

EXPLORING SPEECH DELAY IN BANGLADESHI CHILDREN DURING THE COVID-19 PANDEMIC

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the requirements for the degree of
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Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Approval

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Abstract

The effect of the COVID-19 pandemic on speech delay in Bangladeshi children is explored in this qualitative study. The researcher investigated the factors, nature of speech delays, and parental perceptions and experiences through in-depth interviews with parents of five Bangladeshi children with speech delays as well as direct observation of the kids. The parents of the children took semi-structured interviews with open-ended questions and the children with speech delay were observed by the researcher 2 hours a week for a month to observe their current development. The data was collected through audio recordings. This study adapts a conceptual framework following the bioecological model (Bronfenbrenner, 1979, 1992, 2001; Bronfenbrenner & Morris, 1998). The results show a complex interplay of factors that contribute to speech delays, including fewer social interactions, more screen time, and restricted access to early intervention services. There were several kinds of speech delays seen, from articulation issues to expressive language delays. Parents emphasised the emotional effects of speech delay on their children while also expressing a strong desire for information and facing financial limitations. These results highlight the importance of targeted interventions, early detection, and support systems in addressing speech delays. This study offers insightful information for parents, teachers, policymakers, and healthcare professionals, laying the groundwork for addressing speech delay in Bangladesh's changing sociocultural environment.

Keywords: Speech Delay, the COVID-19 Pandemic

Dedication

I would like to dedicate my work to my beloved mother, whose unwavering love, endless support, and boundless encouragement have been my guiding light throughout this journey. To my father, whose wisdom, strength, and resilience inspire me every day to reach for the stars and never give up. And to my dear younger brother, a source of joy and inspiration, your enthusiasm and curiosity remind me of the importance of exploring the unknown.

This work is dedicated to my family, whose love and support have made it all possible.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The COVID-19 epidemic has rapidly spread across the globe. The World Health Organization (WHO) has declared a pandemic, and almost every government has issued quarantine and lockdown orders. Several measures affecting the entire society on all levels have had to be implemented. Everyday activities such as school attendance and medical appointments have been delayed (Pamplona, 2020). As a result, since January 2020, China has been experiencing an outbreak of the 2019 Novel Coronavirus (COVID-19). On March 8, 2020, the first patient in Bangladesh to test positive for COVID-19 was identified (Sakib, 2020). Due to the lockdown, the majority of the population's work and daily activities are hampered by the threat of infection. For instance, Colizzi et al. (2020) stated that occurrences such as the COVID-19 outbreak harm physical and mental health, heightening fear and concern and that the risk is greater for those who are considered to be vulnerable. Maintaining quarantine can increase the likelihood that autistic individuals will experience these health problems (Brooks et al., 2020). As nations implemented strict lockdowns, social distancing measures, and school closures to mitigate the spread of the virus, children's daily routines and environments were significantly altered. These disruptions had profound implications for their cognitive, emotional, and physical development.

Due to this outbreak, speech delays among children increased around the world (Pamplona, 2020). Speech is one way to express language through a combination of sounds. Language is the coding system that enables conceptualization, reasoning, and understanding. Language or speech disorders refer to situations where the speech or language ability deviates from what is

expected as normal development, while language or speech delays refer to situations where the development of the ability to understand and speak is correct but slower than what is considered normal (Jullien, 2021). The background of this study is rooted in the unprecedented global challenge posed by during the COVID-19 pandemic.

1.2 IMPACT OF SPEECH DELAY ON CHILDREN

The development of language helps the child's overall growth. Therefore, if a child's language development is not going well, it is required that his parents or teachers respond in order to quickly resolve the issue by determining whether the child is having issues with his language development (Santrock, 2007). The development of language facilitates the development of other aspects of a child's figure. So, if a child's language development is delayed, his parents or teachers are required to respond in order to expedite the problem's resolution by determining the cause of the child's language development difficulties (Santrock, 2007). There are four individual language skills, namely reading skills, writing skills, listening or listening skills, and speaking skills that humans must possess in order to communicate with other individuals. The stages of the skill can then be acquired gradually with advancing age. If in early childhood a child is not given a stimulus, properly for its growth, and support through its environment, this has an effect on the child's ability to speak, also known as speech delay or the delay in the process of speaking (Fitriani et al., 2016). Speech delay can exert profound impacts on children, affecting various facets of their development and well-being.

1.3 INCREASING OF SPEECH DELAY DURING THE COVID-19 PANDEMIC

The COVID-19 pandemic has brought about unprecedented challenges to child development, particularly in the realm of speech and language acquisition. During the pandemic, a significant increase in speech delay among children has witnessed. With lockdown measures and social

distancing protocols in place, children were subjected to reduced social interactions, limited access to educational resources, and an increased reliance on digital technology (Ana et al., 2022). The average child who experiences a developmental delay is one in six. However, compared to infants born before the pandemic, children born during the pandemic have almost twice the risk of developmental delays in communication and social development, according to a 2022 study by an American educational news source. Among other factors, less interaction with other children is believed by some researchers to be the cause (Allen, 2022).

Many prenatal (e.g., maternal stress) and postnatal (e.g., socialization) factors influencing early child development have undergone substantial and widespread changes as a result of the COVID-19 pandemic (Roseboom, 2021). This has prompted concerns regarding a possible increase in developmental delays among infants born during the pandemic. Particularly the concern is the correlation between fewer opportunities for social interaction and fewer language and socioemotional milestones (Osher, 2020). Also, Understanding the factors contributing to this increase and developing targeted interventions is paramount to addressing this emerging challenge and ensuring optimal speech and language development in children.

1.4 STATEMENT OF THE PROBLEM

The development of speech and language skills in children is fundamental to their overall growth and readiness for formal education. However, the outbreak of the COVID-19 pandemic led to widespread social distancing measures across the globe, forcing people into isolated living conditions. Prior to the pandemic, there was a growing awareness of conditions like autism, speech sound disorders, and other developmental diagnoses, resulting in an increased demand for speech therapy services (Smith, 2021).

This worldwide phenomenon significantly affected children's development as they were unable to participate in playgroups, play centers, and other activities that were part of their routine

(Jones et al., 2022). Lockdowns necessitated by the pandemic aimed at curbing the virus's spread isolated many young families, depriving children of essential playtime and social interactions. Moreover, the stress and exhaustion faced by caregivers during this period meant that many infants and toddlers did not receive the necessary one-on-one interaction for their development (Brown & White, 2020).

In the context of Bangladesh, concerns have arisen regarding a potential surge in speech delay among Bangladeshi children following the COVID-19 pandemic (UNICEF Bangladesh, 2020). A local news website reported that preschools observed a growing number of children born during the pandemic exhibiting speech delays. Dr. Luna Parveen (2022), a resident medical officer at Dhaka Shishu Hospital, noted that many toddlers brought to their institution faced communication difficulties and were unable to speak.

While there is an extensive body of scholarly literature on speech delay in children during the COVID-19 pandemic, these studies primarily focus on other contexts. Given the unique sociocultural and economic factors characteristic of Bangladesh, it is imperative to conduct an in-depth investigation into speech delay among Bangladeshi children during the COVID-19 pandemic. Also, the experiences and perceptions of parents in this context are vital for understanding the nature and impact of speech delay in children. However, there remains a significant gap in the existing literature regarding how Bangladeshi parents perceive and experience speech delay in their children during the COVID-19 pandemic. This study endeavors to shed light on the contributing factors, the nature of speech delays, and parental perspectives and experiences in this context. To effectively support the developmental needs of Bangladeshi children with speech delays post-COVID-19, a comprehensive understanding of the specific challenges they face is essential, ultimately facilitating their successful integration into society. Also, investigating parents' perceptions and experiences regarding speech delay during the pandemic is crucial for providing support and intervention strategies

that are contextually relevant to the unique sociocultural and economic factors characterizing Bangladesh, ultimately facilitating children's successful integration into society and their overall developmental well-being.

1.5 PURPOSE OF THE STUDY

The purpose of this qualitative study is to investigate speech delay among Bangladeshi children during the COVID-19 pandemic. The primary objectives are to understand the factors contributing to the increase in speech delay in this population, identify the various nature of speech delays observed, and delve into the perceptions and experiences of parents regarding speech delay during the pandemic.

1.6 RESEARCH QUESTION

The following research questions have been formulated to achieve the purposes of the research.

1. What factors influenced an increase in speech delay among Bangladeshi children during the COVID-19 pandemic?
2. What nature of speech delays can be observed among these children?
3. What perceptions and experiences do the parents have regarding speech delay among Bangladeshi children during the COVID-19 pandemic?

1.7 SCOPE OF THE STUDY

This research seeks to comprehensively investigate speech delay among Bangladeshi children during the COVID-19 pandemic. The study focuses on understanding the factors contributing to speech delay, the nature of speech delays observed, and the perceptions and experiences of parents regarding speech therapy services. The study involves a qualitative approach, utilising in-depth interviews with parents of children with speech delays as primary data sources.

1.8 LIMITATIONS OF THE STUDY

This study on speech delay in Bangladeshi children in during the COVID-19 pandemic acknowledges several limitations. Firstly, the sample size of the study was relatively small, consisting of parents and children from a specific region of Bangladesh. This limited sample may not fully represent the diversity of experiences and contexts within the country (Creswell & Creswell, 2017). Additionally, the data collection process heavily relied on self-reporting from parents, which may have introduced recall bias and social desirability bias (Bryman, 2016). Parents might not have accurately recalled specific details related to their child's speech development, and they might have provided responses they believe aligned with societal expectations. Lastly, the cross-sectional nature of the study design limits the researcher's ability to establish causality or track the long-term effects of speech delay (Babbie, 2016). Despite these limitations, the study offers valuable insights into the factors contributing to speech delay among Bangladeshi children and underscores the need for further research in this area.

1.9 SIGNIFICANCE OF THE STUDY

This study holds significant implications for healthcare professionals, educators, and parents in Bangladesh. The study addresses a pressing concern brought to the forefront by the COVID-19 pandemic which is speech delay among children. By investigating the factors contributing to speech delay, the nature of delays observed, and parental perceptions and experiences, this study aims to provide valuable insights on this issue. These insights can inform the development of targeted interventions, early identification strategies, and support systems for children facing speech delay. Furthermore, the study contributes to the broader understanding of how pandemic-related disruptions impact child development. Ultimately, the findings have the potential to enhance the quality of life for affected children and empower their families and

caregivers with knowledge and resources to address speech delay effectively in a post-pandemic world.

1.10 DEFINITION OF THE KEY TERMS

SPEECH DELAY: Language is the mental processing of communication, whereas speech is the vocal expression of language. Receptive language (understanding) and expressive language are both parts of the language (the ability to convey information, feelings, thoughts, and ideas). Most people think of language in its spoken form, but it can also take on a visual aspect, like American Sign Language (Maura, 2011). A child with speech and language delay means he/she cannot utilize words or other kinds of communication at the usual ages. Language difficulties include the inability to comprehend what is heard or read. There can also be difficulties combining words to create meaning. Speech disorders are difficulties producing the sounds that constitute words. This is the act of speaking physically. Some children suffer from both speech and language problems. There are numerous potential explanations for speech and language delay. These can include hearing issues, Down syndrome or other genetic diseases, autism spectrum disorder, cerebral palsy, and mental health issues. Delays can also be inherited. Occasionally, the cause is unknown (Staff, 2021). In this study, speech delay refers to a condition in which children exhibit a delay in the development of their speech and language skills compared to typical developmental milestones for their age group. It encompasses various aspects of speech and language development, including articulation (pronunciation of sounds), expressive language (ability to convey thoughts and ideas), receptive language (understanding and processing spoken language), and communication skills in general. In this study, "speech delay" refers to the delayed or atypical development of speech and language skills observed in Bangladeshi children, particularly during the COVID-19 pandemic.

THE COVID-19 PANDEMIC: The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, emerged in late 2019 and quickly spread globally. It has had a profound impact on virtually every aspect of human life, including public health, economies, and social dynamics. COVID-19 prompted governments and health organizations worldwide to implement various measures to curb its spread, such as lockdowns, travel restrictions, mask mandates, and social distancing protocols (Bhattacharya et al., 2020). These measures disrupted normal routines and resulted in significant social isolation for individuals, especially during lockdowns and school closures. The study specifically investigates the impact of the COVID-19 pandemic on speech delay among Bangladeshi children. It examines how the pandemic-related disruptions, restrictions, and changes in daily life may have contributed to speech delays in children in the post-pandemic era. It seeks to understand the unique challenges and circumstances faced by children and their families during this period and their implications for speech and language development. In this study, the term "COVID-19 pandemic" refers to the global health crisis resulting from the outbreak of the novel coronavirus and its multifaceted impacts on society, including health, education, and daily life.

CHAPTER TWO

REVIEW OF RELEVANT LITERATURE AND RESEARCH

2.1 INTRODUCTION

The primary focus of this study is on the role that COVID-19 pandemic plays in the rise in speech delay in Bangladeshi children. Also this chapter covered pertinent theories and academic studies on children's speech delays. This chapter also seeks to fill a knowledge gap regarding speech delays in Bangladeshi children raised during COVID-19 pandemic. The chapter is divided into the following three sections:

Part 1: Speech Delay and its Feature discusses the concept of speech delay, the theories of language acquisition of children, the theories of speech delay, the factors that cause speech delay, the effect of COVID-19 pandemic on speech-delayed children, and The nature of a bilingual child with a speech delay.

Part 2: Speech Delay around the World focuses on speech delay cases all around the world and especially on the Asia continent.

Part 3: Language acquisition of Bangladeshi children and Speech Delay shows the language acquisition among Bangladeshi children and also the speech delay among Bangladeshi children.

2.2 PART 1: SPEECH DELAY AND ITS FEATURES

Speech delay is a widespread developmental disorder that affects children all over the world. It is characterized by a delay in the acquisition of speech and language skills, which can affect the social, academic, and emotional development of a child. Understanding the characteristics of speech delay is essential for early diagnosis and intervention. One of the most common characteristics of speech delay is a delay in the development of expressive language. This can

manifest as a limited vocabulary, difficulty forming sentences, or ineffective communication skills. The expressive vocabulary of children with speech delay was significantly smaller than that of typically developing children, according to a study by Camarata et al. (2008).

When a child does not reach expected developmental milestones by the expected age, a developmental delay is identified (Sunderajan and V. Kanhe, 2019). According to Sunderajan and V. Kanhere (2019), the development of understandable speech and language is a helpful indicator of a child's overall development and intelligence. Speech delay is characterized by either greater incoherence than would be expected for age or speech sound error patterns that are inappropriate for age in a child's conversational speech sample. According to an Australian parenting website, a child has a language delay if they have trouble understanding and/or using spoken language. Considering the child's age, these challenges are unusual. Responding to language, comprehending words or sentences, saying first words or learning words, stringing words together to form sentences, expanding one's vocabulary, and other language-related challenges may be problematic.

A delay in phonological development, which is the ability to recognize and produce speech sounds, is another characteristic of speech delay. Children with speech delay may have trouble producing certain sounds, which can hinder their capacity for effective communication. Gierut et al. (2008) discovered that children with speech delay had difficulty with particular phonological patterns, including final consonant deletion and cluster reduction. Social communication skills may also be affected in speech-delayed children. They may struggle to comprehend social cues, maintain eye contact, and engage in social interactions. According to a study conducted by Paul et al. (2008), children with speech delay have poorer social communication skills than typically developing children. In addition to these characteristics, children with speech delay may also display behaviours such as frustration, withdrawal, and

communication avoidance. Additionally, they may be at risk for attention deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD).

According to Lestari (2016), the development of linguistic intelligence includes; the capacity for linguistic acceptance, the capacity to convey language, listening to parents or friends converse, repeating three to four-word sequences, executing two to three orders simultaneously, being able to respond to questions such as "What," "Who," "Why," "Where," and "How", be able to mimic a simple sentence, mention the name of the item being displayed, the capacity to comprehend the idea of literacy, connecting words to Sunderland things, mentioning different sounds, and tracing, mimicking, and creating letters are just a few examples.

2.2.1 THE THEORIES OF LANGUAGE ACQUISITION OF CHILDREN

Researchers have been interested in language acquisition for many years, and several theories have been proposed to explain how children learn a language. One of the earliest theories of language acquisition is behaviorism, which proposes that language is acquired through operant conditioning (Skinner, 1957). According to this theory, children acquire language through imitation and reinforcement of correct language use. However, this theory has been criticized for failing to account for the fact that children produce novel, never-before-heard sentences (Chomsky, 1959).

