

**Receptive Vocabulary Skills of 5-7 years old Bangla Speaking  
Children with or without Hearing Impairment**

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Bachelor of Science in Speech and Language Therapy

(B. Sc. In SLT)

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**Receptive Vocabulary Skills of 5-7 years old Bangla Speaking Children  
with or without Hearing Impairment**

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**In partial fulfilment of the requirements for the degree of**

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**APPROVAL**

We the under signed certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled- **“Receptive Vocabulary Skills of 5-7 years old Bangla Speaking Children with or without Hearing Impairment.”**

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## **Declaration**

I am Nisterin Dirbana declare that, the study will not be harmful for the participants. Then I would like to ensure that all data and literature were stated correctly. In that case all discussion of this research project is mine and I am only responsible for any mistake in whole study.

Signature

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**Dedication**

Dedicated to my beloved parents and family members .....

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## Glossary of Term

DOB : Date of Birth

HI : Hearing impairment

NH : Normal hearing

PPVT : Peabody Picture Vocabulary Test

RVS : Receptive Vocabulary Score

SPSS : Scientific Package for the Social Scientist

SAHIC: Social Assistance for Hearing Impaired Children

WHO : World Health Organization

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## Executive summary

### **Introduction**

Vocabulary is an essential part and building blocks of language. It facilitates of receptive language acquisition and generally it helps to elicit expressive language of a child (Himmel, 2008). Many factors influence on child's vocabulary development. Hearing is one of them and it is one of the core skills of language acquisition (The Importance of Listening, n.d). Children with hearing impairment have difficulties at all the layers of vocabulary knowledge (Effects of Hearing Loss on Development, 2014). Children with hearing impairment acquisition of receptive vocabulary are at risk of delayed receptive and expressive communication skills such as speech and language (Himmel, 2008). In this study investigator intended to find out the receptive vocabulary skills between typically developing children and children with hearing impairment (5-7 years).

### **Objective**

The main objective of the study was to compare the receptive vocabulary development between typically developing children and children with hearing impairment (5-7 years).

### **Methodology**

The design of the study was cross sectional study design. Data was collected from preschool of 'Rosi Flower Integrated Pre-School for Hearing Impaired Children' of SAHIC for children with hearing impairment and William Marie Taylor School for typically developing children in Dhaka city. The participants were 30, 15 were typically developing children and 15 were children with hearing impairment and age range was 5 to 7 years. In this study, purposive sampling method was used to select the sample. Investigator used The Peabody Picture Vocabulary Test (PPVT-III) to collect the data. Investigator did a pilot study on Bangladeshi children from 2 age groups for ensuring data collection tool according to Bangladeshi perspective. Data was analyzed by descriptive statistical techniques.

## **Results**

From this study found that 5-6 years and 6-7 years of typically developing children average receptive vocabulary mean score was 66.71 and 87.12. On the other hand 5-6 years and 6-7 years children with hearing impairment mean score was 13 and 29. For both age groups of typically developing children achieved higher mean score than children with hearing impairment. In case of noun, verb and adjective score children with hearing impairment were achieved lower score than their typically developing children. So this study showed that hearing impairment had significant impact on children's vocabulary development.

## **Conclusion**

From different research it was quite clear that hearing impairment has significant impact on child's vocabulary development. In this study, it was also observed that children with hearing impairment had delayed in vocabulary development including noun, verb and adjective than the vocabulary development of typically developing children. Although there were many limitations to conduct the research, but hopefully it would be resource for SLT department in Bangladeshi context.

## 1.1 Introduction

Language development is a process starting early in human life and continues throughout life. It is key to communicate with others and the part of the larger process of communication (Owens, 2011).

Infants start without language, gradually they can learn to communicate and use language from environment. Receptive language follows predictable pattern, initially a child listen a word, then recognize the word's meaning, and then begins to respond to request or follow the command according to the word's meaning (Hoff, 2006). Vocabulary is the building blocks of language. It facilitates receptive language acquisition and generally it helps to elicit expressive language (Himmel, 2008).

Many factors that influences child's communication and language development. Hearing is one of them and it is core skill of language acquisition (Pintner and Paterson, 1961). Infants naturally acquire their native vocabulary from speech heard in their home environment. But when a child born with hearing impairment, he/she faces difficulty to receive vocabularies. The earlier hearing loss occurs in a child's life, the more serious the effects on the child's language development (The Importance of Listening, n.d). They have difficulties at all the layers of vocabulary knowledge (Marschark, 2001).

The acquisition of receptive vocabulary of children with hearing impairment are at risk of delayed development (Himmel, 2008). The language deficit causes learning problems that result in reduced academic achievement of children with hearing impairment (Effects of Hearing Loss on Development, 2014). Regarding this, the study aims to find out the receptive vocabulary skill of 5-7 years old Bangla speaking children with or without hearing impairment.

## **1.2 Background and Literature Review**

Vocabulary is the basis for learning language (Marschark, 2001). Young children will learn vocabulary directly relevant to their life experience and environment. Vocabulary development does not stop once a child can talk. In fact, children learn many new words once they start reading and going to school (Prezbindowski and Lederberg, 2003).

Vocabulary acquisition is important not only as a useful index of verbal learning and achievement but also for vocabulary knowledge is correlated with many measures of word recognition, speech comprehension, and reading in children with normal hearing and children with hearing impairment (Fagan and Pisoni, 2010). If a child has a limited vocabulary they may have difficulties in understanding what is being said to them or difficulties in expressing themselves.

Vocabulary refers to the words a child is able to understand that is receptive vocabulary or express that is expressive vocabulary (Schorr, Roth & Fox, 2008). Receptive vocabulary development is important for understanding the world and to provide a critical building block for language processing abilities and competence (Gathercole, Willis, Emslie and Baddeley, 1992). The emergence as well as the elaboration of grammar is highly dependent upon receptive vocabulary size (Fagan and Pisoni, 2010). Young children have a remarkable facility to acquire new vocabulary. In early word learning, infants build their receptive vocabulary slowly but throughout their school years, children continue to build their receptive vocabulary rapidly. Particularly children begin to learn abstract words (Marschark, 2001). Receptive vocabulary size and timing of fast word learning are important predictors of subsequent language milestones (Gathercole, Willis, Emslie and Baddeley, 1992).

Receptive vocabulary development is a very important facet of oral language acquisition and generally precedes expressive vocabulary. So the children with delayed acquisition of receptive vocabulary are at risk of delayed expressive vocabulary development, which in turn significantly delays the acquisition of spoken language skills and, ultimately, compromises academic achievement (Himmel, 2008). Children acquire vocabulary from their surrounding environment. According to Elfenbein, Hardin & Davis (1994) there are many factors that influence children's vocabulary development from environment. Such

as socio-economic status factors, parent's educational level, number of siblings, birth order, and disability (Chaimay, Thinkhamrop and Thinkhamrop, 2006). But hearing is a factor that influences children's vocabulary acquisition. The language input that a child with hearing impairment also receives across contexts such as home, school, and community (Prezbindowski and Lederberg, 2003). But the children with hearing impairment with hearing parents typically have difficulty acquiring new words, either spoken or signed, and they require both visual and auditory clues to meaning. As hearing impairment is a second commonest form of disability in Bangladesh, so many children have difficulty of language development due to their hearing impairment (National Strategy on Prevention of Deafness and Hearing Impairment in Bangladesh, 2011). In 2012, WHO estimated that in South Asia, 27% people have some degree of hearing impairment (WHO global estimates on prevalence of hearing loss, 2012). In Bangladesh, 33% people have some degree of hearing impairment in either of the ear (National Strategy on Prevention of Deafness and Hearing Impairment in Bangladesh, 2011). Children with hearing loss learn concrete words like cat, jump, five, and red more easily than abstract words like before, after, equal to, and jealous. They also have difficulty with function words like the, an, are, and a. Children with hearing loss have difficulty understanding words with multiple meanings. For example, the word bankcan mean the edge of a stream or a place where we put money (Fagan and Pisoni, 2010). Children with profound sensorineural hearing loss are not able to hear spoken language in their environments without amplification and are therefore are at a distinct disadvantage in developing receptive vocabulary.

