achievements. The welfare of the child is also been get affected due to ADHD. The child also face various difficulties during having a social interactions with others [8][9]. This ADHD disorders affect 3-5% of early children[10][11]. The ADHD Symptoms can be seen in child before 7 years of his age [12], then after that age if not handled properly will settle as a teenager or adult[13]. As per the one estimation that ADHD patients would persist or carry their ADHD disorders with an estimated 15-20% of adults. Also, around 65% would experience the residual symptoms in their adulthood or sometimes it would disappear gradually [14].

As per American Psychiatric Association, the ADHD has a negative effect, which is around 3 percent to 10 percent on early-childhood [15]. Further, in various research studies it is also found a rise in ADHD cases in children in their

early child age [16]. ADHD which occurs in children could be a nuisance with speech or language or both. Similar symptoms are seen in attention and language problems [17]. Therefore, ADHD children will experience various problems which are mostly related to communication and language.

Following are the Examples that ADHD Children Face While Communicating

1. Disturbing others when they are speaking
2. Facing difficulties while composing the words
3. Not speaking coherently.
4. Getting distracted by their own thoughts.

Many times it is also seen that ADHD children make unrelated comments or talk which might not relate to the context [17]. From the various studies findings it is revealed that ADHD phenomena are related to the various genetic factors, family and environmental education and the eating habits [18]. If the ADHD child is left untreated then, he has the potential for the great impact that is analogous to the form of “iceberg” [19]. As per Weisler, et al, that ADHD children potentially will experience it until adulthood [20]. Explicitly the ADHD makes a child different from other children. But, ADHD conditions have not always been an obstacle for the children, in fact by giving proper treatment and therapy to the child it can be cured [21][22][23]. This statement had the relevance from the research from Amazine.com in Artanti’s research where it is been found some types of therapy, which can be used for treating the ADHD child [24]: following are they:

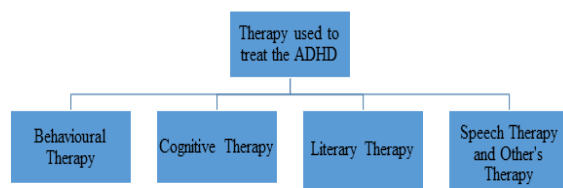


Figure 1: Therapy used to treat the ADHD

As per the results from the various studies it is found that suitable therapy has been used for handling the difficulties which are faced while communicating with the children's ADHD speech therapy [26]. For treating the children with the impaired communication, speech therapy is used [8]. The children that experience the problem in communication are often detected by being late in speaking [17]. Speech therapy can be used for those children that experience speech delay; further other communication disorders can be solved through various therapy sessions [27]. As per above exposure it could be concluded that the ADHD has potential for affecting the development of the child in their early childhood stage. Hence, it is necessary to handle the ADHD child by the way of speech therapy treatment. Further this research paper will be describing the ADHD, speech therapy and how handling difficulties communicate early childhood as one alternative approach.

## 2. RESULT AND DISCUSSION ADHD

Concentration and hyperactivity disorder often called as a Attention Deficit Hyperactive Disorder (ADHD) is a recent neuropsychiatric syndrome which is most common in children, that accompanied by restless or hyperactivity, those children are not able in concentrating in their any work and activities, impulsive and inhibiting or destructive behaviour, which can result to an imbalance of the most of their lives's activities, which can disrupt the schooling and academic achievement [19][20]. As per Strine et al. children with the ADHD have a disturbed or damaged cognitive, it can disrupt the communication; mainly it interferes with the learning process. This is due to the learning process in the early-childhood class needs the ability to communicate very well with their friends and teachers [28][29]. As per the above exposure, we can conclude that children with ADHD have the potential for interfering in terms of development and impact on learning activities.