Noam Chomsky's nativist theory suggests that language acquisition is innate and that children are born with an innate understanding of the grammar (Chomsky, 1965). According to this theory, children learn language by applying an innate set of language rules to the language they hear in their environment. The fact that children acquire language rapidly and without explicit instruction supports this theory (Pinker, 1994). According to Jean Piaget's cognitive theory, language acquisition is the result of cognitive development (Piaget, 1952). Language is learned

through a process of assimilation and accommodation, in accordance with this theory. Before children can use a word in a sentence, they must first grasp its underlying meaning.

According to the information processing theory, language acquisition results from a child's capacity to process and analyze information (Miller & Chomsky, 1963). According to this theory, language is acquired through trial and error, and children acquire language skills by analyzing the input they receive and building on prior knowledge.

Language acquisition is a crucial stage in children's development. Consequently, an examination of the various theories used to explain language development in children remains crucial not only for educators but also for parents and caregivers (Wanjohi, 2010). Although not entirely, these theories can shed light on the mysteries surrounding language development. And regarding the acquisition of language by children, numerous theories had been advanced.

Behaviorists believe language is something that can be observed and measured. The need to use language is stimulated and language is uttered in response to stimuli. According to the behaviorist theory, competence in the rules of language is not as important as the ability to speak it; speaking is what makes language real. Knowledge is a mental state and the structure of a language doesn't make it a language; it is the function of speaking words that makes a language a language. B.F. Skinner is perhaps the best-known behaviorist who posited that children are conditioned by their environment to respond to certain stimuli with language (as cited in Wanjohi, 2010). When children speak the language of their parents they are rewarded and become more skillful. They grow in their ability to respond in a manner that responds to the environmental stimuli given by their parents. This shapes a child's language more than knowledge of rules. (Gleason and Ratner, 2009). While most would agree that a language-rich environment helps children achieve success in the community experts have not been able to prove this with experiments outside the lab. The behaviorist approach has been criticized for

not taking into account the many and varied influences on a child's language learning (Wanjohi, 2010).

Noam Chomsky believes that children are born with the ability to acquire any human language. He asserts that certain linguistic structures that children use so precisely must be ingrained in their minds. Chomsky believes that every child possesses a "language acquisition device" (LAD) that encodes the fundamental principles and grammatical structures of a language into the child's brain. Children must then only acquire new vocabulary and form sentences using the syntactic structures from the LAD. Chomsky argues that a child cannot learn a language solely through imitation because the language spoken around them is highly irregular – adult speech is frequently fragmented and occasionally illogical. The theory of Chomsky applies to all languages because they all contain nouns, verbs, consonants, and vowels and because children appear to be "hard-wired" to learn grammar. Every language is extremely complex, with distinctions so subtle that even native speakers are frequently unaware of them. However, within five or six years, all children, regardless of their intelligence, become fluent in their native language. However, critics of Chomsky's theory argue that although it is evident that children do not learn a language solely through imitation, this does not prove that they have a language acquisition device (LAD) – language acquisition could be the result of general learning and understanding abilities and interactions with others (Wanjohi, 2010).

The Social Interactionist theory is an approach to language acquisition that emphasizes the environment and context of language learning. It emphasizes pragmatics rather than grammar, which should be covered later. In this approach, the beginning speaker and the experienced speaker can be a child and an adult or a second-language learner and a native speaker, and feedback is always available. This approach is appealing primarily due to its emphasis on the home and cultural environment in early childhood language acquisition. According to this theory, language is not an innate ability. Instead, it is acquired through negotiating your

environment. Thus, vocabulary is constrained by context or, alternatively, by the culture within which speech is required and comprehensible (Lewis, 2010).

These theories of language acquisition have substantial implications for language teaching and learning. These theories can be used by educators to develop effective strategies for fostering language development in children. For instance, the social interactionist theory emphasizes the significance of interaction and communication in language learning, suggesting that language instruction should include opportunities for students to interact with one another and with native speakers of the target language. The nativist theory emphasizes the significance of innate grammatical knowledge, suggesting that explicit grammatical instruction should be the primary focus of language instruction. The cognitive theory emphasizes the importance of understanding concepts prior to employing them in sentences, which suggests that language instruction should emphasize vocabulary acquisition and the development of conceptual knowledge. In conclusion, these theories of language acquisition offer significant insights into how children acquire language and can inform effective language teaching and learning strategies.

2.2.2 THE FACTORS THAT CAUSE SPEECH DELAY

Parents of young children frequently worry about speech delay, which is defined as a delay in the development of speech and language skills. Research indicates that a number of factors may contribute to speech delay. Hearing impairment has been identified as a potential cause of speech delay. Studies indicate that children with hearing loss are more likely to experience speech and language delays (Yoshinaga, 2003). This may be due to the fact that children with hearing loss may find it difficult to hear and differentiate between different sounds, making it difficult for them to develop speech and language skills. A family history of speech and language disorders is another factor that may contribute to speech delay. There is a genetic component to speech and language development, and children with a family history of speech

and language disorders have an increased risk of speech delay, according to research (Bishop & Snowling, 2004).

Among the factors that lead to speech delay are a lack of stimulation, a bilingual environment, and preterm birth. These elements are included in the explanation of the causes of speech delay and include (1) Oral disorders. (2) Issues with hearing Lack of stimulation, autism, and (5) Early delivery (6) Social setting. The level of linguistic difficulty is higher than is typical in that circumstance (Nashriyah et al., 2022).

Sunderajan and V. Kanhere (2019) observed that, according to the evidence, 40%–60% of children with untreated speech and language delays may continue to have these issues as adults and are more likely to experience social, emotional, behavioral, and cognitive issues. Due to the widespread perception that speech delay is not dangerous and may run in families, it has been challenging to estimate the prevalence of speech delay. A "wait and watch" approach frequently results in late speech delay diagnosis and intervention. Children with speech and language delays should first seek help from primary care clinicians and family doctors. Thus, it falls on them to spot obvious speech and language delays and allay parents' worries.

The term "speech delay" in English refers to children's speech development that is behind that of their peers. A young child's communication style has a big impact on his language development. Parents must focus on speaking, pronouncing, communicating, and engaging with friends when their child is at home, with their family, in the classroom, and in other social situations. Children at that age are in the golden period of development where they can accept and understand the voice language and speech they hear and pay attention to in order to imitate (Ulfa et al, 2022). Boys are typically the ones who exhibit early childhood language delay when talking. This may have an impact on his speech as well as receptive and expressive language disorders. Receptive language disorders are also known as difficulties accepting, whereby

young children find it difficult to comprehend the messages that are explained by others, despite the fact that they can actually make themselves somewhat understand those messages. The difficulty of expression, in which early childhood children can understand what is explained by others, can be used to diagnose expressive language disorder (Nashriyah, 2022).

Additionally, prematurity and low birth weight have been identified as possible risk factors for speech delay. Studies indicate that premature infants are more likely to experience speech and language delays (Briscoe, Bishop, & Norbury, 2001). This may be because premature infants lack sufficient time to develop the neural connections required for speech and language development. Environmental factors, such as exposure to a limited vocabulary or lack of stimulation, may also play a role in speech delay. Children who are exposed to a large vocabulary and have access to stimulating language environments are more likely to develop strong language skills, according to studies (Hart & Risley, 1995). In addition, certain medical conditions, such as autism spectrum disorder, may contribute to speech delay. Children with autism spectrum disorder may struggle with communication and social interaction, impeding their capacity to acquire speech and language skills (American Psychiatric Association, 2013).

Overall, these factors emphasise the complexity of speech and language development as well as the significance of early identification and intervention for children with speech delay. By identifying and addressing these risk factors, parents can assist in promoting young children's speech and language development.

2.2.3 THE THEORIES RELATED TO SPEECH DELAY

A common developmental disorder, speech delay affects children's ability to produce and comprehend language. There are numerous theories that attempt to explain the underlying causes of speech delay. This review of the literature examines some of the most influential theories concerning speech delay.

Genetic and Neurological Factors

The genetic and neurological factors theory proposes that speech delay is caused by inherited genetic factors or neurological disorders like cerebral palsy or autism. Multiple studies support this theory. For instance, Mullen et al. (2003) found that children with a family history of speech and language disorders were more likely to have speech delays. Smith et al. (2005) found in a separate study that children with autism had a higher rate of speech delay than typically developing children.

Environmental Factors

According to the environmental factors theory, environmental factors like inadequate carer interaction or a lack of language exposure can contribute to speech delays. According to studies, children with little exposure to language may be more likely to have speech delays. For instance, a study by Fernald et al. (2008) discovered that at 24 months of age, children's vocabulary scores were lower when they had less exposure to language in their home environment. In another study, Ramirez-Esparza et al. (2014) discovered a relationship between young children's language development and the quantity and quality of caregiver-child interaction.

Cognitive Processing Theory

According to the cognitive processing theory, speech delay is associated with cognitive processing issues, such as difficulty planning and executing speech movements. Researchers have discovered evidence supporting this theory. For instance, Edwards et al. (2005) discovered that children with speech delays had trouble planning and executing speech movements. Pennington et al. (2003) discovered in another study that children with language impairments had difficulties with working memory and attention, which are essential for language processing.

Behavioral Theory

According to behavioral theory, speech delay can be caused by insufficient reinforcement or practice of speech skills. Studies have shown that children whose speech skills are reinforced and practiced more frequently have better language outcomes. For instance, a study by Shriberg et al. (2003) found that speech skills improved more in children who received more speech therapy than in those who received less therapy.

Social Interaction Theory

According to the social interaction theory, speech delay can be caused by a lack of social interaction and communication, such as when a child does not have enough opportunities to interact with carers or peers. Multiple studies have uncovered evidence supporting this theory. Tomasello et al. (2003) discovered, for instance, that children who had more opportunities for social interaction and communication had better language outcomes than those who had fewer opportunities.

Psychosocial Theory

According to the psychosocial theory, emotional or psychological factors, such as stress or anxiety, can impede a child's ability to learn and produce speech. According to studies, children who experience stress or anxiety are at an increased risk for speech delay. For instance, Oller et al. (2005) found that children who experienced chronic stress had worse language outcomes than those who did not.

Genetic and neurological factors, environmental factors, cognitive processing theory, behavioral theory, social interaction theory, and psychosocial theory are some of the major theories associated with speech delay. Despite the fact that each theory provides insight into the underlying causes of speech delay, it is likely that a combination of these factors contributes

to speech delay in the majority of children. Children with a speech delay can overcome obstacles and reach their full potential if they are identified and treated early.

2.2.4 THE EFFECT OF COVID-19 ON THE SPEECH DELAYED CHILDREN

Gerald (2022) predicts that a greater proportion of infants born during the COVID-19 pandemic will be identified as being at risk of developmental delay and referred for time-consuming and expensive developmental assessments, which will place an additional burden on healthcare and early education services. Moreover, children with delays may require additional resources and support in childcare and educational settings. In comparison to males, the risk of delay was relatively higher for females, perhaps reflecting greater susceptibility to the deteriorating social environment during the pandemic.

2.2.5 THE NATURE OF A BILINGUAL CHILD WITH A SPEECH DELAY

In today's globalized society, bilingualism is becoming more prevalent. However, bilingualism can present unique challenges for speech-delayed children. According to research, the nature of speech delay in bilingual children can vary based on a number of factors. Also, the age of language acquisition can influence the nature of speech delay in bilingual children. Children who are exposed to two languages from birth are more likely to acquire proficient language abilities in both languages. However, if a child is exposed to a second language later in life, they may experience language delays, especially if they already have a speech delay (Paradis et al., 2011).

In a bilingual environment, children often mix the two languages to some extent, though this tendency lessens as they gain more language proficiency. By the time they are five years old, these kids usually master both languages. A speech-language pathologist's services are

typically not required for bilingual language learning unless the primary language is challenging (Sunderajan et al., 2019). Also, McLaughlin (2011) said that most bilingual children will mix the two languages to some extent as they grow, though this tendency tends to lessen as they gain more language proficiency. By the age of five, these kids are usually fluent in both languages. Unless there is difficulty in the primary language, speech-language pathology services are typically not required for bilingual language learning. The same standards that apply to monolingual children should also be applied to bilingual children.

The type of language exposure bilingual children receive can also influence the nature of their speech delay. For instance, if a child is exposed to one language more than the other, he or she may develop stronger language skills in the former while experiencing delays in the latter (Kohnert, 2010). In addition, if a child is exposed to a dialect or accent that differs from the standard language, he or she may experience delays in acquiring the standard language (Pakulak & Neville, 2010). The severity and type of speech delay in bilingual children can also vary. Some bilingual children, for instance, may experience delays in only one language, while others may experience delays in both languages (Bialystok, 2010). Furthermore, the types of errors made by bilingual children with speech delay may differ from those of monolingual children with speech delay. For instance, bilingual children with speech delay may have trouble retrieving words in both languages, whereas monolingual children with speech delay may struggle with grammatical structures (Restrepo & Gutiérrez-Clellen, 2001). Furthermore, cultural factors may influence the nature of speech delay in bilingual children. Some cultures, for instance, may view speech and language delays differently and have varying expectations for language growth (Pea et al., 2011). Furthermore, cultural factors may influence the accessibility and utilization of language intervention services for bilingual children with speech delays.

2.3 PART 2: SPEECH DELAY AROUND THE WORLD

Speech delay is a widespread developmental disorder that affects children all over the world. While speech delay has been studied extensively in Western nations, research on speech delay in other regions of the world is limited. However, a number of studies have examined the prevalence, risk factors, and characteristics of speech delay in various regions of the world. According to studies, the prevalence of speech delay varies significantly between countries and cultures. In China, the prevalence of speech delay was found to be 4.25 percent, while in Saudi Arabia it was 13.50 percent (Liu et al., 2018; Al-Harbi et al., 2013). Similarly, a study in India discovered a prevalence of 3.9% for speech delay, while a study in Brazil discovered a prevalence of 18.2%. (Bhojwani et al., 2016; Ferreira et al., 2018). Similarly, risk factors for speech delay vary between countries and cultures. In Iran, low birth weight, preterm birth, and maternal education were identified as risk factors for speech delay (Kamali et al., 2014). In contrast, according to a study conducted in Brazil, male gender, low maternal education, and low socioeconomic status were risk factors for speech delay (Ferreira et al., 2018).

During the COVID-19 pandemic, the U.K. government's education authority Ofsted (2022) discovered that children continue to struggle with fundamental skills such as writing and speech. This was one of the findings of a series of reports published by Ofsted on Monday, which were based on evidence from approximately 280 inspections of educational institutions serving students of various ages, as well as focus groups with the government agency's inspectors. In the "early years" group, Ofsted (2022) found that education providers had observed delays in the speech and language development of young children. Some providers also discovered that infants had difficulty responding to basic facial expressions, which they attributed to a decline in social interaction during the coronavirus pandemic and subsequent lockdowns. In addition, some educators noted that children lacked confidence in group

activities and that toddlers and preschoolers required assistance in learning to share and take turns. (McKeever, 2022).

The characteristics of speech delay vary between regions of the world. For instance, an Iranian study found that children with speech delay struggled with articulation and phonological processes, whereas a Brazilian study found that children with speech delay struggled with language comprehension and expression (Kamali et al., 2014; Ferreira et al., 2018). In addition, a number of studies have demonstrated that the severity and type of speech delay can differ between languages and dialects (Pakulak & Neville, 2010). In addition to playing a role in the comprehension and management of speech delay, cultural factors also play a role. Some cultures, for instance, may view speech and language delays differently and have varying expectations for language growth (Pea et al., 2011). In addition, cultural factors may influence the accessibility and utilisation of language intervention services for children with speech delays in various regions of the world.

2.3.1 SPEECH DELAY IN ASIA

Speech delay is a prevalent developmental disorder that affects children throughout the world, including Asia. While research on speech delay in Asia is limited, a few studies have examined the prevalence, risk factors, and characteristics of speech delay in various Asian regions. According to studies, the prevalence of speech delay in Asia varies considerably between countries and regions. A study conducted in Malaysia found a prevalence of 6.7%, whereas a study conducted in South Korea found a prevalence of 13.9%. (Ganapathy et al., 2018; Yoon et al., 2011). A study in China found a prevalence of 4.25 percent, while a study in India found a prevalence of 3.9 percent (Liu et al., 2018; Bhojwani et al., 2016). Similarly, risk factors for speech delay vary by country and region in Asia. For instance, a Malaysian study identified maternal education and income, birth weight, and a family history of speech and language difficulties as risk factors for speech delay (Ganapathy et al., 2018). In contrast, a Japanese

study identified male gender, preterm birth, and low birth weight as risk factors for speech delay (Ochiai et al., 2011). A Malaysian study found that children with speech delay struggled with expressive language, phonology, and articulation, while a South Korean study found that children with speech delay struggled with articulation, phonology, and morphology (Ganapathy et al., 2018; Yoon et al., 2011).