Delays in deaf children's vocabulary development are apparent from an early age. One study reported that, during 15 months of intensive speech instruction, a 30 month old deaf child was able to learn one word a month. By contrast, hearing children spontaneously learn from 60–120 words a month between 30 and 48 months of age (Marschark, 2001). In typical development, at the age of 5 years child has receptive vocabulary of 10,000 or more words (Sheridan, 1997). At the age of 6 years of life, children will have acquired 8,000 root words (Lieu, et al., 2010). At the age of 7 years, child has receptive vocabulary



20,000 to 24, 000 words (Owens, 2001). According to Himmel (2008), the receptive vocabulary development children with hearing impairment are slow rate than children with normal hearing of the same age such as generally children with moderate hearing losses (i.e., 56–70 dB) show a 1-year delay in vocabulary development compared to age-matched children with no hearing loss. Children with severe hearing losses (71–90 dB) show a 3-year age in vocabulary development. In turn, profound hearing loss (<91 dB) creates a significant delay in vocabulary development (Figueras, Edwards and Langdon, 2008).According to some studies, children with hearing impairment using oral or total communication progress in receptive vocabulary over time but not at the same rate as hearing children (Itano, Sedey and Mehl, 1998).

Early detection and therapy of infant hearing loss seem to have an overall effect on speech and language outcomes (Himmel, 2008). The child with hearing impairment is almost entirely dependent upon formal education in acquiring language (Pntner and Paterson, 1961).

In Bangladeshi context there is a study that has been conducted on expressive language development of children with hearing impairment by Nirafat Anam but there is no study has been conducted on receptive vocabulary development of typically developing children and children with hearing impairment. So it is essential to assess the vocabulary development of typical pattern as well as hearing impairment pattern in the same age.

### **1.3 Significance of the study**

In Bangladeshi context, there is no study has been conducted on receptive vocabulary development of typically developing children and children with hearing impairment. In English language there are some vocabularies which are not similar with Bangladeshi children's vocabularies, or some vocabularies may have developed rapidly than Bangla language. So it is hard to find out about actual receptive vocabulary development of Bangla speaking children. Investigator hoped that this study would be provided a lot of useful information about receptive vocabulary development of typical developing children as well as children with hearing impairment at the age of 5 to 7 years. Speech and Language therapist work with child's speech and language delay or disorder. It is

essential to know the vocabulary development both of typically developing with hearing impairment. So it helped SLT to provide an assessment of receptive vocabulary test and it was easy to provide intervention program for child with hearing impairment that has difficulty with receptive vocabulary. It was hope that this work greatly assisted the SLTs, the teacher of the deaf, parents and other relevant professionals who involved in the field of health, disability, education in Bangladesh.

#### **1.4 Operational definition**

**Keyword:** Receptive vocabulary skill, Hearing impairment, Typical development

##### **Receptive Vocabulary Skill**

Receptive vocabulary skill is a store house of words of a person which he or she can understand, uses and process in him or her everyday life (Receptive vocabulary development, 2014). It refers to all the words that can be understood by a person, including spoken, written, or manually signed words (Hoff, 2006).

In this study receptive vocabulary skill means the ability of a child to understand spoken words. Receptive vocabulary is generally larger than expressive vocabulary so it appears to develop before expressive vocabulary over the course of early language development.

##### **Hearing Impairment**

Hearing is one of the five senses. Hearing gives to access sounds in the world around such as people's voices, their words, a car horn etc. Hearing impairment means any level or grade of hearing loss (Anam, 1996). It is an essential requirement of an individual to perform daily activities. It is both complete and partial loss of the ability to hear sound (Deafness and Hearing Loss, 2014).

In this study hearing impairment means any difficulty or inability to hear sounds. It affects persons of all ages and may occur at any time from infancy through old age.

## **Typical Development**

Typical development is a process which developed step by step in child's life according to child's age such as physical, cognitive, social, communication, and adaptive (Elfenbein, Hardin and Davis, 1994). A child who is described as having developmental delays would be a child who performs significantly below the average performance of a large group of children of the same age in one or more of the developmental areas (Hoff, 2006).

In this study typical development means a normal development which progress according to child's age. This progress is similar to the majority of children their same age within their same culture.

### **1.5 Aim**

To compare the receptive vocabulary skills between typically developing children and children with hearing impairment (5-7 years).

### **Objective**

- To investigate the receptive vocabulary skills of typically developing Bangla speaking children (5-7 years).
- To investigate the receptive vocabulary skills of Bangla speaking children with hearing impairment (5-7 years).
- To investigate the receptive vocabulary skills of typically developing Bangla speaking children and children with hearing impairment (5-7 years).

### **2.1 Study Design**

The design of the study was cross sectional study design. Under the quantitative method, the cross sectional design is used and this design studies are carried out at one time point or over a short period of time (Bailey, 1997). In cross-sectional study design no manipulation is performed to investigate variables and collect data objectively (Hicks, 1999). As it is an observational study and researcher record information without manipulating the study environment. It is that it can compare different population groups at a single point in a time. So this method was appropriate.

### **2.2 Study Place**

This study was conducted in preschool of ‘Rosi Flower Integrated Pre-School for Hearing Impaired Children’ of (SAHIC) for children with hearing impairment and William Marie Taylor School for typically developing children. Rosi Flower Integrated Pre-School for Hearing Impaired Children of (SAHIC) is the pre-school level organization for the children with hearing impairment. There are many students with hearing impairment at SAHIC. As investigator compared vocabulary performance between typical developing and hearing impairment group so it was necessary to collect data from same area in Bangladesh. So to conduct the study the investigator selected William Marie Taylor School and Rosi Flower Integrated Pre-School for Hearing Impaired Children of (SAHIC) School in Dhaka.

### **2.3 Study Population**

Study population was Bangla speaking 5 to 7 years typically developing children and children with hearing impairment in this research project. Investigator chose 5 to 7 years because at this age, children start to go to school. As in early word learning, infants build their vocabulary slowly but throughout their school years, children continue to build their vocabulary rapidly (Vocabulary development, 2014). So it was important to know the receptive vocabulary acquisition of school going children both of typical developing and children with hearing impairment and compare with one another.

## **2.4 Sample Size**

In Bangladesh, there no prevalence is available for children with hearing impairment and for typically developing children. According to Hicks (1999), small numbers of participants are good to manage for the investigator and to give reliable results. For this reason investigator selected 30 children, where 15 children were typically developing children and 15 were children with hearing impairment.

## **2.5 Sampling Technique**

In this study, purposive sampling method was used to conduct the study. It is one of the types of non-probability sampling and most of the time in quantitative research, purposive sampling is selected (Hicks, 1999). It is the easiest, cheapest and quicker method of subject selection (Bailey, 1997). In this study samples are purposively selected so researcher used purposeful sampling to choose sample.

## **2.6 Inclusion criteria**

- Age rang: 5 to 7 years.
- Child's first language was Bangla.
- School going children.
- Both male and female was included.
- Any type and degree of hearing impairment was included.

## **2.7 Reason for inclusion criteria**

In early age, infants build their vocabulary slowly but throughout their school age, children continue to build their vocabulary rapidly. So school going children was included.

## **2.8 Exclusion criteria**

- If any child was not responded for first 15 minutes and not motivate to involve himself/herself in the task then he/she was excluded.

- Without hearing impairment other disease was excluded.
- The child with Cochlear implanted was excluded.

## **2.9 Reason for exclusion criteria**

If investigator spent more time here, so it would be hard for her to complete the data collection during dissertation period.

Childhood disease and family history have significant impact on language development. So without hearing loss no other disease was detected.

It was very much rare to find out the children with Cochlear implanted in Bangladesh. So Cochlear implanted was excluded.

## **2.10 Data Collection Tool**

Investigator used The Peabody Picture Vocabulary Test (PPVT-III) to collect the data. The Peabody Picture Vocabulary Test is one of the most commonly used assessment tests that measure receptive vocabulary. It developed by Lloyd M. Dunn and Leota M. Dunn. It measures the receptive processing of examinees from 2.5 to over 90 years old. It has two parallel forms as Form IIIA and Form IIIB. Investigator used Form IIIB form collecting data. This form contains four training items and 96 test items group into 8 sets of 12 items each. In form IIIB, noun words were 62, verb words were 24 and adjectives words were 10 in total 96 items. In this tool basal set rule is one or no errors in a set. The ceiling set rule is eight or more errors in a set. At the end of each item set, record the number of errors per set and count the total errors. Record the number of the last item in the ceiling set. Subtract from it the total number of errors which is raw score. Investigator did not take permission from it's author because investigator not modify anything of this tool.