Literature shows evidence of the improved efficacy of multimodal intervention over medical management alone for reducing the core symptoms of ADHD [9]. The improvement that is shown by the Group II goes well with the existing literature that short-term trials of the psycho stimulants are effective in reducing the core symptoms of ADHD. For treating ADHD children, Clonidine has also been found effective. In the present study, 12 children were on MPH and 8 children on clonidine, from each group. It has been found that there is more improvement in Group I which could be because of inclusion of the attention enhancement package which was found effective in the improvement of core symptoms of the ADHD especially inattention. In Group I it was noticed on attention measure, that the improvement in committing errors of omission and commission in colour cancellation. It can be because of the improvement that occurred in the sustained attention, visual scanning and impulsivity which are impaired in ADHD children. The attention enhancement training given to Group I may have improved these deficits as the tasks in the attention package were targeted to improve the same. The medical management impact combined with the parent training in order to improve the attention and impulsivity [25]. The current study couldn't assess the contribution of each treatment component in improving these deficits due to methodological limitations

On the rating scale of ADHD, the ratings of the parents and investigator both correlates well with the blind rater after assessment, but it doesn't correlates with the rating of the teacher, which can be partially explained with the help of the differences in scoring keys used as it was same for the investigator and parent rating were same but was not same for the ratings of the teachers. There were differences in outcome, which was reported by the different informants with the different parameters in various studies. It was suggested that outcome measures which are completed by parents may be tapping a source of information regarding therapy effectiveness different from the one sampled by data collected by independent observers. The Low correlation between the informants might indicate that the target variables may differ in

every situation, rather than that informants' reports are invalid or unreliable.

The improvement in the behavioural problems at home goes well with the literature that taring given by and to the parents reduces the behavioural problems of the child at home [28]. It has been concluded from the various research that the parent training is effective to reduce the behavioural problems in ADHD and also the behavioural problems which are associated with conduct disorder, oppositional defiant disorder and such comorbid conditions which were present in the sample. Further, studies reported that pharmacological intervention mainly with the psycho stimulants is effective to reduce the behavioural problems in the ADHD and its comorbid conditions. So the improvement which is shown by Group I in those research studies, the behavioral problems of children in their home situations was because of the pharmacological intervention as those children have undergone the psycho stimulant treatment along with the parent training, which may add the benefits of the parent training.

The result from the studies showed an improvement at the school in their behavioural problems for Group I. This is because teachers are monitoring the behavioural problems and its implementation. Teachers send the daily report card of the contingency management to the parent. Therefore both teachers and the parents play an important role in solving the behaviour problem of the child. All this has been done as a part of parent training that has been included in the multimodal intervention. The Literature showed that the behaviour modification had improved the oppositional behaviour, positive and social behaviour and peer conflicts in the classroom [3, 4].

While comparing both the home and school situation, the behavioural problems improvements are much better at the home situation, and that of at the school situations was less. This may be because at home the parent has the blood relation and they take more active participation in intervention and also keep the close monitoring of behavioural problems. Also for the teachers there are lots of children, so they can't keep an attention on every child deeply and

while the parent can keep more attention on their own child.

### 3. SPEECH THERAPY

As per World Health Organization, for improving the vocalisation and articulations like stuttering, the speech therapy was designed. This is a set of procedure and behaviour techniques [30][31]. It is useful for rehabilitation of the individual that experiences aphasia. Speech therapy is also useful for the implementation of language development disorder [13]. For those children that experience communication disorders at an early age, speech therapy is useful for the children to deal with that problem [26]. Therefore, speech therapy is useful for helping the children that are facing difficulty to speak [26]. The speech therapy is useful for training the younger children skillfully by encoding their ability for speaking by hands and with help of other organs and facial expression [26].

Also, the use of speech therapy in children is expected for increasing their knowledge about different types of language and its characters and also can evaluate speaking.

According to medical science, speech therapy is useful for helping the patient that has been facing a difficulty in communicating or speaking because of a particular disease such as patients that have a stroke [14]. Also, in the education field the child required speech therapy at a very early stage. As per research done by Nakai's the child that had one or many symptoms of ADHD, such children at their early stage with the help of speech therapy can overcome this [17]. Brunner's et al, research is also supported by this that usage of speech therapy is very much effective to deal with the disruption of communication and speech that is experienced by the children at their early age [33].

Further, as per Artanti research, in her speech therapy process, it can be done while giving the instructions at the time of instruction process [12]. The ADHD children are managed to improve the speech and language of the children with the help of speech therapy.

Both speech and language are two different things. It is this utterance, which makes the voice of spoken language. There are 4 elements which make a speech: articulation, phonology, sound and fluency.

The first element is articulation, which means to make a sound. Children till the age of 5 or 6 are given to hear the sound and also asked to make a sound. If the child is unable to make the sound continue, then it can be a sign of an articulation problem.

The second element is phonology is how the language sounds are structured for making the words. Children having the phonological problems may change the sound consistently which is made in the throat because of the sound made at the front of the mouth.