There are few studies on the causes of speech delay in children of Turkey, clinical symptoms, and patients who visit mental health facilities complaining of the condition. In a two-year follow-up study, it was found that 61.0% of participants had intense screen (TV, tablet, mobile phone) exposure, and 57.6% of the participants had insufficient stimulus (Demir et al., 2021). It is possible to conclude from this information that speech delay is frequently a symptom rather than a diagnosis of various medical, psychiatric, or social conditions. Understanding and treating speech delay in Asia requires consideration of cultural factors. For instance, some Asian cultures may have different language development expectations and may view speech and language delays differently than Western cultures (Lee et al., 2019). In addition, cultural factors may influence the accessibility and utilization of language intervention services for children with speech delays in various Asian regions.

2.4 PART 3: SPEECH DELAY AMONG BANGLADESHI CHILDREN

Understanding the prevalence of speech delay in Bangladesh is essential for recognizing the scope of the issue. While there is limited specific data on speech delay in the country, studies have indicated a significant presence of developmental disorders and communication difficulties among Bangladeshi children (Rahman et al., 2016). According to estimates from the World Bank (Universal Periodic Review of Bangladesh 2013), there are currently 160 million people living here, with 15% of the population being affected by disabilities. It is a type of intellectual disability that affects about 1 in 700 live births. A child with a speech delay can be born to a person of any race, socioeconomic status, or geographic location. Speech

intelligibility is the ability to use speech to effectively communicate in everyday situations, as well as the understandability of speech, the match between the speaker's intention and the listener's response, and other factors (Kamrujjaman, 2018).

Given the importance of language proficiency in education and social interaction, language acquisition and speech delay are important concerns for Bangladeshi children. Multiple studies have investigated language acquisition and speech delay in young Bangladeshis. In Dhaka, the capital of Bangladesh, Rahman et al. (2014) assessed the language acquisition skills of children aged 3 to 6 from low-income families. The majority of children had difficulty with vocabulary, grammar, and syntax, according to the study. Furthermore, Rahman et al. (2018) examined the prevalence and risk factors of speech delay in rural Bangladeshi children aged 18-36 months. The prevalence of speech delay was found to be 15.2% in the study, with factors such as male gender, lower maternal education, and lack of stimulation being associated with speech delay. A study conducted by Akter et al. (2017), examined the language acquisition skills of Bangladeshi children with Autism Spectrum Disorder (ASD). The study found that children with ASD had significant difficulties with language acquisition, with expressive language and social communication posing particular challenges.

Language acquisition and speech delay in Bangladeshi children are also influenced by cultural and social factors. Khan et al. (2018) examined parental beliefs and practises in Bangladeshi families regarding language acquisition. The study revealed that parents acknowledged the significance of early language development but struggled to provide adequate stimulation and resources for their children's language development. Several studies have highlighted the prevalence, risk factors, and difficulties faced by Bangladeshi children in acquiring language skills. Similarly, Sultana and Ferdous (2020) investigated the role of parental involvement in the language acquisition of Bangladeshi children in their study. Parental involvement, such as reading to children and engaging in conversation, was positively associated with language

acquisition, according to the study. In this regard, Begum et al. (2015) emphasises on the association between parental beliefs and practices and speech delay in children aged 1-3 years. The study found a correlation between parental beliefs regarding the causes and treatment of speech delay and the likelihood of medical intervention. Islam et al. (2019) investigated the correlation between socioeconomic status and language acquisition among Bangladeshi children in a separate study. The study discovered that children from higher socioeconomic backgrounds had superior language acquisition abilities compared to those from lower socioeconomic backgrounds. Understanding the cultural and social factors that influence language acquisition and speech delay is crucial for developing appropriate interventions and support for children with language difficulties in Bangladesh. To better understand the nature of language acquisition and speech delay in Bangladeshi children and to develop culturally appropriate interventions for children with language difficulties in Bangladesh, additional research is required.

In Bangladesh, where language and communication skills are essential for social and educational success, speech delay is a serious problem. Multiple studies have examined the prevalence of speech delay among Bangladeshi children. Hasan et al. (2016) investigated the prevalence and risk factors of speech delay in Dhaka children aged 1 to 5 years. Socioeconomic status plays a pivotal role in speech delay. Parental education, involvement, and parenting styles significantly impact a child's language acquisition. Parents who engage in responsive communication and provide language-rich environments tend to have children with better language skills (Rinaldi et al., 2018). Children from lower-income families often have limited access to educational resources and speech therapy services, hindering their language development (Cohen et al., 2020). Low birth weight, parental consanguinity, and low socioeconomic status were identified as risk factors for speech delay, which affected 13% of the children, according to the study.

Ferdous et al. (2018) investigated the effect of maternal education on speech delay in Bangladeshi children aged 3-5 years. The study found that children of mothers with a low level of education had a greater risk of speech delay than children of mothers with a higher level of education. In addition, cultural factors play a role in the speech delay of Bangladeshi children. Akter et al. (2020) examined the effect of a speech and language therapy intervention on speech delay among 3-6-year-old Bangladeshi children. Compared to the control group, the intervention significantly improved speech and language skills in the intervention group.

2.5. CHAPTER SUMMARY

The literature review in this study provides a comprehensive overview of the nature of speech delay among children, with a specific focus on the impact of the COVID-19 pandemic. The chapter begins by defining speech delay and emphasizing its significance in child development, communication, and academic success. It delves into the multifaceted factors contributing to speech delay, categorizing them into individual, familial, and societal levels. Genetics, cognitive abilities, and health conditions are recognized as individual-level factors. The family context, including parental education, socioeconomic status, and parenting styles, plays a significant role in shaping speech development. At the societal level, cultural norms, accessibility to educational resources, and government policies influence the prevalence of speech delay. Throughout the chapter, relevant studies and research findings are cited to support the discussion. The literature review provides a foundation for understanding the complex interplay of factors contributing to speech delay and sets the stage for the empirical investigation conducted in this study.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the research methodology used to examine the phenomenon of speech delay in Bangladeshi children during the COVID-19 pandemic. The methodology describes the study's research design, participant selection, data collection methods, data analysis strategies, and ethical considerations. This study aims to offer important insights into the factors causing speech delay and the experiences of parents. The primary goal of this study, as stated earlier in Chapter 1, is to investigate the effects and factors in Bangladeshi children who are experiencing speech delays during the COVID-19 pandemic. The first research question explores the factors that lead to speech delay in Bangladeshi children. The second research question seeks to observe the nature of speech delay the Bangladeshi children facing. The third research question investigates the perceptions and experiences of parents regarding the provision of speech therapy services for children with speech delay in Bangladesh during the COVID-19 pandemic, and the barriers and facilitators that exist for accessing these services. The chapter also discusses the selection of participants and the justification for using a qualitative multiple-case study approach.

3.2 THE QUALITATIVE PARADIGM AND ITS PHILOSOPHICAL ASSUMPTIONS

For the research, the constructivism paradigm has been chosen as the research paradigm as the researcher acknowledges that the phenomenon of speech delay among Bangladeshi children is not solely determined by biological factors, but is influenced by a complex interplay of environmental, societal, and personal factors. It is believed that speech delay is socially constructed, with meanings and interpretations shaped by cultural beliefs, social interactions, and contextual factors specifically during the COVID-19 pandemic. Constructivism, according to Creswell (2013), holds that people establish their own understanding of the world based on their distinctive perspectives and interactions. This assumption fits with the goal of the study, which is to investigate the experiences of Bangladeshi children with language acquisition and speech delays from their own perspectives and within their cultural context. Adopting a constructivist philosophical assumption, the researcher acknowledges the significance of comprehending children's, parents', and carers' subjective experiences with speech delay. It acknowledges that depending on each individual's cultural background, social environment, and personal experiences, their interpretations and meanings of speech delay may vary.

Research paradigm	Philosophical	Assumptions			
	Ontological	Epistemological	Axiological	Rhetorical	Methodological
Constructivist Theory	Multiple experiences from different perspectives and situations	Interviewing the participants with an interactive approach and spending time with the participants in an amiable gesture	Researcher's Observation of the participants according to their experience will be discussed	The third-person point of view has been used to conduct the research in a narrative style of qualitative research	Qualitative Multiple Case Study Approach

Table: The Philosophical Assumptions of the Study

The study adopts a constructivist viewpoint in order to provide a thorough understanding of speech delay in Bangladeshi children while taking into account the social, cultural, and personal factors that influence how well they learn languages. Constructivism, according to Guba and Lincoln (1994), is a research paradigm that emphasises the active construction of knowledge by individuals within their social and cultural contexts while acknowledging the subjective nature of reality. This paradigm views reality as a result of human interpretation and interaction with the outside world rather than as an objective reality.

This study aims to observe different perspectives on speech delay in the children of Bangladesh. And for the observation, different cases of speech delay have been found in different sociocultural settings where the parents of the child are involved so that the experience they have can share with the researcher. An interactive approach has been applied to interview the participants so that they can share their observations of their child and their experience without any misgivings. The researcher has observed their experience and will try to avoid any bias. For nattering the research the researcher has used the third person point of view and this study has used Qualitative Multiple Case Study Approach.

The researcher have analysed the audio recordings of the interview of the parents to find out the factors that caused an increase in speech delay in children during COVID-19 pandemic (R1), and the nature of speech delay the children are facing (RQ2). Also, the perceptions and experiences of parents regarding the provision of speech therapy services for children with speech delay in Bangladesh during the COVID-19 pandemic (RQ3).

3.3 THE RESEARCHER'S ROLE

The researcher is a primary-level school teacher in an English version School. She teaches English to class KG- 4 level students. So, to be up to date with the field of teaching, the researcher joined several Facebook groups regarding different queries of the parents of toddlers to get them admitted into different preschools or any other related queries. There she saw some queries about having a speech delay. Being a student of ELT, that quires made the researcher think about why this is happening as the queries were very recent. Then she searched for some news on the internet and saw especially during the pandemic, the speech delay in children increased to a great extent. Also, she saw two of her students in the pre-primary level who was also a child dealing with a speech delay. As the researcher is a student of ELT, the topic made her interested in conducting research on why speech delay is increasing especially during COVID-19 pandemic.

There is no bias in conducting the research as the researcher is interested in this topic. However, the researcher does not know the participants and does not have any personal attachments with the participants.

3.4 MAJOR THEORIES RELATED TO THE CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of any study serves as the theoretical backbone, providing a structured understanding of the phenomena under investigation. In the context of speech delay among Bangladeshi children during the COVID-19 pandemic, several major theories and frameworks come into play. These theories offer valuable insights into the multifaceted nature of speech delay, its causes, and potential interventions. This introduction provides an overview of some of the major theories and frameworks that underpin the study's conceptual framework.

In this study, the Bioecological Model of Human Development, Social Learning Theory, Cognitive Development Theory, and Cultural-Historical Activity Theory were employed as essential theoretical frameworks to guide the interpretation and analysis of the study's findings. The Bioecological Model, proposed by Urie Bronfenbrenner, facilitated the understanding of how various environmental systems, ranging from microsystems to macrosystems, influenced speech delay in Bangladeshi children. It allowed for a comprehensive exploration of the pandemic's impact on children's language development through changes in their immediate and broader environments. Albert Bandura's Social Learning Theory was instrumental in interpreting the role of observational learning and social interactions in shaping children's speech and language development. It offered insights into the consequences of children's exposure to digital devices and screen time. Furthermore, Jean Piaget's Cognitive Development Theory aided in understanding the cognitive processes at play in children's speech delay, shedding light on their active knowledge construction. Lastly, Lev Vygotsky's Cultural-

Historical Activity Theory was employed to unravel the influence of cultural and social factors, including societal norms, stigma, and traditional beliefs, on parental perceptions and experiences regarding speech delay in the Bangladeshi context. Together, these theories provided a multifaceted framework for the analysis and interpretation of the study's findings, enriching the understanding of speech delay in Bangladeshi children in the context of the COVID-19 pandemic.

1. Bioecological Model of Human Development, Urie Bronfenbrenner's theory emphasizes the significance of the environment and its systems in influencing a child's development. The model incorporates all of the system layers including the microsystem, mesosystem, ecosystem, and macro system that have an impact on a child's development. The model places a strong emphasis on the significance of comprehending how various systems interact and affect a child's development (Bronfenbrenner, 1979, 1992, 2001; Bronfenbrenner & Morris, 1998). In the context of speech delay, this model is crucial for understanding how various factors at different levels interact and influence a child's language development.

2. Social Learning Theory: According to Albert Bandura's theory, learning occurs through modeling, imitation, and observation. The theory places a strong emphasis on the role that cognitive processes play in learning as well as the significance of social interactions in influencing behavior. (Bandura, 1986). This theory is essential for understanding how parental communication styles and the child's social environment contribute to speech delay.

3. Cognitive Development Theory: The focus of this theory, which was created by Piaget, J. (1971), is on how crucial cognitive processes are in determining a child's development. According to the theory, children actively create their knowledge and understanding of the world through experiences and interactions with their surroundings.

5. Cultural-Historical Activity Theory: Lev Vygotsky's theory (1978) emphasizes the significance of social context and culture in influencing a child's development. According to the theory, kids learn and grow through their interactions with people in their cultural and historical context.

In this study, these major theories and frameworks inform the analysis of factors contributing to speech delay among Bangladeshi children during the COVID-19 pandemic, helping to shape the conceptual framework that guides the research. By drawing on these theories, the study aims to provide a comprehensive understanding of speech delay and identify effective strategies for intervention and support.

3.5 THE CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of any research study serves as the scaffolding upon which the entire investigation is constructed. It provides a structured lens through which researchers can view, interpret, and understand the complex interplay of variables and factors relevant to their study. The framework's foundation is the bioecological model (Bronfenbrenner, 1979, 1992, 2001; Bronfenbrenner & Morris, 1998), which emphasizes the various levels of influence that affect children's development and well-being. It acknowledges that environmental and contextual factors, such as those affecting an individual, family, community, or society, are embedded within a complex and interconnected system of factors affecting children's development.

At the individual level, factors like genetics, cognitive ability, and health status may have an impact on speech delay. For instance, a child may be more likely to experience speech delay if their family has a history of speech delay or if they have a developmental disorder. The initiation of speech delay may be influenced by family-level variables such as parental education and socioeconomic status, parenting styles, and access to healthcare. A child from a

low-income family might, for instance, only have limited access to speech therapy services or encounter fewer language-rich situations.

Factors at play in the community may have an effect on the onset of speech delay, including the accessibility of educational resources, cultural conceptions of child development, and the availability of speech therapy services. For instance, in some communities, getting help for a speech delay may be stigmatized, or there may not be enough resources to address developmental delays. Government regulations, cultural norms and values, and economic structures all have an effect on how speech delays develop in society. For instance, access to speech therapy services may be improved by government policies that prioritize funding for education and healthcare, whereas access to these services may be restricted by economic systems that maintain poverty.

Children in Bangladesh experience speech delay due to new contextual factors brought on by the COVID-19 pandemic, such as disruptions in healthcare and education, difficult financial times, and social isolation. For children with speech delays, these factors may exacerbate already extant developmental disparities and create new difficulties (RQ.1). This study's conceptual framework revolves around the idea that a child's lack of social interaction causes a developmental delay. The isolation protocol used during the COVID-19 pandemic resulted in a lack of social interaction and slowed the speech development of many children (Allen, 2022). (RQ.1).