## **2.11 Data Collection Procedure**

At first investigator introduced herself to parents or teachers of children and explain the aim and objectives of research project. When the participants were fulfill the inclusion criteria then permission was taken from parents. Data was collected in school

environment. Before data collection the investigator selected a quiet place where participant feel comfort and were able to give adequate attention during data collection. Investigator spent approximately 10-15 minutes to establish rapport with each child. Then investigator collected demographic information such as child's name, age, DOB, parents name etc. Then investigator showed line drawing picture by producing related word using PPVT, then children pointed one picture from other pictures which was match with investigator's producing word. Then investigator collected children's response. When child respond eight or more errors in a set, then he or she was elicited and then investigator counted his or her score.

### **2.12 Pilot Study**

According to Hicks (1999) pilot study is necessary because it helps the investigator to ensure whether the total procedures of the project are in right track or not. So before conducting the final data collection, investigator conducted pilot study on 5 children from 5 to 7 years group, who were not present in final study sample group. Investigator found that there were some categories of words which were not appropriate in Bangladeshi perspectives for children such as places, animals etc. So in final study investigator was omitted those categories in 'data collection tool' according to Bangladeshi perspectives based on findings of pilot study.

### **2.13 Data Analysis**

Data was analyzed by descriptive statistical techniques (i.e. percentage, mean & standard deviation) using SPSS software. It is good to give "the percentages and means for all the criteria to understand subjects and variables and this method is also very useful in quantitative research." (Bailey, 1997). According to Hicks (1999) there are many ways to show descriptive data, such as table, pie chart and bar graph. In this study data was presented in table and bar graph.

### **2.14 Ethical Consideration**

At first investigator took the approval of the research from the ethical committee. Then investigator got the permission from course coordinator of department of Speech and

Language Therapy to conduct the research project. Consent was taken from parents before conducting the study and investigator explained them about the aim and objectives of research project. Participants will have full rights to withdraw any task any time. Investigator strictly maintained confidentiality in participant's personal information like age, sex, DOB etc. Parent was also informed that this study was not harmful for their children.



### 3.1 Demographic Information of the Participants

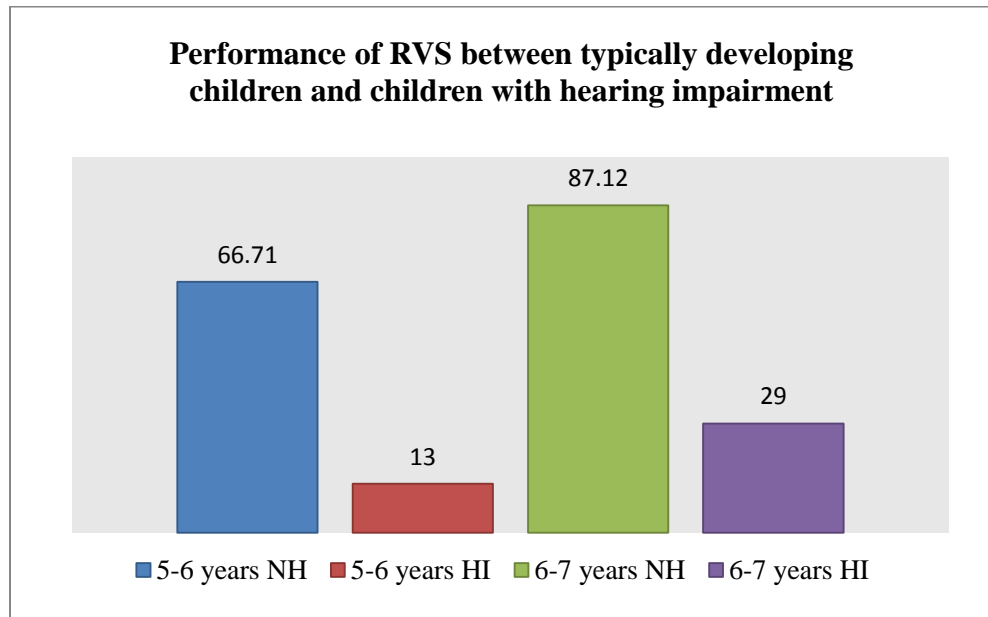
Number of participants	Typically developing children			Children with hearing impairment		
	Age	Number of Typically developing children	Frequency of boy and girl	Age	Number of children with hearing impairment	Frequency of boy and girl
14	(5-6) years	7	3:4	(5-6) years	7	4:3
	(6-7) years	8	5:3	(6-7) years	8	4:4

**Table 1: Demographic Information of the Participants**

In this study participants were 30 children, 15 were typically developing children and 15 were children with hearing impairment. Age range was (5-7) years. Typically developing (5-6) years participants were 7. Among them boy and girl participants ratio was 3:4. In case of children with hearing impairment (5-6) years participants were 7 and boy and girl participants ratio was 4:3. Typically developing (6-7) years participants were 8. Among them boy and girl participants ratio was 5:3. In case of children with hearing impairment (6-7) years participants were 8 and boy and girl participants ratio was 4:4.

### 3.2 Mean of total receptive vocabulary in different age group of typically developing children and children with hearing impairment

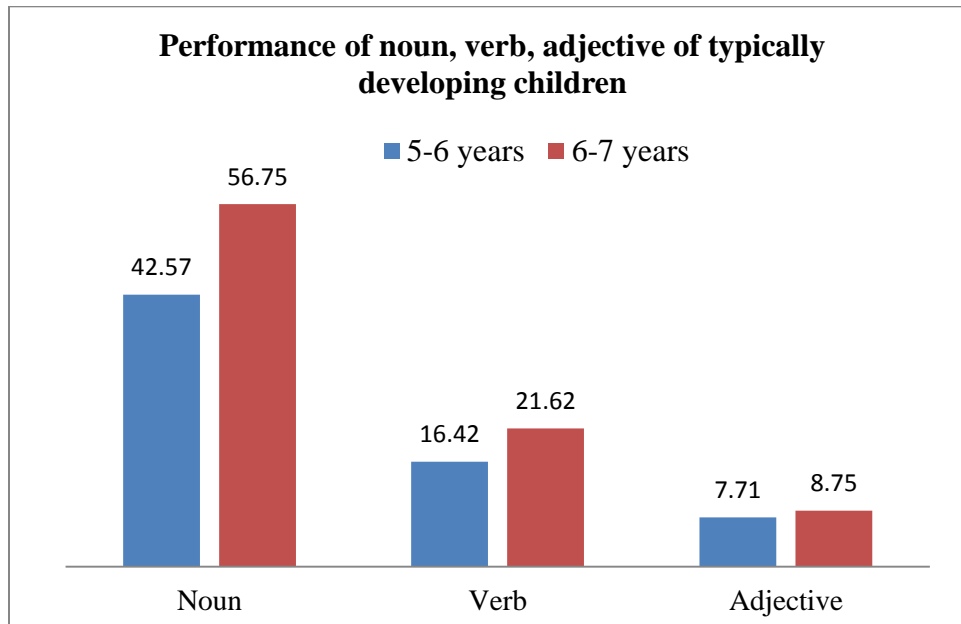
In this study data was analyzed by descriptive statistics and found the mean for all age group of both typically and hearing impairment group in receptive vocabulary development. The mean of all age group of both typically and hearing impairment group is given in the following graph.



**Figure 1.1: Mean of total receptive vocabulary in different age group**

This data showed that using (PPVT) in 5-6 years age group receptive vocabulary mean was 66.71 of typically developing and 13.00 of children with hearing impairment among 96 words including nouns, verbs, adjectives words. In 6-7 years age group receptive vocabulary mean was 87.12 of typically developing and 29.00 of children with hearing impairment among 96 words including nouns, verbs, adjectives words. In this score both age groups, group 5-6 years and group 6-7 years of typically developing children achieved higher score than children with hearing impairment.