The Third element is sound i.e. tone, volume and quality of speech. The child who has trouble with sound may sound hoarse, breathing when they speak. The child might be talking too loud for this situation.

The Fourth element is fluency, which means the flow during the speaking. The children might stutter, pause or stammer in the "wrong" places as they speak.

In the classification of the communication disorders which could be handled by the speech therapy is [9]:

3.1 Speech Interruption (Articulation) – This is one of the communication behaviour disorder that is because of the one or more reasons which is mainly associated with the observation (sensation and perception), neuromuscular function, the condition of talking organs, or the influence of the environment was difficulty for using the sounds of the language with correct. The error lies in the point of articulation or on the way of producing the sound of the language (manner of articulation). Difficulty faced while speaking is generally marked by the omission, substitution, distortion (unclear) and addition. These disorders include failure while saying several letters. It can also be an interruption in pitch, volume or sound quality [14].

**3.2 Language Disorder:** This is the one of the communication behaviour disorders where the person having a language disorder generally faces the obstacles or of the process of (coding) and use of linguistics by the environment. Hence, such patients face barriers in their development, receptive ability barriers, and expressiveness barriers. This language disorder, which is faced by the patients can result from lesions in the language centres in the cerebral context.

**3.3 Sound Disturbance -** This is one of the communications, which is generally characterized by the disturbance of sound production process (fonation), this generally occurs because of the causes of the organic or functional. The sound disturbance affects the function of the larynx during phonation. It is a sound production process which can be characterized by interference on various different aspects such as: loudness, tone (which is also called as pitch), and quality.

The Sound disturbance is further classified in 2 parts i.e. dysphonia and aphonia:

a) **Dysphonia** – It is a communication disorder of deviation or imperfection in sound production, which is generally caused due to organic or functional factors. These conditions include tone disorders and impaired quality.

b) **Aphonia** – It is a communication disorder which is generally caused because of loss of sound source or failure to produce the sound.

**3.4 Rhythm:** Rhythm disturbance is communication behaviour disorder, which is generally characterized by sound repetition sound or syllable and prolongation and blocking at speech time. The existence of repetition, extension and blocking results in the patient being unable to speak in the fluent way. This generally takes place because of psychosocial disorders or some other causes, which interfere with the neuromotor function of speech organs. Rhythm disturbance is classified in 3: 1) stutter, 2) cluttering, and 3) talkative.

**3.5 Swallowing Disorders (Dysphagia):** Here the person faces the difficulty in

swallowing, which is divided in 3 phases i.e. the oral phase, pharyngeal phase and phase esophageal, which is caused by pathological, psychogenic and neurological conditions. The causes of language development disorder are numerous and extensive.

As per Sunanik the factors, which is caused due to speech disorders is [9]: first is, internal factors or biological factors, which includes perceptual factors, genetic factors, cognition factors and prematurity. Next is the external factors or environmental factors that consist of parenting and verbal environments. The speech therapy procedure work can be detailed as follows [9]:

**First assessment.** This is conducted for obtaining the preliminary data which must be reviewed and analysed to make the next program, which includes 3 methods: i.e. observation, tests, and examination results.

**Second** is the assessment of diagnosis and prognosis, which is done for determining the problems or disorders which are generally experienced by the early childhood period, and to predict if a problem or disorder is not addressed properly.

**Third,** assessment is planning speech therapy which consists of the

- a) The purpose and the program, which is to be performed;
- b) Planning of method, technique, frequency and duration;
- c) Planning the use of the tools needed in therapy;
- d) Required referral planning;
- e) Evaluation planning.

**Fourth** is the implementation of the speech therapy that is oriented for planning, which has been made in the previous process.

**Fifth,** evaluation of the implemented speech therapy and monitoring it and last then reporting the result.

#### 4. CONCLUSION

As from the different research study which is done above, we can conclude that in order to handle the difficulties, which are faced by the ADHD child while communicating and interacting with others. Among the various therapies given in the various papers, speech therapy can be the most effective. This research paper describes the way in which ADHD, speech therapy and both work effectively. As per the above exposure, we can conclude that the speech therapy use can handle various symptoms of an ADHD child. Therefore, this paper makes a recommendation to all those people who are working with ADHD such as social workers, counselors, kindergarten teachers, therapists and other psychotherapists that they should understand and implement the speech therapy for the ADHD childrens.

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