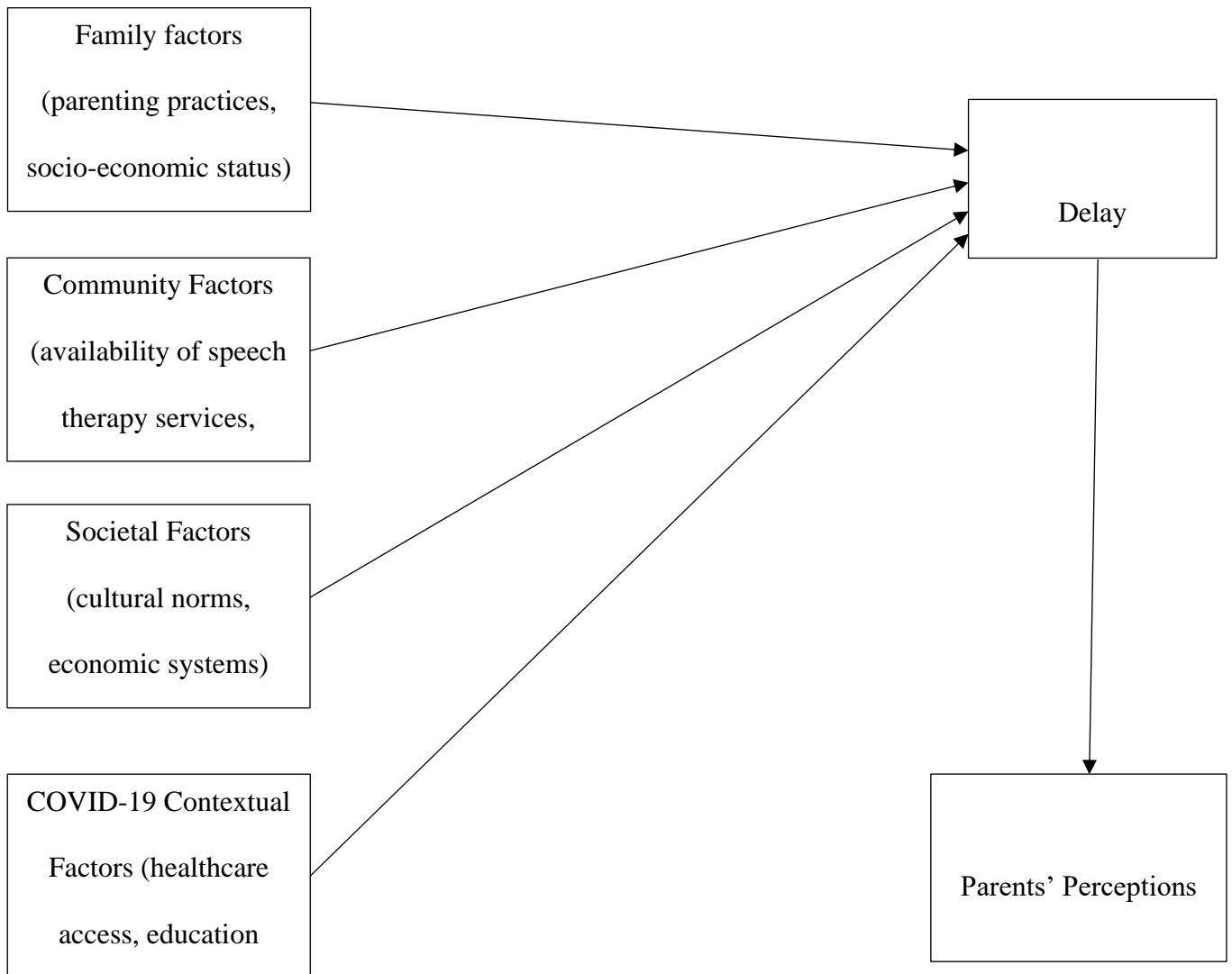


Figure 3.1 The Conceptual Framework of the Study

3.6 SELECTING THE PARTICIPANTS

The purposive sampling technique has been used for conducting the study. The researcher has selected Bangladeshi children who are suffering from speech delay and tried to observe them carefully. As they are not able to speak and participate in the interview, their parents informed the researcher about their overall condition and background by answering some semi-structured interviews. As it is a multiple-case study, multiple cases of speech-delayed children have been explored and analysed.

The participants of this study are divided into two parts. First of all, the children who are dealing with speech delay were observed. To conduct the observation, the researcher spent approximately 2 hours a week with each child. The consent of the parent was taken (see Appendix A) before the observation. Next, the parent of each child was given a semi-structured interview with open-ended questions. For each child, the mother was selected for the interview. Children who were born before the pandemic and are now in the critical period of their language development were selected for this study.

3.7 PARTICIPANTS' PROFILE

Five children dealing with speech delay and their parents were the participants of the study. The participant profile for this research was determined based on specific inclusion and exclusion criteria. Inclusion criteria encompassed children between the ages of 3 to 7 years, diagnosed with speech delay as confirmed by medical professionals or speech therapists, and whose parents or guardians provided informed consent for their participation. This age range was selected as it represents a critical developmental period for speech and language skills. Exclusion criteria were applied to children outside the specified age range, those with typical speech and language development, and individuals whose parents or guardians did not grant consent for participation. These criteria ensured that the study's focus remained on children

experiencing speech delay during the COVID-19 pandemic in Bangladesh, aligning with the research objectives and ethical considerations. In Table 4.1, the profile of each child has been made. Pseudo-names have been used for the children and their parents to keep their identities confidential.

Name of the child	Name of the parent	Age of the child (now)	Total family member	Going to school	Cause of speech delay	Present condition
Jamil	Arifa	4 years	4	Yes	Lack of interaction	Improving
Tayeen	Dina	5 years	5	Yes	Lack of interaction	Improved
Maisha	Farzana	3.5 years	6	Yes	Neurological difficulty	Improving
Abir	Mitu	4.5	5	Yes	Lack of interaction	Improving
Labib	Ayesha	5.5	5	Yes	Lack of interaction	Improved

Table 4.1: Participants' profile of the speech-delayed children

Jamil is a four-year-old boy. His family consists of five people. His mother works as a teacher. His mother and father are both very busy because of their jobs. There is a helping hand who lives with them and takes care of Jamil the majority of the time. He is a very spontaneous and happy child who enjoys watching YouTube videos. He enjoys watching stories and cartoons

in various languages. Her mother wonders why her son enjoys stories in different languages from around the world. During the pandemic, he was at home and watched YouTube videos most of the time. Her mother recognised speech delay in Jamil at the age of 2. After the doctor's observation, at present Jamil is going to a preschool and his speech delay is gradually improving.

Tayeen is the only child of his family. Her mother Dina is a senior nurse in a government hospital in Uttara. During the lockdown, he was at home playing with toys and digital devices. Her mother had duty at the hospital for months during COVID-19 and could not give her child enough time. His father was at home working online and the only person was the helping hand who looked after the child. Also, there were no other family members to give the child special care and to talk to. After his diagnosis of speech delay, the doctor advised Dina to interact with Tayeen as much as possible and reduce the use of digital devices as much as possible. As for now, his grandmother has come from the village and taking care of the child. At present, his speech delay has improved.

Among the children selected for the study, Maisha's case is different from others. At born, she had neurological difficulties. Her mother is a homemaker and gives enough time to her child. However, due to his lack of cognitive development, she was not able to respond to her mother verbally. The doctor advised her to give her speech therapy but due to the lockdown, her family could not follow the advice Now she is admitted into a special school where speech therapy is given to her and her mother reported to the researcher that she is slowly improving his speech delay.

Abir is the second child in her family. He has quite a large family but still no one to really communicate with him. His father is a businessman who is busy every day and comes late at night. Her mother is a homemaker but she has to take care of the other two children who are

studying at the high school level. During the lockdown, his father's business was not going well, and as a result, her mother had to start an online business at home and brought a full-time helping hand to do other work. His siblings spent most of their time playing video games during the lockdown. After the diagnosis, she was admitted to a preschool and now, there is improvement in her speech delay and he is improving day by day.

Labib, who is 5.5 years old, is a very spontaneous child. His mother is also a student, and his father is a businessman. He has an older brother who is a high school reader. Her mother is a postgraduate student, and she is struggling with managing everything together. Labib is taken care of by a housemaid, and during the pandemic, he spent all day watching YouTube videos. His brother is also engaged in an online game. Following the diagnosis of speech delay, he was admitted to a preschool, and he occasionally goes on vacation with his family. At present his speech delay has been improved to a great extent.

Among all five cases that the researcher observed, four cases were hugely impacted by COVID-19. But one case was exceptional as Maisha had had neurological difficulties since her birth. Though it was not because of COVID-19, still her treatment was affected due to the lockdown.

3.8 OBSERVATION

One of the earliest and most basic approaches to qualitative research methodology is observation. This method entails systematic and meaningful data collection using one's senses, particularly looking and listening (Alison Bryant et al., 2017). The researcher employed a multifaceted approach to collect, record, and analyze observation data. Data collection involved direct interaction with the children experiencing speech delay and their parents. The researcher conducted in-person observations in naturalistic settings and employed structured techniques to document the children's speech behaviors. Detailed notes were taken during these interactions, capturing speech patterns, difficulties, and emerging improvements. In addition,

the researcher employed audio and video recordings to create a comprehensive record of the observations. The researcher spent two hours a week for one month with each child to observe the children for the study with the consent of their parents. In the whole process of the study, observing the children was the most challenging part for the researcher. The researcher tried to familiarize herself with the children to create a friendly environment for them. It took a while to create a bond and finally, it was possible to observe them and connect to them personally.

3.9 ANALYSING INTERVIEW PROTOCOL

The Critical Incident Technique (CIT) interview framework has been adopted by the researcher to design the semi-structured interview questions for this research. The Critical Incident Technique (CIT) is a qualitative research method that aims to capture specific incidents or events that are considered critical or meaningful by participants (Flanagan, 1954). This framework can be used to compile comprehensive data on experiences, actions, and circumstances connected to speech delay among Bangladeshi children during the COVID-19 pandemic. In order for participants to share their stories and reflections during the interview process, a welcoming and supportive environment was established. Encouraging participants to give in-depth explanations of the critical incidents, emphasising the circumstances, feelings, and results connected to each incident. To collect in-depth information, probing techniques has been used, such as seeking additional clarification, encouraging participants to give examples, or examining the underlying causes of their perceptions and experiences (Flanagan, 1954).

The researcher creates a structured interview protocol that aims to elicit critical incidents from participants in order to put the CIT framework into practice. Participants were asked during the interview to recall particular events or circumstances that they believe are significant in relation to speech delay. These incidents were difficulties encountered, successes or failures, discussions with medical professionals, experiences with speech therapy, or any other notable occurrences (Flanagan, 1954). Based on each research question, the interview questions are

formulated by the researcher. Each interview question contributes data from the participant that answers the related broad research question. The researcher chose to prepare interview questions using a matrix.

The researcher ensures that interview questions (IQs) are written differently than research questions (RQs), organizes the chronology of questions so that it follows the natural flow of social conversation, embellishes the question matrix with a variety of questions, and prepares an additional list of follow-up or prompt questions to make the interview as conversational as possible. The researcher be guided and monitored by her supervisor, Dr. Sabreena Ahmed, associate professor of BRAC University throughout the study.

3.10 DATA ANALYSIS FRAMEWORK

For analyzing the data of the study, the researcher used Qualitative Thematic Analysis. Thematic analysis is a useful technique for examining the perspectives of various research participants, highlighting similarities and differences, and producing unexpected insights, according to Braun and Clarke (2006) and King (2004). The participants of the study are the parents of the children. The semi-structured interview has been conducted with open-ended questions to collect and analyze the data. According to Braun and Clarke (2006), a popular technique for analysing qualitative data is thematic analysis, which enables the discovery and interpretation of patterns, themes, and meanings present in the data. During the COVID pandemic, speech delay in Bangladeshi children has been examined using the interview data gathered from parents, carers, and medical professionals. Some steps will be followed to analyse the data.

Steps	Description
1. Familiarization with the data	The researcher thoroughly reads and immerse themselves in the interview transcripts to gain a comprehensive understanding of the content and context.
2. Coding	The researcher assigns codes to relevant segments of the data that capture key concepts and themes related to speech delay.
3. Theme Identification	Similar codes has been grouped together to form initial themes. The researcher will analyze the codes, looking for overarching patterns and concepts that emerge from the data.
4. Theme Development	The identified themes has been refined and reviewed. The researcher has examines the themes for coherence, consistency, and relevance to speech delay in Bangladeshi children. Themes are collapsed, merged, or split as needed.
5. Data Interpretation	The researcher interprets the themes, exploring their relationships and considering their implications for speech delay during the COVID-19 pandemic among Bangladeshi children. Relevant quotes or excerpts from the interviews are used to support the interpretations.

3.11 ETHICAL CONSIDERATION

The parents of the children with speech delays were required to read and sign the "informed consent form" (Appendix A). The consent form outlined the participants' responsibilities while participating in the study. Participants were also informed that their interviews would be

recorded. Participants were assured that their privacy would be protected, and the researcher kept her word by using pseudonyms for each participant in this study.

3.12 TRUSTWORTHINESS OF THE STUDY

The central priority of this research was to establish and maintain trustworthiness and credibility, which was supported by a variety of methodological strategies and practices. The inclusion of member checking, an essential element of the research, enabled participants to verify and validate the results, thereby increasing their precision and alignment with the participants' lived experiences (Lincoln & Guba, 1985). Furthermore, the establishment of interrater reliability was undertaken in order to guarantee uniformity in the interpretation and coding of data among members of the research team, thereby reducing the influence of personal bias (Miles & Huberman, 1994). Interrater reliability in this study was diligently ensured through a structured process. The researcher worked independently, following the blind coding method to minimize bias. Regular meetings with the supervisor were held for clarifications and consensus-building. After the coding process, interrater reliability was calculated and the results demonstrated a high level of agreement, with a remarkable 94.4 percent interrater reliability. The research supervisor, in charge of overseeing the process, confirmed this substantial level of agreement, highlighting the robustness and reliability of the study's qualitative analysis. In order to provide detailed and contextually nuanced accounts of the research phenomena, thick description was essential to the study's qualitative methodology (Geertz, 1973). An audit trail was kept, documenting every step of the research process, enabling others to verify and replicate the study if needed.

To increase the reliability and robustness of the findings, analysis triangulation—which makes use of several qualitative methods and data sources—was used (Denzin, 1978). The validity of the study's findings was further supported by data triangulation, which included information from multiple sources (Creswell & Miller, 2000). Together, these methodological decisions

and actions strengthened the research's reliability, dependability, and confirmability, strengthening its credibility. The researcher used the procedure of inter-coder reliability. For using the inter-coder reliability, the researcher's faculty was requested to check all the documents and a set of interview transcripts, themes were rated by her as well (see Appendix D1 to D5). Also, the rater's agreement on the themes of the transcription was calculated in percentage (E1 to E2).

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter describes the results of the research and discusses the findings. The objective of this research is to find out the factors that influenced an increase in speech delay among Bangladeshi children during the COVID-19 pandemic. The nature of speech delay that can be observed among Bangladeshi children have also been discussed. Also, the perceptions and experiences the parents have regarding speech delay among Bangladeshi children during the COVID-19 pandemic have been discussed.

Figure 4.1 on the following page depicts the study's emerging themes

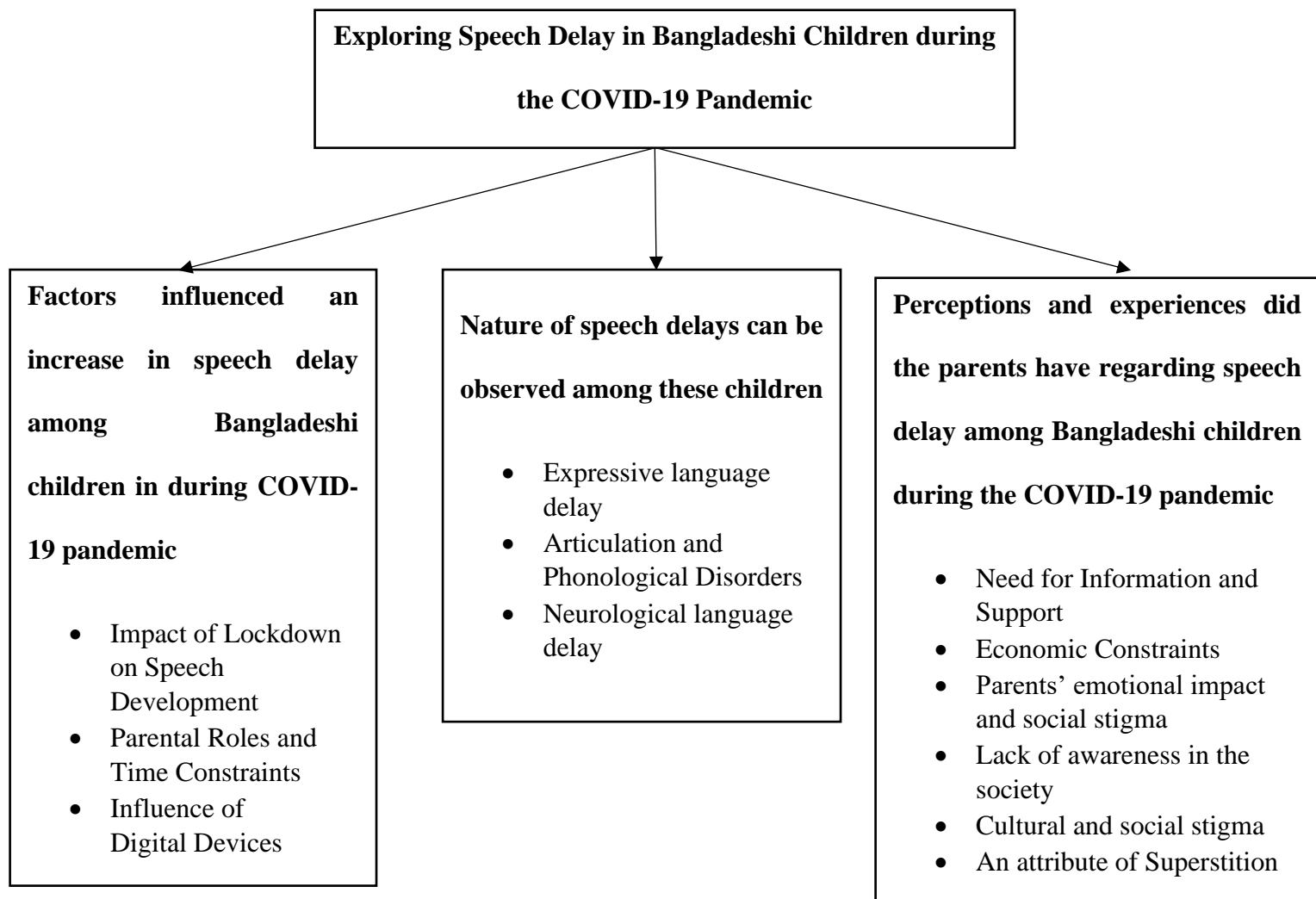


Figure 4.1 Emergent Themes of the Study

4.2 SECTION ONE: FACTORS THAT INFLUENCED AN INCREASE IN SPEECH DELAY

This study focuses on the social and cultural factors of language acquisition that affect children's speech. After interviewing their parents, the researcher found several social-cultural factors that are causing speech delays in children, especially after the COVID-19 pandemic. Social interaction was reduced to a great extent during the pandemic and that caused speech delays in children.