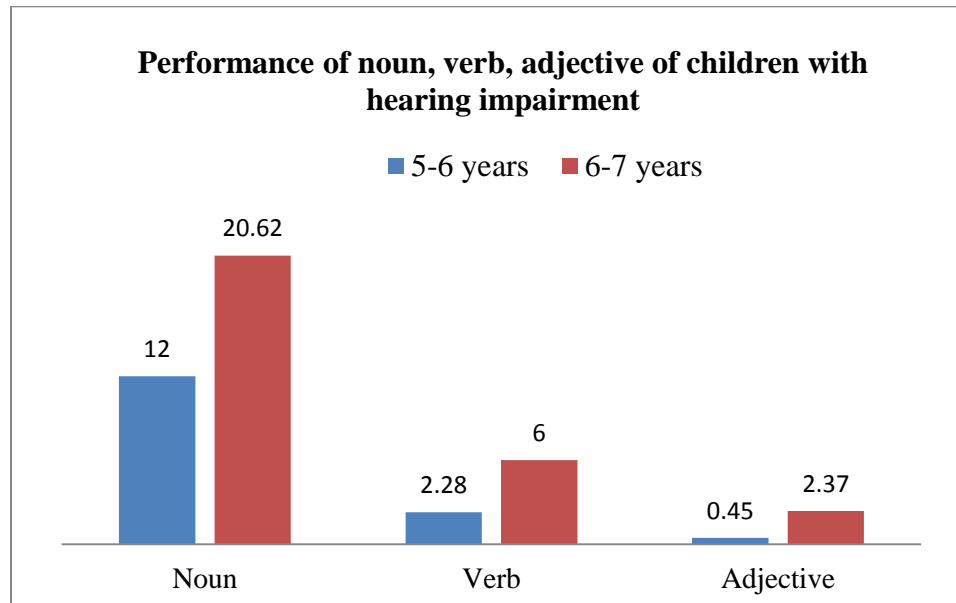
### 3.3 Mean of receptive vocabulary (noun, verb, adjective) in different age group of typically developing children



**Figure 1.2: Noun, verb and adjective score in different age groups of typically developing children**

This figure showed that using (PPVT) in 5-6 years of typically developing children's noun mean was 42.57 and in 6-7 years noun mean was 56.75 among 62 noun words. In case of 5-6 years of typically developing children's verb mean was 16.42 and in 6-7 years verb mean was 21.62 among 24 verb words. On the other hand among 10 adjective words, in 5-6 years of typically developing children's adjective mean was 7.71 and in 6-7 years adjective mean was 8.75. In this score showed that for noun, verb and adjective mean score of 6-7 years age group of typically developing children achieved higher score than 5-6 years age group of typically developing children.

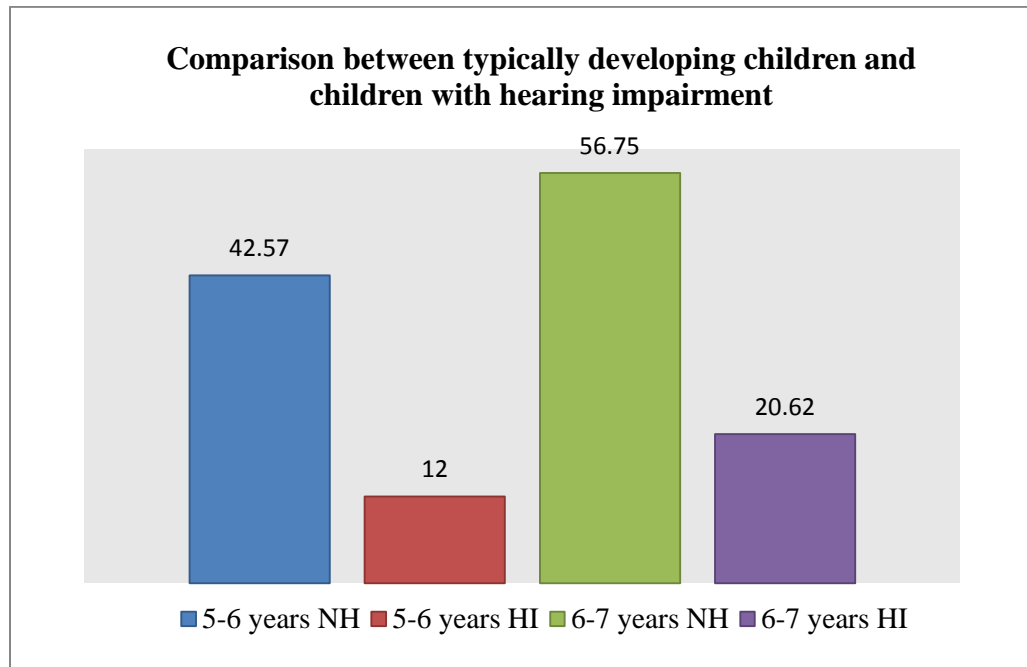
### 3.4 Mean of receptive vocabulary (noun, verb, adjective) in different age group of children with hearing impairment



**Figure 1.3: Noun, verb and adjective score in different age groups of children with hearing impairment**

This figure showed that using (PPVT) in 5-6 years of children with hearing impairment noun mean was 12 and in 6-7 years noun mean was 20.62 among 62 noun words. In case of 5-6 years of children with hearing impairment verb mean was 2.28 and in 6-7 years verb mean was 6 among 24 verb words. On the other hand among 10 adjective words, in 5-6 years of children with hearing impairment adjective mean was 0.45 and in 6-7 years adjective mean was 2.37. In this score showed that for noun, verb and adjective mean score of 6-7 years age group of children with hearing impairment achieved higher score than 5-6 years age group of children with hearing impairment.

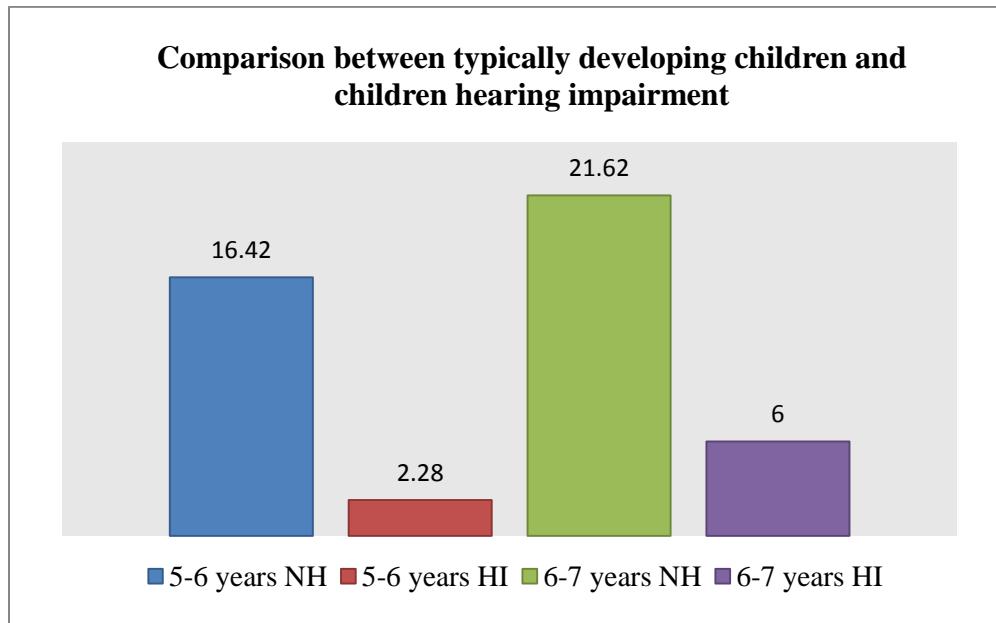
### 3.5 Performance of Noun (receptive) in different age ranges of different groups



**Figure 1.4: Noun score in different age ranges of different groups**

This figure showed that in 5-6 years age receptive noun mean score was 42.57 in typically developing children and 12 in children with hearing impairment among 62 noun words. In 6-7 years age receptive noun mean score was 56.75 in typically developing children and 20.62 in children with hearing impairment. Here both age group of 5-6 years and 6-7 years of typically developing children achieved higher score than children with hearing impairment for noun words.