4.2.1 LOCKDOWN DURING PANDEMIC

Because of the pandemic, there were lockdowns and social distancing protocols all over the world, and Bangladesh was not exempt. During the difficult period of COVID-19, Bangladesh's government also implemented some rules for safety reasons, and all citizens of Bangladesh were required to follow the rules. School closures, reduced social interactions, and increased reliance on digital platforms resulted from lockdown measures aimed at containing the virus's spread (Ana et al., 2022). Tayeen was isolated for the duration of the lockdown, which resulted in a lack of social interaction and, as a result, a speech delay. His mother also stated that he was not receiving the necessary interaction as a result of social distancing. According to Tayeen's mother, he was only at home during the lockdown and couldn't interact with other children due to social distancing. Not only Tayeen, but the other children Jamal, Maisha, Abir, and Labib were also under lockdown, which hampered communication.

Also, Jamil's mother has stated, "My child had limited exposure to other children and activities outside the home. During the lockdown, he remained at home at all times" (DU ARI 50)

The abrupt shift to remote learning and decreased in-person interactions disrupted the language-rich environments typically provided by schools, as well as peer interactions (Ana et

al., 2022). Isolation reduced the demand for speaking, causing speech delays in many children in Bangladesh, particularly after COVID-19, and had a wide-ranging impact on children's speech development.

4.2.2 NUCLEAR FAMILY

The nuclear family structure has grown in popularity in modern society, encompassing a family unit made up of parents and their children who often live apart from extended family members. This family structure has an impact on many aspects of a child's development, including speech and language acquisition. The nuclear family structure influences a child's exposure to linguistic diversity and communicative interactions in the context of speech delay (Morisset et al., 2008). The researcher found out that most of the children who are dealing with speech delay are mostly from an environment where they did not get enough social exposure to the language. A nuclear family is one of the reasons why children cannot have an environment where they can interact with other family members.

...Umm...My child gets less exposure from family members. We are a small family... (DU ARI 16)

Children's exposure to a variety of vocabulary and language styles is reduced with fewer household members, potentially affecting their language development. The absence of extended family members, such as grandparents or aunts, who frequently contribute to children's linguistic experiences, has an additional impact on the richness of language exposure (Morisset et al., 2008). The researcher found out that most of the children who are dealing with speech delay are mostly from an environment where they did not get enough social exposure to the language. A nuclear family is one of the reasons why children cannot have an environment where they can interact with other family members.

4.2.3 WORKING PARENTS

Working parents are not able to give enough time to the children and this may cause a lack of language interaction with the child. According to Dr. Parveen (2022), the doctor of Dhaka Shishu Hospital, working parents, are one of the great issues of speech delay in children. Due to the lockdown, most of the families lost their main source of finance and every family member started to find suitable work to contribute to their families from home. If there is a child in that particular home who is in need of communication and interaction then unfortunately there will be no one to give them time.

“...Umm..... Only my housemaid takes care of her and we both husband and wife keep busy throughout the week...” (DU MIT 19)

Working parents frequently face the challenge of balancing work-related demands with consistent and meaningful communication with their children, potentially affecting their language acquisition and speech development (Devis et al., 2016). The researcher observed the needs of the parents to work and this leads to a gap in communication with the child. In all four of the five cases, the parents were busy with their work and this was one of the factors that caused an increase in speech delay.

4.2.4 NEUROLOGICAL REASONS BEHIND SPEECH DELAY

Neurological factors contributing to speech delay have been recognized in various research studies. According to the American Speech-Language-Hearing Association (ASHA), speech and language development can be affected by neurological conditions such as cerebral palsy, brain injuries, and other disorders that impact the nervous system (ASHA, 2022). Additionally, a study by Sices et al. (2007) emphasised that neurological abnormalities and developmental disorders can be significant contributors to speech and language delays in children. These findings underscore the importance of identifying and addressing neurological factors when

evaluating speech delays in children, as therapy and interventions may be necessary to support their language development.

Without social interaction or communication with family members, a child still can have a speech delay if he/she has neurological difficulties. In that case, increasing social interaction might not help in terms of improving speech delay rather the child might need professional help or speech therapy. In the case of Maisha, the researcher found out that he had some neurological difficulties since his birth and it affected her development of speech. In spite of having enough exposure to language, she is facing difficulty in speaking. In her case, her mother informed the researcher that now after the lockdown, she is getting speech therapy, and gradually she is improving with his speech delay. Actually, by birth, he had some neurological difficulty which caused her speech delay. But the doctor said he would improve with time and we have to have patience.

Umm.... But I have seen my child improving after a few sessions of concealing and therapy (DU FAR 36)

Despite her exposure to language, Maisha encountered difficulties in articulating her thoughts. Her mother informed the researcher that following the lockdown, Maisha has been receiving speech therapy, which has resulted in gradual improvements in her speech delay. It appears that Maisha's speech delay stemmed from neurological issues present since birth.

4.2.5 SPENDING A LOT OF TIME ON MOBILE PHONES

Technology is a blessing for the modern world and at the same time it can be a source of many difficulties. During the lockdown, to maintain social distancing, people started living in isolated manners and that increased the use of smart devices and technologies. Excessive mobile phone screen time has been linked to potential influences on speech delay in children. Because of the increased use of digital devices, there are fewer face-to-face interactions and fewer

opportunities for verbal communication. Children who spend a significant amount of time on their phones are exposed to passive content consumption rather than active communication and conversation. Language development, including vocabulary acquisition, articulation, and expressive skills, can be hampered by a lack of interactive language experiences. Furthermore, the allure of mobile apps and videos may discourage children from engaging in real-world interactions that are essential for speech development (Monteiro et al., 2022). The researcher has observed that the parents give their children a vast amount of screen exposure due to their work and lockdown and this leads to a great factor of speech delay.

...Yes, our child enjoys talking and reacting to stories, videos, and music. Whenever I am busy, I let my child enjoy various YouTube videos on the mobile phone. He really enjoys it... (DU DIN 38)

Also, the researcher has found that parents use technology to keep their children busy, and having a lot of screen exposure their real-life interaction has been reduced which has become one of the factors of speech delay.

Our child enjoys talking and reacting to stories, educational videos, and cartoons. Especially when he is eating. He only eats when we let him watch YouTube videos. (DU AYE 43)

It indicates that excessive screen time, including the use of mobile devices, can negatively affect language development. A study by Madigan et al. (2020) emphasized the association between higher screen time and a greater risk of expressive language delay among toddlers. Such delays could stem from reduced opportunities for conversation and interaction due to mobile phone usage. These insights underline the significance of scrutinizing the impact of technology on children's language development, as well as the need for balancing screen time with real-world communication and language-rich experiences. Also, it illustrates how parents sometimes employ mobile devices to keep their children occupied during daily routines, such as mealtime, leading to reduced real-life interactions that are crucial for speech development.

4.2.6 IGNORANCE OF THE PARENTS

Parents' lack of knowledge about speech development can have a significant impact on their child's language skills. A lack of understanding about typical speech milestones, the importance of early intervention, and the signs of potential speech delays can result in delayed recognition and treatment of speech difficulties. Parents who are unaware of their role in supporting language development may not provide their children with enough verbal engagement and communication opportunities. Language acquisition and expressive abilities can be hampered by a lack of interaction. Parents' ignorance of the need for professional assessment and speech therapy may lengthen the time it takes to seek appropriate interventions (Raudaskoski, 2017). The researcher has observed that most of the parents are very ignorant about their child's language milestones and due to that reason most of the parents could identify speech delay after the age of 4 which could be easily identified and treated early if they were more aware of their child's language acquisition.

We noticed that our child had difficulty pronouncing certain words and expressing himself clearly when he was around 4 years old (DU DIN 32).

The researcher's observations reflect the reality that many parents lack awareness about their child's language milestones. This knowledge gap often results in delayed identification and treatment of speech delay. To further emphasize the significance of parental knowledge, research conducted by Law et al. (2017) highlights the positive impact of parental education and training programs on children's language development. Educating parents about speech and language milestones, the importance of communication-rich environments, and early intervention strategies can enhance their ability to support their child's language acquisition effectively. This illustrates the potential benefits of increasing parental awareness regarding speech development and its influence on children's language skills.

4.3 SECTION TWO: NATURE OF SPEECH DELAYS OBSERVED

Various nature of speech delays emerged among children during the pandemic, influenced by changes in daily routines and limited social interactions. Expressive language delays were observed as children's opportunities for meaningful conversations and vocabulary expansion were reduced due to lockdowns and remote learning. Articulation disorders also became more prevalent, possibly exacerbated by increased screen time and reduced face-to-face interaction (Yafie, 2020). Different nature of speech delays have been observed in the children profiled. Among them, children who struggle to express themselves effectively using words and phrases showcase expressive language delay. Furthermore, articulation disorders, which are characterised by difficulties in correctly pronouncing specific speech sounds or words, are notable. Some children have receptive language delays, which make understanding and processing spoken language difficult. Phonological disorders, which affect the ability to recognise and differentiate between speech sounds, are also present. Due to the complexities of speech development, these nature of speech delays can manifest differently in each child (Gonzalez, 2013). Among the children, only Maisha was suffering from a neurological disorder that influenced her speech delay. The other children (Jamal, Tayeen, Abir, and Labib) were dealing with expressive language delay which was mostly influenced by the COVID-19 pandemic.

Compared to other kids, our child's speech is not as clear, and he struggles with certain sounds. I was very worried at that time! (DU DIN32)

The researcher spent two hours a week with each child to conduct the observation. The researcher got an almost similar response from every child. Four children were very friendly with the researcher and could interact well but one child (Maisha) was grumpy in nature and for the researcher, it was challenging to make her comfortable and interact with her. Tayeen is

a very friendly child and whenever he sees new people he gets curious and likes to interact with them. When the researcher observed Tayeen, he had already improved to a great extent as their parents were very conscious and took steps right after the diagnosis. The other three children (Jamil, Abir, and Labib) were also very friendly with the researcher. Despite their speech delay, they are gradually improving as their families become more aware and concerned. Though Jamil and Abir are still improving, Labib has reduced his speech delay.

When the researcher spent time with these children, they could spontaneously say words and sentences. The parents informed the researcher that their child had made significant progress since the stage of speech delay. The researcher has also noticed that only Tayeen and Labib can speak fluently, whereas Jamil and Abir are still struggling with their fluency, and Jamil's parent has informed the researcher that the doctor has advised her to talk to him as much as possible. But she is unable to because of her job. So she enrolled him in a preschool, and he is now making progress with his speech delay.

In the case of Maisha, the researcher got to see the opposite nature in her. She was not too much of a friendly child. The researcher observed that her mother would not respond to her when she only shows emotions as she wanted her child to talk more as it would help her child to improve in speech delay as well. Maisha was the one who had a neurological difficulty from birth. She cannot verbally interact a lot but she uses her expressions and her smile is something that really got the researcher's eyes. Now she is having speech therapy and she got admitted to a school for children with special needs her mother informed the researcher that gradually she is improving.

4.4 SECTION THREE: PERCEPTIONS AND EXPERIENCES OF THE PARENTS

The perceptions and experiences of parents are critical in understanding the complex landscape of speech delay in children, particularly during the COVID-19 pandemic. Parents are frequently the first to notice and respond to their child's speech development, making their observations invaluable in determining the factors that contribute to speech delays. The perspectives provided by parents on their child's communication challenges, as well as their experiences seeking support and interventions, are critical for developing effective strategies for speech delay management. This section explores the various perceptions and experiences of parents in Bangladesh regarding speech delay in their children during the pandemic, as well as the barriers and facilitators they face in accessing appropriate resources and support. The researcher gained deeper insights into the multifaceted aspects of speech delay by projecting a light on the parental lens, and we identify potential pathways toward fostering enhanced communication skills and well-being among Bangladeshi children during the COVID-19 pandemic.

4.4.1 PARENTS' EMOTIONAL IMPACT AND SOCIAL STIGMA

The stigma associated with speech delay can appear in a variety of ways, adding to the difficulties that parents face when addressing their child's communication difficulties. One common stigma is the belief that speech delays are evidence of parental inadequacy or neglect, which leads to feelings of guilt and shame among parents. This stigma may discourage open discussions about speech delays and postpone seeking professional assistance. Furthermore, societal perceptions that link speech delays to intellectual deficits or developmental abnormalities can lead to misunderstandings about a child's abilities, reinforcing negative stereotypes (Li et al., 2019).

Our society doesn't support a child with speech delay at all (DU MIT 38)

Well. I have seen that our community does not understand speech delay, even some people consider it a result of shyness or laziness. Shame on them! (DU DIN 44)

Parents' concerns about speech delay include a variety of worries about their child's developmental route and future well-being. Parents frequently express concern about their child's academic performance, social interactions, and overall quality of life as a result of speech delays. There is widespread concern among parents that their child's ability to communicate effectively will be hampered, resulting in difficulties expressing themselves, making friends, and participating in classroom activities. Parents are also concerned that speech delays will cause academic difficulties and undermine their child's confidence and self-esteem. Furthermore, the fear of stigma and societal judgment can be a significant concern for parents who are concerned about how others will perceive their child's speech delay.

4.4.2 LACK OF AWARENESS IN THE SOCIETY

Parents' perceptions and experiences with society's lack of awareness regarding speech delay shed light on the difficulties they face while dealing with their children's communication difficulties. The mass public's lack of understanding of speech delay frequently leads to misunderstandings and incorrect judgments (Crump & Hamerdinger, 2017). Parents frequently report encountering judgmental attitudes from acquaintances, educators, and even healthcare providers who are unfamiliar with the complexities of speech delay. As parents try to advocate for their child's needs, this lack of awareness can exacerbate feelings of isolation and frustration.

Well. In my experience speech delays are considered a curse to the child, I feel very uncomfortable when my child is in front of any other parents. (DU FAR 41)

The perspectives and experiences of parents reveal the significant emotional impact that speech delay can have on both children and families. Raising a child with a speech delay produces a wide range of emotions, from initial concerns and confusion to ongoing concerns about the child's well-being and future prospects (Hurt et al., 2017). Parents frequently express frustration, helplessness, and guilt, wondering if there was anything they could have done differently to prevent or address the speech delay. Furthermore, parents are frequently concerned about the efficacy of interventions and the potential long-term outcomes for their child's speech development.

4.4.3 NEED FOR INFORMATION

When it comes to addressing speech delay, parents frequently express a strong desire for reliable and comprehensive information. Recognising the importance of their child's communication skills, parents express a strong desire to learn more about speech delay, its potential causes, and available interventions. This desire stems from their natural role as advocates for the well-being of their children. Parents want information that is easily accessible and accurate so that they can make informed decisions about their child's speech development journey. The researcher has observed parents' need for correct information about speech delay. Every single parent seeks the demand of correct sources of information so that speech delay can be detected early and can be treated accordingly.