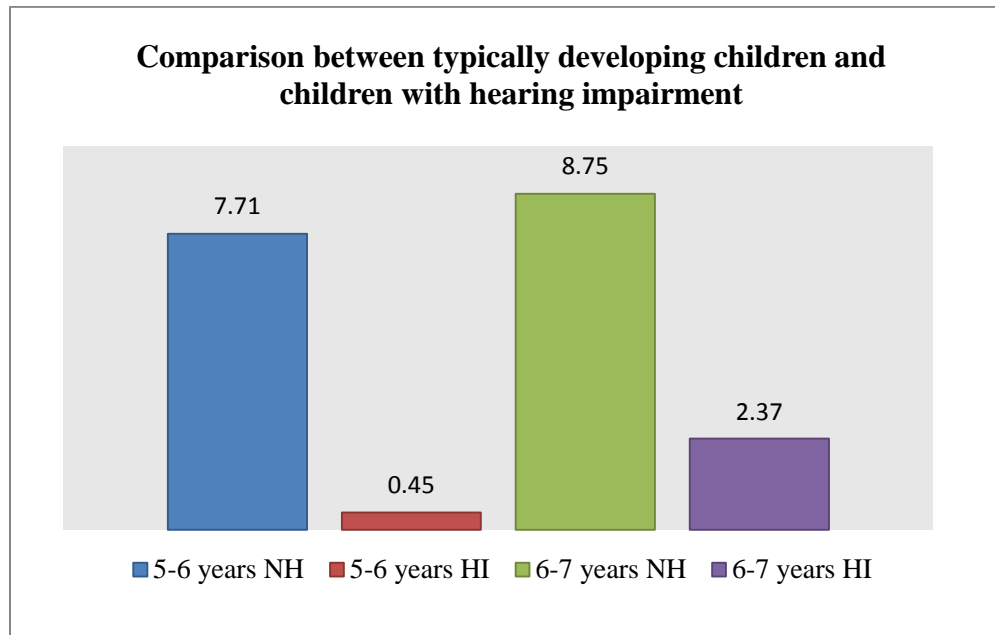
### 3.6 Performance of Verb (receptive) in different age ranges of different groups



**Figure 1.5: Verb score in different age ranges of different groups**

This figure showed that in 5-6 years age receptive action verb mean score was 16.42 in typically developing children and 2.28 in children with hearing impairment among 24 verb words. In 6-7 years age receptive verb mean score was 21.62 in typically developing children and 6 in children with hearing impairment. Here both age group of 5-6 years and 6-7 years of typically developing children achieved higher score than children with hearing impairment for verb words.

### 3.7 Performance of Adjective (receptive) in different age ranges of different groups



**Figure 1.6: Adjectives score in different age ranges of different groups**

This figure showed that in 5-6 years age receptive adjective mean score was 7.71 in typically developing children and 0.45 in children with hearing impairment among 10 adjective words. In 6-7 years age receptive adjective mean score was 8.75 in typically developing children and 2.37 in children with hearing impairment. Here both age group of 5-6 years and 6-7 years of typically developing children achieved higher score than children with hearing impairment for adjective words.

#### 4.1 Discussion

In study examined the receptive vocabulary skill of 5-7 years typically developing children and children with hearing impairment and found that hearing impairment had a greater impact on child's receptive vocabulary development. In average, the receptive vocabulary including noun, verb and adjective score of typically developing children was higher than children with hearing impairment.

In this study, 5-6 years and 6-7 years typically developing children receptive vocabulary including noun, verb and adjective score was higher than children with hearing impairment. According to Himmel (2008) researcher has said that children with permanent hearing loss, without other disabilities, have problems achieving an age appropriate vocabulary. Schorr, Roth & Fox, (2008) conducted a research and found that the receptive vocabulary test results of children with moderate sensorineural hearing loss were consistently poorer than those of normal-hearing children. There were significant difference between children with hearing impairment and normal hearing children (Moeller, 2000; Hayes, Grees, Treiman and Moog, 2009). From this study found the similar result that hearing impairment had significantly impact on receptive vocabulary development. As vocabulary status in infancy and childhood is highly related to the child's language learning environment and children build their vocabulary from hearing sounds. So children's hearing ability has great impact on receptive vocabulary development.

In this study, in 6-7 years both typically developing children and children with hearing impairment receptive vocabulary noun, verb and adjective score was higher than 5-6 years children. According to Hoff (2006) children's vocabulary development is increased according to their chronological age. From this study Bangla speaking children's score indicated the similar result with English speaking children.

According to the findings both 5-6 years and 6-7 years of typically developing children and children with hearing impairment noun score was greater than verb score and verb



score was greater than adjective score. According to Chaimay, Thinkhamrop & Thinkhamrop (2006) children acquire nouns more easily and earlier than verbs because the concepts easily represented by nouns to access than represented by verbs. According to Fagan & Pisoni (2010) children acquired more nouns and verbs than adjectives in part because parents used twice as many nouns and verbs than adjectives in speech to their children. According to Schorr, Roth & Fox (2008) children with hearing loss learn concrete words such as noun word more easily than abstract word such as adjective word. From this study found the similar result with the previous research. So in Bangladeshi context may be parents use noun word more than verb word and adjective word very few with their children. For this noun word is also developed earlier than verb word and verb word is also developed earlier than adjective word in Bangla speaking children.

In this study, both 5-6 years and 6-7 years of typically developing children achieved higher score than children with hearing impairment for noun words. According to Marschark, (2001) found that receptive vocabulary development in children with congenital hearing losses generally reveal them to have significant delays relative to hearing age-mates. From this study result indicated that there was significant difference between typically developing children and children with hearing impairment for noun score in the context of Bangladesh.

According to the findings, both 5-6 years and 6-7 years of typically developing children achieved higher score than children with hearing impairment for verb words. According Svirsky et al. (2000) found that most children who are born profoundly deaf or who become deaf, they significantly behind their normal-hearing peer. From this study result indicated that there was significant difference of verb score between typically developing children and children with hearing impairment. In Bangladeshi context may be family remain involve less time with children with hearing impairment so the children with hearing impairment can not build their vocabulary appropriately.

In this study, both 5-6 years and 6-7 years of typically developing children achieved higher score than children with hearing impairment for adjective words. Several studies using the PPVT have shown that deaf children on average have smaller vocabularies

including noun, verb and adjective score than typically developing children and that the deaf children do not catch up over time (Hayes, Grees, Treiman and Moog, 2009). From this study result indicated that there was significant difference of adjective score between typically developing children and children with hearing impairment. In Bangladeshi context there information about the quality of hearing impairment treatment is not available. Perhaps therapy is required over a longer period in children with hearing impairment before changes in vocabulary become apparent. For this reason may be the children with hearing impairment showed the delay of vocabulary score than typically developing children.

Sample was in this study 30 children & it were small sample that there is a chance to loss the generalization of the study.

1. The sample was not selected randomly, so it would not be possible to generalization the findings. As the time was short it would not possible to take a representative sample.
2. The assessor of the study was the investigator. So the findings can be different if other professionals do the assessment.
3. In this study, it was not possible to arrange participants with same severity of hearing impairment. So that some children with severe hearing impairment was not improving as children who had moderate hearing impairment.
4. There are limited literatures found in Bangladesh context. Limited international research was found in this setting.

If anyone in future wants to conduct a study regarding Language Development of Typical developing children and children with hearing impairment they can follow the below mentioned recommendation:

1. Similar study should be conducted on large number of participants in different areas in Bangladesh.
2. Further study needs to be conducted on different age groups.
3. Further study should be conducted on expressive vocabulary development of typical developing and children with hearing impairment.
4. Further study should be conducted on language development of typical developing and children with hearing impairment.
5. Further study should be conducted on receptive vocabulary development of children with cochlear implant and children with hearing impairment with aided.
6. Purposive sampling method was used to select participants and study place. Further study can be conducted with a wide range and large participant size.

This study would be hopeful in Bangladesh context for Speech & Language Therapist as well as other professionals. The following implications are given below:

1. Hopefully this study may encourage other SLT students or other professionals who are interested in language are to find out the other risk factors which are affecting in language development.
2. This study was conducted for 5 to 7 years children by using a standard tool according to age appropriate language development milestone. So it may helpful for SLT department as well as other relevant professionals in the context of Bangladesh.
3. The findings of study would provide a visible image of the effect of the hearing impairment on children's receptive vocabulary development that children with hearing impairment's receptive vocabulary development is age appropriate or not.
4. The information of the study will be helpful for diagnosis and intervention of children with hearing impairment and language impairment.

Children learn language through their environment. At first child hears sound, then they recognize the sound's meaning and then they learn the meaning. Thus children build their vocabulary and gradually it is developed as a language. But if this hearing ability is interrupted, child's storage of vocabulary is hampered. Hearing loss among children is a relatively common and serious problem that can have a significant impact on their vocabulary development. In past many studies had been conducted that the effect of hearing impairment of child's vocabulary development.

From different research it is quite clear that hearing impairment has significant impact on child's receptive vocabulary development. In this study, the children of typically developing were score higher than children with hearing impairment in receptive vocabulary development. This study attempted to know about receptive vocabulary development of typically developing children as well as children with hearing impairment. Such information is important for both typically developing children and children with hearing impairment.

Although in the study was different limitation, the result might be helpful to find out the vocabulary development pattern of typical developing children as well as children with hearing impairment in context of Bangladesh.

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## Annexure: 1

### Permission Letter for Research Project Conduction

Date: 22. 09. 2014

To

Head of the Department (Acting),  
Department of Speech & Language Therapy  
Bangladesh Health Professions Institute (BHPI)  
CRP-Chapain, Savar, Dhaka.

Subject: Prayer for seeking permission to conduct the research project.

Sir,

With due respect to state that I am a 4<sup>th</sup> year student of B.Sc. in Speech and Language Therapy Department of Bangladesh Health Professions Institute, the academic institute of Centre for the Rehabilitation of the Paralyzed (CRP). I am sincerely seeking permission to conduct my research project as the partly fulfillment of the requirements of degree of B.Sc. in Speech and Language Therapy. The title of my research is, "Comparison of receptive vocabulary development of typical developing children and children with hearing impairment (5-7 years) on the Peabody Picture Vocabulary Test". The main objective of the study is to find out the comparison of receptive vocabulary development of typical developing children and children with hearing impairment (5-7 years) on the Peabody Picture Vocabulary Test.

So, I therefore pray and hope that you would be kind enough to grant me the permission of conducting the research and will help me to complete a successful study as a part of my course.

Your obediently,

Nisterin Dirbana

4<sup>th</sup> year, B.Sc in Speech and Language Therapy,  
Bangladesh Health Professions Institute (BHPI)  
CRP-Chapain, Savar, Dhaka.

Course Coordinator	Signature and Comments
Md. Jahangir Alam Head of the Department (Acting), Department of Speech & Language Therapy BHPI, CRP, Chapain, Savar, Dhaka	Permitted to conduct the study. <i>Jahangir</i> 22/9/14

## Annexure: 2

### Permission Letter for data collection

Date: 22. 09. 2014

To

Head of the Department (Acting),  
Department of Speech & Language Therapy  
Bangladesh Health Professions Institute (BHPI)  
CRP-Chapain, Savar, Dhaka.

Subject: Prayer for seeking permission to data collection as part of research project conduct.

Sir,

With due respect I state that I am a 4<sup>th</sup> year student of B. Sc in Speech and Language Therapy Department of BHPI, the academic institute of CRP. I am sincerely seeking permission to conduct my research project as the partial fulfillment of the requirement for the degree of B. Sc in Speech and Language Therapy. The title of my research project is "Comparison of receptive vocabulary development of typical developing children and children with hearing impairment (5-7 years) on the Peabody Picture Vocabulary Test". The main objective of study is to find out the comparison of receptive vocabulary development of typical developing children and children with hearing impairment (5-7 years) on the Peabody Picture Vocabulary Test.

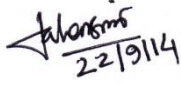
Now I am seeking your kindness to approve me to start data collection as part of the research project conduction and I would like to assure that anything of my research project will not harmful for the participants.

So, I therefore pray and hope that your honor would be kind enough to grant me the permission of data collection and this permission will help me to conduct a successfully study as a part of my course.

Your obediently,

Nisterin Dirbana

4<sup>th</sup> year, B.Sc in Speech and Language Therapy,  
Bangladesh Health Professions Institute (BHPI)  
CRP-Chapain, Savar, Dhaka.

Course Coordinator	Signature and Comments
Md. Jahangir Alam Head of the Department (Acting), Department of Speech & Language Therapy BHPI, CRP, Chapain, Savar, Dhaka	You can proceed for your data collection.  22/9/14

### Annexure: 3



বাংলাদেশ হেল্থ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই)  
BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)  
(The Academic Institute of CRP)

CRP-Chapain, Savar, Dhaka, Tel: 7745464-5, 7741404, Fax: 7745069  
BHPI-Mirpur Campus, Plot-A/5, Block-A, Section-14, Mirpur, Dhaka-1206. Tel: 8020178,8053662-3, Fax: 8053661

তারিখ : ১৮.১০.২০১৪

প্রতি  
অধ্যক্ষ  
সাহিক  
মহাখালী, ঢাকা।

বিষয় : রিসার্চ প্রজেক্ট (dissertation) এর জন্য আপনার প্রতিষ্ঠান সফর প্রসঙ্গে।

জনাব,

আপনার সদয় অবগতির জন্য জানাচ্ছি যে, পক্ষাঘাতগ্রস্তদের পুনর্বাসন কেন্দ্রে-সিআরপি'র শিক্ষা প্রতিষ্ঠান বাংলাদেশ হেল্থ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই) ঢাকা বিশ্ববিদ্যালয় অনুমোদিত বিএসসি ইন স্পীচ এন্ড ল্যান্ডুয়েজ থেরাপি কোর্স পরিচালনা করে আসছে।

উক্ত কোর্সের ছাত্রছাত্রীদের কোর্স কারিকুলামের অংশ হিসাবে বিভিন্ন বিষয়ের উপর রিসার্চ ও কোর্সওয়ার্ক করা বাধ্যতামূলক।

বিএইচপিআই'র ৪র্থ বর্ষ বিএসসি ইন স্পীচ এন্ড ল্যান্ডুয়েজ থেরাপি কোর্সের ছাত্রী নিস্তেরিন দিরবানা তার রিসার্চ সংক্রান্ত কাজের জন্য আগামী ১৮.১০.২০১৪ ইং তারিখ থেকে ৩১.১০.২০১৪ তারিখ পর্যন্ত আপনার প্রতিষ্ঠানে সফর করতে আশ্রয়ী।

তাই তাকে আপনার প্রতিষ্ঠান সফরে সার্বিক সহযোগীতা প্রদানের জন্য অনুরোধ করছি।

ধন্যবাদান্তে

*Jahangir*

মোঃ জাহাঙ্গীর আলম  
বিভাগীয় প্রধান  
স্পীচ এন্ড ল্যান্ডুয়েজ থেরাপি বিভাগ  
বিএইচপিআই।



*Jahangir*  
১৮/১০/১৪

*Jahangir*  
১৮/১০/১৪



## Annexure: 4



# বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই) BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI) (The Academic Institute of CRP)

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তারিখ : ১৫.১০.২০১৪

প্রতি

অধ্যক্ষ

উইলিয়াম এন্ড মেরি টেইলর স্কুল

সিআরপি, সাভার, ঢাকা।

বিষয় : রিসার্চ প্রজেক্ট (dissertation) প্রসঙ্গে।

জনাব,

বিএইচপিআই'র ৪র্থ বর্ষ বিএসসি ইন স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি কোর্সের ছাত্রী রোকসানা আক্তার ও নিস্তেরিন দিরবানাকে তাদের রিসার্চ সংক্রান্ত কাজের জন্য আগামী ১৮.১০.২০১৪ তারিখ থেকে ৩১.১০.২০১৪ তারিখ পর্যন্ত সময়ে আপনার নিকট প্রেরন করা হলো।

তাই তাদেরকে সার্বিক সহযোগীতা প্রদানের জন্য অনুরোধ করছি।

ধন্যবাদান্তে

মোঃ জাহাঙ্গীর আলম

বিভাগীয় প্রধান

স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপি বিভাগ

বিএইচপিআই।



Permitted for  
Data collection.