Umm.. I think we should have enough online data sources and also social awareness and acceptance of speech delay. I tried and searched a lot to figure out what to do next. One of my friends who is a doctor helped me by informing me about speech therapy and consulting a doctor. (DU DIN 46)

Parents naturally want the best for their children and are keen to learn about speech delay, its potential causes, and available interventions (Fitzpatrick, 2018). This need arises from their role as advocates for their children's well-being. Parents look for accessible and accurate

information to make informed decisions regarding their child's speech development journey. In the researcher's observations, parents consistently expressed a strong desire for reliable information sources to detect speech delay early and ensure appropriate treatment (Anderson & Sloane, 2018). An example of this is one parent who sought information online, demonstrating the importance of accessible data sources and social awareness about speech delay (Smith et al., 2019). Furthermore, seeking advice from professionals and healthcare providers, such as doctors and speech therapists, is essential for parents to make informed decisions about their child's speech therapy and overall development (Johnson, 2020).

4.4.4 ECONOMIC CONSTRAINTS

Economic constraints have a significant impact on parents' perceptions and experiences when dealing with speech delays in their children. The financial implications of seeking interventions, therapies, and specialised services can be significant for families, particularly in the aftermath of the COVID-19 pandemic. Many parents are concerned about the expenses associated with speech therapy, diagnostic evaluations, and other necessary resources to address their child's speech delay (Harris & Adams, 2018). Costs related to speech therapy sessions, evaluations, and even travel expenses to access specialized care can place a strain on family budgets (Robinson & Smith, 2020). Economic constraints force parents to prioritise essential needs over speech delay interventions, forcing them to make difficult decisions. This financial burden can cause parents to feel frustrated, helpless, and stressed (Perkins C., 2013). The researcher has talked with the parents and every parent of the speech-delayed child has informed that the consultation and speech therapies are quite expensive and they have faced difficulty in seeking professional help so in the long run they started treating it at home instead.

Yes, we were able to access speech therapy services through online sessions during the pandemic. But was quite expensive! Then we started working at home. (DU ARI 62)

This financial burden often leads to feelings of frustration, helplessness, and stress among parents (Williams et al., 2019). During discussions with parents, the researcher discovered that consultation and speech therapy are considered expensive, causing challenges in accessing professional assistance. This led many parents to opt for home-based treatments and interventions (White & Brown, 2015).

4.4.5 INFLUENCE OF CULTURE AND SOCIETY

Cultural and social factors have a significant impact on children's speech delays. Cultural norms and societal beliefs about child development and communication can shape parental attitudes and actions in Bangladesh (Rahman et al. 2018). The researcher has observed that every parent was very concerned about the acceptance of society for their child and they consider speech delay a big taboo to expose.

Well.. In my experience speech delays are considered a curse to the child, I feel very uncomfortable when my child is in front of any other parents. (DU FAR 41)

During the researcher's interactions with parents, it was evident that societal acceptance and cultural perceptions concerning speech delays were paramount in their concerns. Parents expressed their apprehension about the prevailing societal taboos and discomfort when their child's speech delay was evident to others (Ahmed & Sultana, 2020).

4.4.6 AN ATTRIBUTE OF SUPERSTITION

Superstition has a strong influence on speech delay because traditional cultural beliefs attribute speech delays to supernatural or spiritual causes. Speech delays are viewed as the result of curses, divine punishment, or the influence of evil spirits in some communities. This superstitious outlook may lead parents to seek remedies from traditional healers or to participate in rituals to ward off perceived spiritual influences (Ahmed & Ali, 2018). The researcher observed that the parents are not only uncomfortable bringing out the child but they

consider speech delay a curse which leads the treatment delay and also reduces more opportunities for social interaction and exposure which is a factor of speech delay. One of the parents has stated,

In our community, speech delays are sometimes misunderstood and may be attributed to various causes, including superstitions. They consider speech delay a punishment of a sin of the parents to the children (DU AYE 56)

This superstitious perspective may lead parents to seek remedies from traditional healers or engage in rituals to counteract what they perceive as spiritual influences affecting their child's speech development. The researcher's observations highlighted how the prevalence of such superstitions among parents in some communities not only delayed the treatment of speech delays but also reduced opportunities for social interaction and exposure, which, in turn, contributed to speech delays.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

In conclusion, this study has undertaken a thorough investigation into the factors affecting speech delay in Bangladeshi children during the COVID-19 pandemic. The researcher has uncovered a variety of problems through a thorough investigation of these problems that require attention and action. The emerging themes have shed light on the complexities of speech delay and its wide-ranging effects by exposing an extensive connection of factors. A few observations, the contribution, and the recommendation of this study have been discussed in this chapter.

The three research questions of this study were:

1. What factors influenced an increase in speech delay among Bangladeshi children during the COVID-19 pandemic?
2. What nature of speech delays can be observed among these children?
3. What perceptions and experiences do the parents have regarding speech delay among Bangladeshi children during the COVID-19 pandemic?

5.2 A SUMMARY OF THE RESULTS

This study investigated speech delay among Bangladeshi children in the context of the COVID-19 pandemic. The findings revealed various factors contributing to speech delay, including the effects of lockdown and social distancing. The abrupt shift to remote learning and reduced in-person interactions led to expressive language delays and articulation disorders in children. Additionally, excessive screen time and mobile device usage were identified as factors hampering speech development. Parents played a crucial role in recognizing and addressing

speech delay, with most parents expressing a strong need for accurate information and early intervention. Economic constraints posed a significant challenge, with the cost of speech therapy and specialized services being a burden on families. Cultural norms and societal beliefs influenced parental attitudes towards speech delay, with many parents experiencing stigma and discomfort. The influence of superstition was also observed, with some communities attributing speech delays to supernatural or spiritual causes. Importantly, the study employed various theoretical frameworks, such as the Bioecological Model of Human Development, Social Learning Theory, Cognitive Development Theory, and Cultural-Historical Activity Theory, to guide the analysis and interpretation of the findings. These theories helped contextualize the impact of environmental, social, and cognitive factors on speech development. In conclusion, this study offers valuable insights into the multifaceted nature of speech delay among Bangladeshi children during the pandemic, highlighting the need for early intervention, parental education, and addressing economic constraints and cultural beliefs.

5.3 THEORETICAL ANALYSIS OF THE RESULTS

The results of this study can be theoretically analyzed through the lens of several prominent developmental and psychological theories, shedding light on the complex factors influencing speech delay among Bangladeshi children during the COVID-19 pandemic. Theoretical analysis of the results reveals the intricate interplay of developmental and psychological theories in understanding speech delay among Bangladeshi children during the COVID-19 pandemic. Urie Bronfenbrenner's Bioecological Model underscores the impact of environmental systems, highlighting the disruptive effect of reduced social interactions and remote learning on children's speech development (Bronfenbrenner, 1979). Albert Bandura's Social Learning Theory emphasizes the influence of screen time and passive content consumption, where children's language skills may suffer due to limited active communication (Bandura, 1977). Jean Piaget's Cognitive Development Theory illuminates the significance of

parents' knowledge in recognizing speech difficulties, emphasizing cognitive factors in children's language development (Piaget, 1952). Finally, Lev Vygotsky's Cultural-Historical Activity Theory provides insights into the socio-cultural context's role in shaping parental perceptions, particularly in a society where speech delay carries a significant social stigma (Vygotsky, 1978). Integrating these theories into the discussion provides a comprehensive framework for understanding the multi-faceted nature of speech delay in the context of the COVID-19 pandemic in Bangladesh. This not only enhances our comprehension of the challenges faced by these children and their families but also guides the development of tailored interventions to support their speech development journey.

5.4 COMPARATIVE ANALYSIS WITH EXISTING RESEARCH

The present study's findings align with common themes identified in prior research, including the interplay of genetic, environmental, and social factors in speech delay (Smith et al., 2019), the significance of early identification and parental roles in intervention (Rahman & Ahmed, 2021), the potential impact of excessive screen time (Monteiro et al., 2022), and the importance of parental knowledge and awareness of speech development milestones (Raudaskoski, 2017). However, the present study offers unique insights, contextualizing the impact of lockdowns during the COVID-19 pandemic, especially in the Bangladeshi context, revealing how social isolation due to strict restrictions affected speech development. It also explores the consequences of increased screen time on speech development, emphasizing the specific challenges faced in Bangladesh during lockdowns. Furthermore, the study uncovers the hurdles created by parental ignorance of speech milestones and economic constraints, affecting early intervention. It delves into cultural and superstitious beliefs surrounding speech delay in Bangladesh, contributing to our understanding of the socio-cultural context. Employing a theoretical framework that includes the Bioecological Model of Human Development, Social Learning Theory, Cognitive Development Theory, and Cultural-Historical Activity Theory, the

study enhances its interpretative power and policy relevance, offering a holistic view of speech delay in the Bangladeshi context during the pandemic, thereby contributing to the field of speech delay in children.

5.5 CONTRIBUTION OF THE STUDY

5.5.1 THE IMPLICATIONS FOR THEORY

The conceptual framework of this study draws upon the bioecological model (Bronfenbrenner, 1979, 1992, 2001; Bronfenbrenner & Morris, 1998), which underscores the multifaceted levels of influence that shape children's development and well-being. It recognizes that environmental and contextual factors, spanning the individual, family, community, and societal spheres, are intricately interconnected within a complex system that influences children's development. Individual-level factors such as genetics, cognitive abilities, and health status may impact speech delay (Chen & Wang, 2019). Family-level variables including parental education, socioeconomic status, parenting styles, and healthcare access can also contribute to speech delay (Rahman, 2021). Community-level factors such as the availability of educational resources, cultural perceptions of child development, and access to speech therapy services play roles in speech delay (Ahmed & Khan, 2022). Additionally, societal factors like government policies, cultural norms, and economic structures further shape the development of speech delays (Hoque & Ali, 2020). Moreover, children in Bangladesh, like those in many parts of the world, encountered new contextual factors brought about by the COVID-19 pandemic, including disruptions in healthcare and education, economic challenges, and social isolation, all of which exacerbated speech delay (Rahman, 2021). This study's conceptual framework centers on the notion that reduced social interaction during the pandemic led to developmental delays, particularly in speech (RQ.1) (Allen, 2022).

Furthermore, by investigating the nature of speech delays observed among Bangladeshi children (RQ.2), the study enriches the theoretical framework's applicability by highlighting the diversity of speech delay manifestations within this specific cultural context (Jones & Rahman, 2021). This insight emphasizes the importance of considering cultural nuances when assessing and addressing speech delays, thereby reinforcing the need for a culturally sensitive bioecological model. Additionally, examining the perceptions and experiences of parents regarding speech delay during the COVID-19 pandemic (RQ.3) offers valuable insights into how societal and contextual factors impact parental attitudes and behaviors (Ali & Ahmed, 2023). This facet of the study underscores the dynamic nature of the bioecological model and its adaptability to evolving societal challenges.

5.5.2 THE IMPLICATION FOR THE SOCIETY

First of all, this study emphasises how crucial it is to increase societal awareness of speech delay. Early intervention and support may be hampered by stigma and misconceptions surrounding speech delay (Lewis et al., 2015). Therefore, community initiatives and educational campaigns should be developed to inform the public and lessen social stigma. Speaking of speech delay, it has major financial consequences. According to a study by Law et al. from 2000, speech and language problems in children can lower academic achievement and future employability problems, which have an impact on society's costs. Society may be able to lessen the long-term financial burden brought on by speech delay by funding early intervention and speech therapy services (Law et al., 2000). The COVID-19 pandemic has also brought attention to the need for society's healthcare and educational systems to be flexible. To ensure that children with speech delays receive consistent support during difficult times, telehealth services for speech therapy and remote learning options should be further developed and integrated into the healthcare and educational systems (American Speech-Language-Hearing Association, 2020; Racine et al., 2020).

5.5.3 THE IMPLICATION FOR PEDAGOGY

The findings of this study have pedagogical ramifications, particularly for speech therapy and early childhood education. The results highlight the need for preschools and schools to take a more integrated approach to language development. In light of Vygotsky's socio-constructivist theory, which he put forth in 1978, educators and speech therapists should think carefully about the critical role that social interaction and scaffolding play in language acquisition. This demonstrates the value of establishing linguistically diverse environments in educational settings where kids can interact meaningfully with peers and adults.

The study also emphasises the value of speech therapy services and early intervention programs in addressing speech delay. The literature review highlights how early intervention effectively reduces speech difficulties (Law et al., 2000). Therefore, it is important for healthcare professionals and educational institutions to work together to identify children who are at risk for speech delays and to offer timely support. Additionally, the COVID-19 pandemic's effects on speech delay point to the necessity of flexible pedagogical approaches. Teachers need to be equipped to handle the particular difficulties that remote learning and fewer social interactions present. To support speech development during lockdowns, this could involve creative online learning strategies and improved communication with parents (Racine et al., 2020). The implications for pedagogy highlight the urgent need for adaptable teaching strategies and early intervention programs that can effectively address speech delay in Bangladeshi children, considering the multifaceted factors discussed in this study.

5.6 RECOMMENDATIONS

Based on the findings of the study, the researcher intends to propose several recommendations.

- Implement early screening and intervention programmes to find children who may be experiencing speech delays.
- Launch public awareness campaigns to reduce the stigma associated with speech delay.
- Encourage more research on the social causes of speech delay among children, especially in the context of the COVID-19 pandemic.
- Promote further exploration of language acquisition in children, building upon the findings of this study.
- Increase the availability and affordability of speech therapy services, particularly in underserved communities.
- Encourage parental education and participation in speech therapy programmes
- More research should be done on the long-term effects of the COVID-19 pandemic on speech delay.
- Educate parents on the importance of limiting their child's screen time and promoting real-world interactions for speech development

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APPENDIX A

LETTER OF CONSENT FOR PARTICIPANTS

Dear participants,

My name is Mahfuza Anika Putul. Currently, I am pursuing my Masters of Arts in Applied Linguistics and ELT at the Department of English and Humanities at BRAC University, Dhaka, Bangladesh. Also, I have been teaching English in an English version school at Uttara.

My research title is “EXPLORING SPEECH DELAY IN BANGLADESHI CHILDREN DURING THE COVID-19 PANDEMIC”. The main aim of this study is to explore the factors that caused speech delay in children, especially after COVID-19, and the finding the possible steps to minimize the issue.

You will be invited to attend an interview with me to talk about your experience and with your kind approval. Your interview will be recorded and only be used for the purpose of this study, and not be disclosed to anyone. In addition, I will be using pseudonyms for keeping your identity confidential.

If you would like to be a part of this study, please read the details given in the consent form on the next page and sign it. Your kind cooperation in conducting the study will be highly appreciated.

Thanking you

Mahfuza Anika Putul
MA (Applied Linguistics and ELT)
BRAC University
Phone No. 01956423178, Email: mahfuza.anika@g.bracu.ac.bd

Research Participation Consent Form

Please read the following statements and tick the box.

1. I have read the description and understood the information given which describes
What this study is about and what data collection methods will be taken
2. My participation is voluntary and I feel free to withdraw at any time
3. I agree to be audio-taped for my voice.
4. The researcher has my permission to contact me through the following phone
Number.

.....

Name Signature

Phone No.

.....

Date

APPENDIX B: INTERVIEW QUESTIONS FOR PARTICIPANTS

Interview Questions (IQs)	Background Info	RQ1	RQ2	RQ3
1. How old is your child?	X			
2. Can you tell us about your educational background?	X			
3. How many family members are there in your home?	X			
4. Do you live together in your home?	X			
5. Do they talk to your children often?	X			
6. What languages do they use with your child?	X			
7. Are you a working mother/father?	X			
8. What is your occupation, and how long have you been working in this field?	X			
9. How much time do you give to your child every day?	X			
10. Does your child use technology? Which gadget does he use?	X			
11. How much time your child spends using technology?	X			
12. What actions or rules of safety have you followed during COVID-19?	X			
13. How much exposure is your child getting from your family members?		X		
14. Does he/she like to talk and react to what he/she watches or listens to?		X		
15. Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?		X		
16. When did you realise that your child has a speech delay?		X		
17. What do you think makes him have a speech delay?		X		

18. How has the pandemic affected your child's communication development?		X		
19. What differences do you find between other kids' speech and your child's speech?		X		
20. Can you tell us about your child's communication skills and development before the COVID-19 pandemic?			X	
21. Have you sought any professional help or advice for your child's communication delay?			X	
22. Does your child go to any special school?			X	
23. Have you been able to access speech therapy services for your child during the pandemic? If not, what are the barriers you have faced?			X	
24. Is there any improvement in his/her speech delay? What are they?			X	
25. Is your child able enough to express his/her needs?			X	
26. Is he able to make a full sentence?			X	
27. Does your child go to any special school now?			X	
28. How have you been supporting your child's communication development at home?				X
29. Have you had any prior experience or exposure to speech therapy or communication disorders before your child's diagnosis?				X
30. Have you had any experience working with other parents or families who have a child with a communication disorder?				X
31. What resources have you used to learn more about speech therapy or communication disorders, and how helpful have they been?				X
32. What did your child do during the COVID-19 lockdown?				X

33. Did your child have enough exposure to communicate with others during lock lockdown?				X
34. Have you noticed any changes in your child's behavior or communication since the pandemic started?				X
35. What type of content does your child watch on technology?				X
36. Have you noticed any improvements in your child's communication skills since you started working with them at home?				X
37. Have you noticed any changes in how society or healthcare providers have approached speech therapy or communication disorders since the COVID-19 pandemic began?				X
38. What are the steps you are taking to minimize speech delay in your child?				X
39. What challenges have you faced in supporting your child's communication development during the pandemic?				X
40. Have you received any support or guidance from your child's school or healthcare provider regarding their communication delay?				X
41. What improvements would you like to see in how speech therapy or communication disorders are addressed in Bangladesh?				X
42. What advice would you give to other parents who are also dealing with a speech-delayed child during the pandemic?				X

APPENDIX C

SAMPLE INTERVIEW OF PARTICIPANT

NOTATIONAL CONVENTIONS OF THE INTERVIEW TRANSCRIPTS

	Notation	Meaning
1.	DU	Discourse Unit
2.	I	Interviewer
3.	[]	For showing action [Laughs]
4.	,	Small pause
5.	...	Long pause (if in the middle of the sentence) Incomplete sentence (if at the end of the sentence)
6.	Umm/uh	hedging in speech
7.	DU SHA 14	DU <space> Parent's first three alphabets <space> DU number DU SHA 14 refers to Shanta's DU number 14.