20-10-14  
Md. Abdullah Al Zubayer  
Principal (Acting)  
William & Marie Taylor School (WMTS)  
(The Inclusive School of CRP)  
CRP-Savar, Dhaka-1343

## Annexure: 5

### সম্মতিপত্র

আমি নিম্নের দিরবানা ঢাকা বিশ্ববিদ্যালয় চিকিৎসা অনুসন্ধান অন্বেষণ বাংলাদেশ হেলথ প্রফেশনাল ইনস্টিটিউটের ৪র্থ বর্ষের বি. এস. সি. ইন স্পীচ এন্ড ল্যাঙ্গুয়েজ থেরাপী কোর্সের একজন ছাত্রী। বর্ণিত কোর্সের অংশ হিসেবে ‘Comparison of receptive vocabulary development of typical developing children and children with hearing impairment (5-7 years) on the Peabody Picture Vocabulary Test’ শিরোনামে গবেষণাপত্র প্রস্তুত করতে হবে। গবেষণার প্রস্তুতি স্বরূপ (৫-৭) বছরের শিশুদের ভাষার উন্নতি সম্পর্কিত তথ্য সংগ্রহ করা বাঞ্ছনীয়।

এই গবেষণায় অংশগ্রহণকারীর জন্য কোন রকম ঝুঁকির কারণ ঘটবে না। এই গবেষণা সম্পূর্ণভাবে কোর্সের কাজে ছাড়া অন্য কোন উদ্দেশ্যে ব্যবহার করা হবে না এবং গবেষণাপত্র প্রকাশকালে অংশগ্রহণকারীর পরিচয় ও অন্যান্য তথ্যসমূহের গোপনীয়তা রক্ষা করা হবে। অংশগ্রহণকারী শিশুদের পিতা-মাতাগণ যেকোন সময় গবেষণার কার্যক্রম থেকে নিজ সন্তানকে প্রত্যাহার করতে পারবেন।

আমি উপরোক্ত তথ্য সম্পর্কে স্পষ্টভাবে অবগত আছি। এই গবেষণার সুবিদার্থে আমি \_\_\_\_\_ আমার শিশুকে এই গবেষণায় অংশগ্রহণের অনুমতি প্রদান করছি।

শিশুর পিতা/মাতার স্বাক্ষর ..... তারিখ .....

গবেষকের স্বাক্ষর ..... তারিখ .....

**Annexure: 6**

**Informed Consent (English)**

It is to inform you that Nisterin Dirbana, 4<sup>th</sup> year B.Sc. in Speech and Language Therapy course of Bangladesh Health Professions Institute (BHPI) invites:

..... to join as a participant in her project study on- ‘Comparison of receptive vocabulary development of typical developing children and children with hearing impairment (5-7 years) on the Peabody Picture Vocabulary Test’.

In This study as a participant your participation is entirely voluntary and you have right to withdraw consent and discontinue participation in the study at any time. You have right to know information about benefits and risks of the study as a participant. Information from this study will be anonymously coded to ensure confidentiality. Your name and address will not be used in any publication containing the result of the study. The written materials from the study will be eligible to access only the researcher and the supervisor.

I have been informed about the above mentioned and I agree to participate voluntarily.

Participant’s signature/finger print

.....

Date: .....

Researcher’s signature/ finger print

.....

**Annexure: 7**

বাংলা শব্দ তালিকা (PPVT)

**START ages – 2.6-3**  
**Set 1**

Item	Word	Response	Error
১	বিড়াল		<b>E</b>
২	শিশু		<b>E</b>
৩	বিমান		<b>E</b>
৪	দৌড়ায়		<b>E</b>
৫	টাকা		<b>E</b>
৬	দোল খেলে		<b>E</b>
৭	ঝাঁটা		<b>E</b>
৮	খায়		<b>E</b>
৯	চিঠি		<b>E</b>
১০	গোল		<b>E</b>
১১	মই		<b>E</b>
১২	মোমবাতি		<b>E</b>



**START ages – 4****Set 2**

<b>Item</b>	<b>Word</b>	<b>Response</b>	<b>Error</b>
১৩	গলা		<b>E</b>
১৪	ছুরে দিচ্ছে		<b>E</b>
১৫	ক্যাংগারু		<b>E</b>
১৬	গাছ		<b>E</b>
১৭	দিনের কৌটা		<b>E</b>
১৮	কুমির		<b>E</b>
১৯	তলছে		<b>E</b>
২০	বাঁশি		<b>E</b>
২১	বেলচা		<b>E</b>
২২	কৃষক		<b>E</b>
২৩	দরজা		<b>E</b>
২৪	সাতার কাটছে		<b>E</b>

**START ages- 5****Set 3**

<b>Item</b>	<b>Word</b>	<b>Response</b>	<b>Error</b>
২৫	ভাঙ্গা		<b>E</b>
২৬	ছিঁড়ে আনা		<b>E</b>

২৭	বোতল		<b>E</b>
২৮	কাপড়পরে		<b>E</b>
২৯	পয়সা		<b>E</b>
৩০	উকি দেয়া		<b>E</b>
৩১	কামেরা		<b>E</b>
৩২	ছাগল		<b>E</b>
৩৩	এ্যাম্বুলেন্স		<b>E</b>
৩৪	টেনে নেয়		<b>E</b>
৩৫	টেবিল		<b>E</b>
৩৬	হাই তোলে		<b>E</b>
<b>Set 4</b>			
৩৭	তালা		<b>E</b>
৩৮	পাণ্ডা		<b>E</b>
৩৯	তিন কোণা		<b>E</b>
৪০	ফল		<b>E</b>
৪১	ঝগড়া করে		<b>E</b>
৪২	ভড়া		<b>E</b>
৪৩	দাঁতের ডাক্তার		<b>E</b>
৪৪	ঘড়ি		<b>E</b>

৪৫	শুয়োপোকা, গুটিপোকা		<b>E</b>
৪৬	কম্পিউটার		<b>E</b>
৪৭	গাছের ডাল		<b>E</b>
৪৮	শিকল		<b>E</b>

<b>START ages- 6-7</b>	<b>Set 5</b>
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<b>Item</b>	<b>Word</b>	<b>Response</b>	<b>Error</b>
৪৯	আনন্দ করে		<b>E</b>
৫০	মাকড়শার জাল		<b>E</b>
৫১	জগিং		<b>E</b>
৫২	সবচেয়ে বড়		<b>E</b>
৫৩	ইউনিফরম		<b>E</b>
৫৪	হাতের কবজি		<b>E</b>
৫৫	ভাগাভাগি করে নেয়		<b>E</b>
৫৬	দূরবীন		<b>E</b>
৫৭	মূর্তি		<b>E</b>
৫৮	আসছে		<b>E</b>
৫৯	গহনা, মালা		<b>E</b>
৬০	ভয়		<b>E</b>

Set 6			
৬১	তরল		E
৬২	ময়ূর		E
৬৩	চুয়ে চুয়ে পরছে		E
৬৪	মস্কি, ব্রেইন		E
৬৫	মৌচাক		E
৬৬	শিকর		E
৬৭	ভাসছে		E
৬৮	কচ্ছপ		E
৬৯	লেখে		E
৭০	অসমান		E
৭১	টানে		E
৭২	ঘূর্ণিঝড়		E

<b>START ages – 8-9</b>	<b>Set 7</b>
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Item	Word	Response	Error
৭৩	পায়ের গোড়ালি		E
৭৪	বালিময়		E
৭৫	হায়না		E

৭৬	জোড়া		E
৭৭	হরিনের শিং		E
৭৮	পুষ্টিকর		E
৭৯	বিরক্তিকর		E
৮০	শিলমাছ		E
৮১	আগুন		E
৮২	চোয়াল		E
৮৩	খাড়া উঁচু পাহাড়		E
৮৪	ইশারা দেয়		E

<b>START ages – 10 -11</b>	<b>Set 8</b>
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Item	Word	Response	Error
৮৫	প্লেন		E
৮৬	রোদেলা		E
৮৭	গ্যাস ভরাচ্ছে		E
৮৮	কোণ		E
৮৯	নদী		E
৯০	বায়ু বের হচ্ছে		E
৯১	অংক করে		E

৯২	নদীর তীর		<b>E</b>
৯৩	তরল ঢালার চোঙ		<b>E</b>
৯৪	শিকারী		<b>E</b>
৯৫	জাহাজ		<b>E</b>
৯৬	শস্যকণা		<b>E</b>

Annexure: 8

Peabody Picture Vocabulary Test (PPVT) – IIIB

**FORM III B**

**ABBREVIATED INSTRUCTIONS AND SETS OF TEST ITEM STIMULUS WORDS**

Study Part 2 of the manual before testing.

**INTRODUCING THE TEST AND USING THE TRAINING ITEMS**

All instructions for introducing the test and using the Training Items are located on the examiner's side of the Training Plates. Use Training Items A and B with children 2 to 7 years old, and C and D with persons 8 and older.

**ADMINISTERING AND SCORING THE TEST ITEM SETS**

After you have administered the appropriate Training Items, begin testing using the Sets of Test Items.

- **Complete Set Rule.** Once you begin a set of test items, always administer all 12 items in that set in order, and always start with the first item in the set.
- **Start Item.** Begin testing with the Start Item, which is the first item in the appropriate Set of Test Items designated for the test taker's age. These are listed at the top of the item sets and in the box below.
- **Basal Set Rule.** The Basal Set Rule is one (1) or no errors in a set. Establish the Basal Set first. If necessary, reverse sequentially by sets until the rule is met. Then test forward by sets until a Ceiling Set is obtained.
- **Ceiling Set Rule.** The Ceiling Set Rule is eight (8) or more errors in a set.

**RECORDING RESPONSES AND ERRORS**

• **Record Responses and Errors for Each Item.** Use numerals to record the test taker's response to each item in the blank in the Response column. Indicate errors by drawing an oblique line through the E in the last column as shown below.

1. cat . . . . . (2) 4 E

• **Record the Number of Errors Per Set.** At the end of each item set, record the number of errors in the box provided.

• **Find the Total Errors Over the Critical Range.** Transfer the number of errors per set to the box below and add up the total errors. Be sure to use the lowest Basal Set through the highest Ceiling Set.

Ages	Start Item
2-6-3	1
4	13
5	25
6-7	49
8-9	73
10-11	85
12-16	109
17-Adult	145

**No. of Errors**

Set 1 \_\_\_ Set 7 \_\_\_ Set 13 \_\_\_

Set 2 \_\_\_ Set 8 \_\_\_ Set 14 \_\_\_

Set 3 \_\_\_ Set 9 \_\_\_ Set 15 \_\_\_

Set 4 \_\_\_ Set 10 \_\_\_ Set 16 \_\_\_

Set 5 \_\_\_ Set 11 \_\_\_ Set 17 \_\_\_

Set 6 \_\_\_ Set 12 \_\_\_ **Total Errors**

**CALCULATING THE RAW SCORE**

Record the number of the **Ceiling Item**, which is the last item in the **Ceiling Set**. Subtract from it the total number of errors made by the examinee from the **Basal Set** through the **Ceiling Set**. This is the **Raw Score**.

**Ceiling Item** \_\_\_\_\_

**Total Errors** - \_\_\_\_\_

**Raw Score**

*Transfer this Raw Score to page 1.*

Basal Set Rule: 1 or no errors in a set.  
Ceiling Set Rule: 8 or more errors in a set.

**START Ages 2-6 - 3 SET 1**

Item	Word	Key	Response	Error
1.	cat . . . . .	(2)	___	E
2.	baby . . . . .	(3)	___	E
3.	airplane . . . . .	(1)	___	E
✓ 4.	running . . . . .	(1)	___	E
5.	money . . . . .	(3)	___	E
✓ 6.	swinging . . . . .	(4)	___	E
7.	broom . . . . .	(2)	___	E
✓ 8.	eating . . . . .	(4)	___	E
9.	mail . . . . .	(3)	___	E
10.	circle . . . . .	(4)	___	E
11.	ladder . . . . .	(2)	___	E
12.	candle . . . . .	(1)	___	E
				<b>No. of Errors</b> <input type="text"/>

**START Age 4 SET 2**

Item	Word	Key	Response	Error
13.	neck . . . . .	(3)	___	E
✓ 14.	throwing . . . . .	(4)	___	E
✓ 15.	kangaroo . . . . .	(2)	___	E
16.	plant . . . . .	(1)	___	E
17.	can . . . . .	(4)	___	E
18.	shark . . . . .	(3)	___	E
✓ 19.	pouring . . . . .	(2)	___	E
20.	horn . . . . .	(1)	___	E
21.	shovel . . . . .	(4)	___	E
22.	farmer . . . . .	(3)	___	E
23.	gate . . . . .	(2)	___	E
✓ 24.	swimming . . . . .	(1)	___	E
				<b>No. of Errors</b> <input type="text"/>



Basal Set Rule: 1 or no errors in a set

Ceiling Set Rule: 8 or more errors in a set

↓ START Age 5				SET 3				SET 4				↓ START Ages 6 - 7				SET 5			
Item	Word	Key	Response Error	Item	Word	Key	Response Error	Item	Word	Key	Response Error	Item	Word	Key	Response Error	Item	Word	Key	Response Error
25.	broken	(2)	___ E	37.	lock	(4)	___ E	49.	cheering	(1)	___ E	50.	cobweb	(3)	___ E	51.	jogging	(4)	___ E
26.	picking	(4)	___ E	38.	panda	(1)	___ E	52.	huge	(3)	___ E	53.	uniform	(4)	___ E	54.	wrist	(2)	___ E
27.	bottle	(4)	___ E	39.	triangle	(4)	___ E	55.	sharing	(2)	___ E	56.	binoculars	(2)	___ E	57.	statue	(4)	___ E
28.	dressing	(1)	___ E	40.	fruit	(1)	___ E	58.	coming	(3)	___ E	59.	jewelry	(1)	___ E	60.	terrified	(1)	___ E
29.	coin	(2)	___ E	41.	arguing	(1)	___ E												
30.	peeking	(3)	___ E	42.	full	(2)	___ E												
31.	camera	(3)	___ E	43.	dentist	(3)	___ E												
32.	goat	(4)	___ E	44.	time	(3)	___ E												
33.	ambulance	(1)	___ E	45.	caterpillar	(3)	___ E												
34.	pulling	(1)	___ E	46.	computer	(4)	___ E												
35.	desk	(3)	___ E	47.	branch	(2)	___ E												
36.	yawning	(2)	___ E	48.	chain	(2)	___ E												
No. of Errors <input type="text"/>				No. of Errors <input type="text"/>				No. of Errors <input type="text"/>											

SET 6				↓ START Ages 8 - 9				SET 7				↓ START Ages 10 - 11				SET 8			
Item	Word	Key	Response Error	Item	Word	Key	Response Error	Item	Word	Key	Response Error	Item	Word	Key	Response Error	Item	Word	Key	Response Error
61.	liquid	(4)	___ E	73.	ankle	(1)	___ E	85.	shuttle	(4)	___ E	91.	calculating	(1)	___ E	95.	cruiser	(4)	___ E
62.	peacock	(3)	___ E	74.	sanding	(2)	___ E	86.	tropical	(2)	___ E	92.	shore	(3)	___ E	96.	grain	(4)	___ E
63.	leaking	(3)	___ E	75.	hyena	(4)	___ E	87.	refueling	(2)	___ E								
64.	brain	(2)	___ E	76.	pair	(3)	___ E	88.	angle	(1)	___ E								
65.	hive	(1)	___ E	77.	antlers	(4)	___ E	89.	river	(3)	___ E								
66.	root	(1)	___ E	78.	nutritious	(2)	___ E	90.	deflated	(1)	___ E								
67.	floating	(2)	___ E	79.	annoying	(1)	___ E	93.	funnel	(2)	___ E								
68.	tortoise	(1)	___ E	80.	walrus	(3)	___ E	94.	predatory	(3)	___ E								
69.	printing	(4)	___ E	81.	flaming	(3)	___ E												
70.	rough	(4)	___ E	82.	jaw	(4)	___ E												
71.	tugging	(2)	___ E	83.	cliff	(1)	___ E												
72.	tornado	(3)	___ E	84.	directing	(2)	___ E												
No. of Errors <input type="text"/>				No. of Errors <input type="text"/>				No. of Errors <input type="text"/>											