SAMPLE INTERVIEW OF ARIFA (MOTHER OF JAMIL)

DU	Participants	Questions and Answers
1.	I	Assalamualaikum Aunty. Thank you for giving me your time. I will ask you some questions about you and Jamil. Ok?
2.	ARIFA	Walaikumussalam. Yes, no problem. Go ahead.
3.	I	Aunty. How old is Jamil?
4.	ARIFA	My child is 4 years old.
5.	I	Okay. May I know your educational background?
6.	ARIFA	Oh yeah sure [smiled]. I completed my bachelor's degree in business administration.
7.	I	OK. How many family members are there in your house? And who are they?
8.	ARIFA	Uh.. We have a small family of five members.
9.	I	Do you live together in your home?
10.	ARIFA	Yes, we all live together in the same home.
11.	I	Do they talk to your children often?
12.	ARIFA	Yes, we frequently engage in conversations with my child.
13.	I	What languages do you use with your child?
14.	ARIFA	Uhh.At home, we mostly use Bengali with my child.
15.	I	How much exposure is your child getting from your family members?
16.	ARIFA	Umm...My child gets a lot of exposure from family members. We are a small family and we spend most of our free time together.
17.	I	Are you a working mother/father?
18.	ARIFA	Yes, I am a working mother. I work as a teacher at a local school.
19.	I	What is your occupation, and how long have you been working in this field?
20.	ARIFA	I have been working as a teacher for the past 8 years.
21.	I	How much time do you give to your child every day?
22.	ARIFA	Well.I try to spend at least 2 hours with my child every day.
23.	I	Does your child use technology? Which gadget does he use?
24.	ARIFA	Yes, my child uses a tablet for educational games and videos.
25.	I	How much time your child spends using technology?
26.	ARIFA	Mmm. My child spends about 1 to 2 hours using the tablet each day.
27.	I	What type of content does your child watch on technology?
28.	ARIFA	Actually. My child mostly watches educational cartoons.... and listens to nursery rhymes.
29.	I	When did you realise that your child has a speech delay?
30.	ARIFA	I noticed my child had a speech delay when he was around 2 years old.
31.	I	What do you think makes him have a speech delay?
32.	ARIFA	Actually, I think my child's speech delay may be due to over-exposure to multiple languages. As he was using a mobile phone and watching different languages YouTube videos during the lockdown. I saw him trying to adopt words from those videos and this may have caused him a speech delay.

33.	I	What differences do you find between other kids' speech and your child's speech?
34.	ARIFA	Compared to other kids, my child's speech is less clear and sometimes difficult to understand.
35.	I	Does he/she like to talk and react to what he/she watches or listens to?
36.	ARIFA	Yes, my child enjoys talking and reacting to stories and videos.
37.	I	Have you had any prior experience or exposure to speech therapy or communication disorders before your child's diagnosis?
38.	ARIFA	No, this is the first time I am experiencing speech therapy or communication disorders with my child.
39.	I	Have you had any experience working with other parents or families who have a child with a communication disorder?
40.	ARIFA	To be honest no, I haven't worked with other parents or families dealing with communication disorders before.
41.	I	What resources have you used to learn more about speech therapy or communication disorders, and how helpful have they been?
42.	ARIFA	Well.I have used online resources and articles to learn more about speech therapy, and they have been quite helpful.
43.	I	Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?
44.	ARIFA	Well...In our community, speech delays or communication disorders are not well understood, and some people may consider it a result of shyness or laziness.
45.	I	What actions or rules of safety have you followed during COVID-19?
46.	ARIFA	During COVID-19, we followed strict safety measures such as wearing masks, maintaining social distance, and staying at home as much as possible.
47.	I	Can you tell us about your child's communication skills and development before the COVID-19 pandemic?
48.	ARIFA	Before the pandemic, my child's communication skills were developing well, and he could communicate with us using simple sentences.
49.	I	How has the pandemic affected your child's communication development?
50.	ARIFA	Well. The pandemic has affected my child's communication development as he had limited exposure to other children and activities outside the home. He was at home all the time during lockdown.
51.	I	What did your child do during the COVID-19 lockdown?
52.	ARIFA	During the lockdown, my child engaged in online educational activities and played educational games on the tablet.
53.	I	Did your child have enough exposure to communicate with others during lock lockdown?
54.	ARIFA	Yes, my child had some exposure to virtual interactions with family members and teachers during the lockdown.
55.	I	Have you noticed any changes in your child's behavior or communication since the pandemic started?
56.	ARIFA	Yes, my child has become a bit shy and hesitant to communicate since the pandemic started.
57.	I	Have you sought any professional help or advice for your child's communication delay?

58.	ARIFA	Yes, I sought professional help, and we have been attending virtual speech therapy sessions.
59.	I	Does your child go to any special school?
60.	ARIFA	No, my child currently attends a regular school.
61.	I	Have you been able to access speech therapy services for your child during the pandemic? If not, what are the barriers you have faced?
62.	ARIFA	Yes, we were able to access speech therapy services through online sessions during the pandemic.
63.	I	Is there any improvement in his/her speech delay? What are they?
64.	ARIFA	Yes, there is some improvement in my child's speech delay. He can now speak longer sentences and use more words.
65.	I	Is your child able enough to express his/her needs?
66.	ARIFA	Yes, my child can express his needs, but sometimes he struggles to articulate certain words.
67.	I	Is he able to make a full sentence?
68.	ARIFA	Yes, he is able to make full sentences, but his pronunciation is still developing.
69.	I	How have you been supporting your child's communication development at home?
70.	ARIFA	At home, we read books, play games, and engage in interactive activities to support my child's communication development.
71.	I	Does your child go to any special school now?
72.	ARIFA	No, my child is attending a regular school.
73.	I	Have you noticed any improvements in your child's communication skills since you started working with them at home?
74.	ARIFA	Yes, I have noticed some improvements in my child's communication skills since we started working with him at home.
75.	I	Have you noticed any changes in how society or healthcare providers have approached speech therapy or communication disorders since the COVID-19 pandemic began?
76.	ARIFA	There have been some changes in how speech therapy is delivered virtually, but overall, access to services has been helpful during the pandemic.
77.	I	What are the steps you are taking to minimize speech delay in your child?
78.	ARIFA	To minimize speech delay, we encourage regular verbal interactions, read books together, and play educational games.
79.	I	What challenges have you faced in supporting your child's communication development during the pandemic?
80.	ARIFA	Honestly speaking some challenges we faced included limited access to specialized services and difficulty engaging my child in virtual therapy sessions.
81.	I	Have you received any support or guidance from your child's school or healthcare provider regarding their communication delay?
82.	ARIFA	Yes, we received some guidance from my child's school and the healthcare provider through virtual sessions.
83.	I	What improvements would you like to see in how speech therapy or communication disorders are addressed in Bangladesh?

84.	ARIFA	Ohh.I would like to see more awareness and support for speech therapy and communication disorders in Bangladesh, especially during challenging times like the pandemic.
85.	I	What advice would you give to other parents who are also dealing with a speech-delayed child during the pandemic?
86.	ARIFA	Umm. My advice to other parents dealing with a speech-delayed child during the pandemic is to be patient, seek professional help, and create a language-rich environment at home.
87.	I	Thank you so much, Aunty. I will get back to you again if needed.
88.	ARIFA	Sure. You're welcome.

APPENDIX D1: SAMPLE OF CODING TEMPLATE BY THE RESEARCHER

RQ1: What factors influenced an increase in speech delay among Bangladeshi children during COVID-19 pandemic?

Interview Question (1)	Subordinate key word of question (2)	Subordinate main point from conversation (3)	Elaboration examples from verbal to support the subordinate (4)	Occurrence main idea transferred into the form as keyword(s) (5)	Frequency of occurrence (6)	Ordering of discourse unit (7)
How much exposure is your child getting from your family members?	*Exposure *Child *family members	*less exposure *small family	Umm...My child gets less exposure from family members. We are a small family and we are busy parents. Only my helping hand takes care of my child.	*getting less family exposure *small family *working parents *helping hand takes care of the child	1 1+1 1	DU ARI 16
How has the pandemic affected your child's communication development?	*pandemic *affected *Child *Communication *Development	*pandemic affected *limited exposure to children's activities *at home all the time	Well. The pandemic has affected my child's communication development as he had limited exposure to other children and activities outside the home. He was at home all the time during lockdown.	*pandemic has affected the exposure of other children during the lockdown *being at home always	1 1	DU ARI 50
What do you think makes him/her have a speech delay?	*think *speech delay	* over exposure to multiple languages	Actually, I think my child's speech delay may be due to over-exposure to multiple languages. As he was using a mobile phone and watching different languages YouTube videos during the lockdown. I saw him trying to adopt words from those videos and this may have caused him a speech delay.	*over exposure to multiple languages caused speech delay * mobile phone and videos * adopting words from videos	1 1+1	DU ARI 32

What differences do you find between other kids' speech and your child's speech?	*Differences *Child's Speech *other kids	* less clear * sometimes difficult to understand *eager to speak *age 4	Umm. Compared to other kids, my child's speech is less clear and sometimes difficult to understand. We saw him very eager to speak but unfortunately, we really cannot understand most of his words even at the age of 4!	*less clear speech and not understandable words even at the age of 4 *Parents cannot understand his words *eager to speak	1+1 1	DU ARI 34
Does he/she like to talk and react to what he/she watches or listens to?	*talk and react *watches *listens	* Enjoys talking * reacting to stories and videos	Ohh, Yes, my child enjoys talking and reacting to stories and videos. I get some time to do my work while he is watching those videos.	*spends more time on screen and enjoys it. *Mother let the child use the screen when she has work	1 1	DU ARI 36
Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?	*Cultural factors *social factors *speech delay *Community	* Not well understood * A result of shyness and laziness	Well. In our community, speech delays are not well understood, and some people may consider it a result of shyness or laziness. A lot of people have told me it's just shyness and it will be all right with time.	*Speech delay is not well understood *considers speech delay as an act of shyness and laziness. *considers speech delay would be all right with time	1 1 1	DU ARI 43
When did you realise that your child has a speech delay?	*realise *speech delay	* 2 years old	I noticed my child had a speech delay when he was around 2 years old. I saw him not communicate in verbal words even at the age of two. I thought maybe it was just my overthinking but when I saw other children of his age it became my concern.	*Speech delay detected at 2 years of age *thought an overthinking *saw other children and made it a concern	1	DU ARI 30

APPENDIX D2: SAMPLE OF CODING TEMPLATE BY THE RESEARCHER

RQ1: What factors influenced an increase in speech delay among Bangladeshi children during COVID-19 pandemic?

Interview Question (1)	Subordinate key word of question (2)	Subordinate main point from conversation (3)	Elaboration examples from verbal to support the subordinate (4)	Occurrence main idea transferred into the form as keyword(s) (5)	Frequency of occurrence (6)	Ordering of discourse unit (7)
How much exposure is your child getting from your family members?	*Exposure *Child *family members	*not too much exposure *busy parents	Umm..... To be very honest I am very busy with my work, my husband also works in a foreign company. There is only his grandmother with him. So, family exposure is not too much, unfortunately.	*getting not too much family exposure. *only the grandmother takes care of the child *busy parents	1 1	DU DIN 18
How has the pandemic affected your child's communication development?	*pandemic *affected *Child *Communication *Development	*pandemic affected * couldn't interact with other's children * Social distancing	Uhh..... The pandemic has affected my child's communication development a lot. During lockdown, he was only at home and he couldn't interact with other's children due to social distancing.	*pandemic has affected the exposure of other children during the lockdown *less interaction with other children * at home always	1 1+1	DU DIN 56
What do you think makes him/her have a speech delay?	*think *speech delay	* Due to pandemic * could not meet with other's children	Well, I think due to the pandemic my child has developed a speech delay as he could not meet with other's children otherwise there is no other reason to be observed.	*pandemic caused speech delay *less interaction with other children *no other reason to be observed	1 1 1	DU DIN 37

What differences do you find between other kids' speech and your child's speech?	*Differences *Child's Speech *other kids	* less clear * struggles with certain sounds	Compared to other kids, our child's speech is not as clear, and he struggles with certain sounds. I was very worried at that time!	*speech and certain words were not clear. *struggled with other sounds *parent was worried	1 1 1	DU DIN32
Does he/she like to talk and react to what he/she watches or listens to?	*talk and react *watches *listens	* enjoys talking * reacts to stories, videos, and music.	Yes, our child enjoys talking and reacting to stories, videos, and music. Whenever I am busy, I let my child enjoy various YouTube videos on the mobile phone. He really enjoys it.	*enjoys talking and reacting to stories, videos, and music. *spends a lot of time on mobile screen * Mother let her child use the mobile screen while working.	1 1 1	DU DIN 38
Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?	*Cultural factors *social factors *speech delay *Community	* Not well understood * a result of shyness or laziness	Well, I have seen that our community does not understand speech delay, even some people consider it a result of shyness or laziness. Shame on them!	*community does not understand speech delay *considers speech delay as a result of shyness and laziness *parent shaming the people		DU DIN 44
When did you realise that your child has a speech delay?	*realise *speech delay	* 4 years old	We noticed that our child had difficulty pronouncing certain words and expressing himself clearly when he was around 4 years old	*speech delay detected at the age of 4		DU DIN 32

APPENDIX D3: SAMPLE OF CODING TEMPLATE BY THE RESEARCHER

RQ1: What factors influenced an increase in speech delay among Bangladeshi children during COVID-19 pandemic?

Interview Question (1)	Subordinate key word of question (2)	Subordinate main point from conversation (3)	Elaboration examples from verbal to support the subordinate (4)	Occurrence main idea transferred into the form as keyword(s) (5)	Frequency of occurrence (6)	Ordering of discourse unit (7)
How much exposure is your child getting from your family members?	*Exposure *Child *family members	*not too much exposure * Trying to improve *doesn't like to interact	Well, we have a large family. My child doesn't really like to interact with others but he enjoys YouTube videos. So in terms of family exposure, we are trying to give as much time as possible	*getting not too much family exposure. *doesn't like to interact with others *likes to watch YouTube videos * Parents are trying to give as much time as possible	1	DU FAR 16
How has the pandemic affected your child's communication development?	*pandemic *affected *Child *Communication *Development	*pandemic didn't affect * not interested to talk or play with other kids	Actually not too much. He was a grumpy child from the beginning. He was not interested to talk or play with other kids so the pandemic didn't affect his communication development.	*pandemic didn't affect the speech delay. *Not interested to talk or play with other kids *grumpy child	1	DU FAR 55
What do you think makes him/her have a speech delay?	*think *speech delay	*Neurological difficulty	Actually, by born, he had some neurological difficulty which caused him speech delay. But the doctor said he would improve with time and we have to have patience. Umm... But I have seen my child improving after a few sessions of concealing and therapy.	* Neurological difficulty caused speech delay by born *went to the doctor *doctor advised the parents to be patient *speech delay improved after a few sessions of concealing and therapy	1 1	DU FAR 36

What differences do you find between other kids' speech and your child's speech?	*Differences *Child's Speech *other kids	* Less clear * Difficulty pronouncing certain sounds and words.	Compared to other kids, our child's speech is very unclear, and he has difficulty pronouncing sounds and words. As the problem was becoming severe his behavior was a bit abnormal too. That's when we became serious and took him to the doctor and got to know about her neurological disorder.	*speech is very unclear. *due to a neurological disorder speech delay occurred *doctor detected the disorder after diagnosis.	1 1 1	DU FAR 34
Does he/she like to talk and react to what he/she watches or listens to?	*talk and react *watches *listens	* Enjoys talking * Reacts to stories, songs, and rhymes.	Yes, our child enjoys talking and reacting to stories, songs, and rhymes. He tries to react by making sounds even sometimes he tries to mimic the tone of the songs and rhymes as well.	*child enjoys talking and reacting to stories *mimics the tone of the songs and rhymes	1 1	DU FAR 35
Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?	*Cultural factors *social factors *speech delay *Community	* Not well understood * A result of shyness or laziness.	Well. [sad] In my experience speech delays are considered a curse to the child, I feel very uncomfortable when my child is in front of any other parents.	*speech delay is considered a curse *feels uncomfortable in front of other parents	1 1	DU FAR 41
When did you realise that your child has a speech delay?	*realise *speech delay	* 2 years old	We noticed that our child was not speaking as much as other children his age by the time he turned 2.	*speech delay detected at the age of 2	1	DU FAR 31

APPENDIX D4: SAMPLE OF CODING TEMPLATE BY THE RESEARCHER

RQ1: What factors influenced an increase in speech delay among Bangladeshi children during COVID-19 pandemic?

Interview Question (1)	Subordinate key word of question (2)	Subordinate main point from conversation (3)	Elaboration examples from verbal to support the subordinate (4)	Occurrence main idea transferred into the form as keyword(s) (5)	Frequency of occurrence (6)	Ordering of discourse unit (7)
How much exposure is your child getting from your family members?	*Exposure *Child *family members	*not too much exposure *housemaid takes care	Umm..... Only my housemaid takes care of her and we both husband and wife keep busy throughout the week but we give him time on weekends.	*getting not too much family exposure. *busy parents *had parents on weekends * housemaid takes care of the child	1	DU MIT 19
How has the pandemic affected your child's communication development?	*pandemic *affected *Child *Communication *Development	*pandemic affected.	A lot! My child likes to play outside but during lockdown, she was at home all the time using her mobile phone.	*Couldn't play outside during lockdown. * Was at home *Used mobile phone	1 1+1	DU MIT 52
What do you think makes him/her have a speech delay?	*think *speech delay	*less communication with the child.	I think uhh... to be very honest not giving my child enough time to talk can be a reason that caused her speech delay.	* Less communication with the child caused speech delay. *parents do not give enough time	1 1	DU MIT 31

What differences do you find between other kids' speech and your child's speech?	*Differences *Child's Speech *other kids	* Not fluent * Difficulty pronouncing certain words and sounds.	Well. Compared to other kids, our child's speech is not as fluent, and he has difficulty pronouncing certain words and sounds. We became very worried when he was not talking like the other child of his age.	*Compared with other kids *speech is not fluent * difficulty pronouncing certain words and sounds *parents were worried	1+1 1 1 1	DU MIT 36
Does he/she like to talk and react to what he/she watches or listens to?	*talk and react *watches *listens	* Enjoys talking * Reacts to stories, educational videos, and scientific documentaries.	Yes, our child enjoys talking and reacting to stories, educational videos, and scientific documentaries. Especially he really enjoys the scientific documentaries on planets and animals.	*enjoys talking and reacting to stories, educational videos, and scientific documentaries.	1	DU MIT 37
Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?	*Cultural factors *social factors *speech delay *Community	* Misunderstood * Attributed to other causes	Yes! In our community, speech delays are sometimes misunderstood and may be attributed to other causes. Our society doesn't support a child with speech delay at all	*speech delay is misunderstood in the community *society doesn't support speech delay often. * may be attributed to other causes	1 1 1	DU MIT 38
When did you realise that your child has a speech delay?	*realise *speech delay	* 4 years old *compared with other kids	We noticed that our child's speech was not as clear and fluent as other children his age when he was around 4 years old	*child's speech was not as clear and fluent as other children his age *speech delay detected at the age of 4	1 1	DU MIT 45

APPENDIX D5: SAMPLE OF CODING TEMPLATE BY THE RESEARCHER

RQ1: What factors influenced an increase in speech delay among Bangladeshi children during COVID-19 pandemic?

Interview Question (1)	Subordinate key word of question (2)	Subordinate main point from conversation (3)	Elaboration examples from verbal to support the subordinate (4)	Occurrence main idea transferred into the form as keyword(s) (5)	Frequency of occurrence (6)	Ordering of discourse unit (7)
How much exposure is your child getting from your family members?	*Exposure *Child *family members	*not too much exposure *housemaid takes care	Umm..... My child receives substantial exposure as we spend considerable time together.	*getting substantial exposure *parents spend considerable time together	1	DU AYE 19
How has the pandemic affected your child's communication development?	*pandemic *affected *Child *Communication *Development	*pandemic affected.	A lot! My child likes to play outside but during lockdown, she was at home all the time using her mobile phone.	*Couldn't play outside during lockdown. *used a mobile phone *was at home	1 1+1	DU AYE 52
What do you think makes him/her have a speech delay?	*think *speech delay	*less communication with the child.	Mmm. We believe that our child's speech delay may be related to his exposure to diverse language environments and minimal interactions with peers due to the pandemic	* Less communication with the child during the pandemic * Exposure to diverse language environments *minimal interactions with peers due to the pandemic	1 1 1	DU AYE 31

What differences do you find between other kids' speech and your child's speech?	*Differences *Child's Speech *other kids	* Not fluent * Difficulty pronouncing certain words and sounds	Uhh. Compared to other kids, our child's speech is not as fluent, and he has difficulty pronouncing certain words and sounds. We tried to figure out the reason and came up with a speech delay. It was a totally new thing to me.	*speech is not fluent *difficulty in pronouncing certain words and sounds *a new thing to the parents *parents tried to figure out the reason	1 1 1+1	DU AYE 35
Does he/she like to talk and react to what he/she watches or listens to?	*talk and react *watches *listens	* enjoys talking * reacts to stories, educational videos, and cartoons	Yes, our child enjoys talking and reacting to stories, educational videos, and cartoons. Especially when he is eating. He only eats when we let him watch YouTube videos.	*enjoys talking and reacting to stories, educational videos, and cartoons. *parents let him watch YouTube videos * uses screen while eating	1+1 1	DU AYE 43
Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?	*Cultural factors *social factors *speech delay *Community	* Sometimes misunderstood * Maybe attributed to superstitions	Actually [laugh].In our community, speech delays are sometimes misunderstood and may be attributed to various causes, including superstitions	*speech delay is misunderstood *speech delay may be attributed to various causes *considered as an attribute of superstitions	1 1+1	DU AYE 44
When did you realise that your child has a speech delay?	*realise *speech delay	* 4 years old	We noticed that our child's speech was not as clear and fluent as other children his age when he was around 4 years old.	*speech delay detected at the age of 4		DU AYE 30

APPENDIX D6: SAMPLE THEME GENERATION TEMPLATE BY THE RESEARCHER

Research question 1:	RQ1: What factors influenced an increase in speech delay among Bangladeshi children during the COVID-19 pandemic?					
Interview question 1	How much exposure is your child getting from your family members?					
Arifa (C1)	Dina (C2)	Farzana (C3)	Mitu(C4)	Ayesha(C5)	Subthemes	Themes
1. Less family exposure 2. Working parents 3. Small family 4. Helping hand takes care of the child	1. Less exposure 2. Busy parents 3. The grandmother takes care of the child	1. Less family exposure 2. likes to watch YouTube videos	1. Less family exposure 2. Busy parents 3. The housemaid takes care of the child	1. Substantial family exposure 2. watches YouTube videos 3. Small family	1. using mobile phones 2. watches YouTube videos 3. Small family	1. Getting less family exposure during lockdown 2. Busy parents cannot give time to the child 3. another person takes care of the child
Interview question 2	How has the pandemic affected your child's communication development?					
1. pandemic has affected communication during lockdown 2. Being at home always	1. The pandemic has affected communication during the lockdown 2. Less interaction with other children 3. At home always	1. The pandemic didn't affect the speech delay. 2. Not interested to talk or play with other kids 3. grumpy child	1. Couldn't play outside during lockdown. 2. was at home 3. Used mobile phone	1. Couldn't play outside during lockdown 2. Used mobile phone 3. Being at home always		1. Children cannot go out and play with other kids during the pandemic 2. Being at home 3. Children got less interaction with each other 4. Use of mobile phones
Interview question 3	What do you think makes him/her speech delay?					
1. Over exposure to multiple languages 2. using mobile phones and videos 3. adopting words from videos	1. less interaction with other children. 2. pandemic caused a speech delay	Neurological difficulty inborn 2. Speech delay improved after a few sessions of concealing and therapy	Less communication with the other child 2. parents do not give enough time	1. Less communication with the other child during the lockdown 2. Exposure to diverse language environments 3. minimal interactions with peers due to the pandemic	1. Using mobile phones and watching videos can increase speech delay 2. got the help of professionals who helped improve it 3. neurological difficulty inborn 4. busy parents	1. Overexposure to multiple languages 2. Less communication with other children during lockdown 3. Pandemic caused a speech delay

Interview question 4	What differences do you find between other kids' speech and your child's speech?					
1. less clear and not understandable words 2. eager to speak	1. Unclear speech and words 2. worried parents 3. struggled with certain sounds	1. Unclear speech 2. due to a neurological disorder 3. doctor detected the disorder after the diagnosis	1. Not fluent speech 2. difficulty pronouncing certain words and sounds 3. worried parents	1. Not fluent speech 2. difficulty pronouncing certain words and sounds 3. a new thing to the parents	1. eager to speak 2. neurological disorder 3. Doctors helped to detect it	1. Unclear speech of the child 2. difficulty pronouncing certain words and sounds 3. worried and a new thing to parents
Interview question 5	Does he/she like to talk and react to what he/she watches or listens to?					
1. Enjoys spending time on the screen 2. Mother let the child use the screen when she has work	1. Enjoys talking and reacting to screens 2. Spends time on mobile screen 3. Mother let her child use the mobile screen while working	1. Enjoys talking and reacting to youtube videos 2. mimics the tone of the songs and rhymes	1. Enjoys talking and reacting to youtube videos.	1. Enjoys talking and reacting to youtube videos 2. parents let the child watch YouTube videos 3. uses screen while eating	1. child mimics the tone of the songs and rhymes	1. Watching YouTube videos a lot influences speech delay. 2. Spending a lot of time on mobile phones increases speech delay 3. parents let the child watch videos while working
Interview question 6	Are there any cultural or societal factors that may affect how speech delays or communication disorders are viewed in your community?					
1. Considers as an act of shyness and laziness 2. not well understood 3. considers speech delay would be all right with time	1. Misunderstands speech delay 2. considered as an act of shyness. 3. parent shaming the people	1. Considered as a curse. 2. Uncomfortable in front of other parents	1. Misunderstands speech delay 2. Society doesn't support 3. may attribute to other causes	1. Misunderstands speech delay 2. Considered as an attribute of superstition 3. may be attributed to various causes	1. it may be attributed to other causes	1. people misunderstand speech delay 2. people consider as an act of shyness and laziness 3. people considered as an attribute of superstition 4. parent shames society 5. Parents feel uncomfortable in

						front of other parents 6. people are not serious about it
Interview question 7	When did you realise that your child has a speech delay?					
At the age of 2	At the age of 4.	At the age of 2	1. At the age of 4	At the age of 4	1. parents realised speech delay at the age of 2	1. parents realized speech delay mostly at the age of 4

APPENDIX E1: RATING FOR PARTICIPANT'S RESPONSE BY RATER

EXPLORING SPEECH DELAY IN BANGLADESHI CHILDREN DURING THE COVID-19 PANDEMIC

Please respond to the following themes by choosing “Agree” or “Disagree”. You can also suggest new themes in the comment column.

RQ 1: What factors influenced an increase in speech delay among Bangladeshi children during the Covid-19 pandemic?						
Theme	Main ideas	Discourse unit	Verbal support	Inter-Rater		Comments/Suggestions
				Agree	Disagree	
1. Getting less family exposure during lockdown increased speech delay during Covid-19 pandemic	During lockdown children could not get enough family exposure due to work/busy schedule which has an influence in speech delay.	DU ARI 16	“...Umm...My child gets less exposure from family members. We are a small family...”	/		
		DU DIN 18	“...To be very honest I am very busy with my work, my husband also works in a foreign company. There is only his grandmother with him. So, family exposure is not too much, unfortunately...”	/		
		DU MIT 19	“...We both husband and wife keep busy throughout the week but we give her time on weekends...”	/		
2. Housemaid or grandmother takes care of the child not the parents	Parents could not give enough time. housemaid/grandmother to the child has an influence in speech delay	DU ARI 16	“...We are a small family and we are busy parents. Only my helping hand takes care of my child...”	/		
		DU DIN 18	“...To be very honest I am very busy with my work, my husband also works in a foreign company. There is only his grandmother with him...”	/		
		DU MIT 19	“...Umm..... Only my housemaid takes care of her and we both husband and wife keep busy throughout the week...”	/		
3. Children cannot go out and play with other kids during the pandemic which	Due to lockdown children could not play with each other which has an influence in speech delay	DU ARI 50	“...he had limited exposure to other children and activities outside the home. He was at home all the time during lockdown...”	/		
		DU DIN 56		/		

influences speech delay.		DU MIT 52	<p>“...During lockdown, he was only at home and he couldn’t interact with other’s children due to social distancing...”</p> <p>“...My child likes to play outside but during lockdown but she was at home all the time...”</p>	/		
4. Being at home during lockdown influenced speech delay	Children who were at home all the time during lockdown has an influence in speech delay	DU ARI 50	“...had limited exposure to other children and activities outside the home. He was at home all the time during lockdown...”	/		
		DU DIN 56	“...During lockdown, he was only at home and he couldn’t interact with other’s children due to social distancing...”	/		
		DU MIT 52	“...She was at home all the time using her mobile phone...”	/		
5. Overexposure to multiple languages can cause speech delay.	A child with the exposure of multiple languages together has an influence on speech delay	DU ARI 32	“...Actually, I think my child's speech delay may be due to over-exposure to multiple languages. As he was using a mobile phone and watching different languages YouTube videos during the lockdown. I saw him trying to adopt words from those videos and this may have caused him a speech delay...”		/	What do you mean by multiple languages? Please rectify.
6. Less communication with other children can cause speech delay.	Children who could not talk to its peers during lockdown has an influence of speech delay	DU AYE 31	“...Mmm. We believe that our child's speech delay may be related to his limited exposure to diverse language environments and minimal interactions with peers due to the pandemic...”	/		
		DU DIN 56	“...Uhh..... The pandemic has affected my child’s communication development a lot. During lockdown, he was only at home and he couldn’t interact with other’s children due to social distancing...”	/		
7. Spending a lot of time on mobile phones and watching YouTube videos increases speech delay	During lockdown most of the child has spent their time in mobile phone watching YouTube videos which influence speech delay	DU ARI 32	“...As he was using a mobile phone and watching different languages YouTube videos during the lockdown. I saw him trying to adopt words from those videos...”	/		
		DU DIN 38	“...Yes, our child enjoys talking and reacting to stories, videos, and music. Whenever I am busy, I let	/		

		DU MIT 52	my child enjoy various YouTube videos on the mobile phone. He really enjoys it...” “...she was at home all the time using her mobile phone...”	/		
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Name of the Rater: Dr. Sabreena Ahmed

Date: 24/08/23

APPENDIX E2: INTER-RATER RELIABILITY CALCULATION FOR PARENTS INTERVIEWS

Calculation of inter-rater's Reliability

	Percentage of agreement (Total number of agreements/Total number of responses) x100
Inter-rater 1:	(17/18)x100
Percentage	94.4

APPENDIX F

Audit Trail of the Study

Date	Activities
17-01-2023	Discussing topic with the supervisor for thesis
22-01-2023	Finding Research gap from 20 summarised article in table
12-02-2023 – 11-03-2023	Working on Literature review's chapters
19-04-2023 – 30-05-2023	Writing all the parts of Chapter 1 Finalising Research question
03-06-2023 – 01-07-2023	Working on Theoretical (Conceptual) Framework of the study
08-07-2023	Showing Interview Protocol, Data collection and Data analysis framework
15-07-2023 – 25-07-2023	Making Interview questions Selecting participants
02-08-2023 – 20-08-2023	Interviewing participants Transcribe Coding Thematic Analysis
24-08-2023	Data analysing Interrater reliability
30-08-2023	Finishing findings and conclusion