Jillian Duval

HN-300-A

Prof. Luesink and Prof. Savell

4-7-2023

The Effects of COVID-19 Related Isolation On the Speech and Language Development of Children

Beginning in March of 2020, the United States of America as it once stood, was forever changed. News aired regarding COVID-19, a disease caused by the SARS-CoV-2. An announcement that America was amid a global pandemic shocked the nation, and triggered a rising sense of alarm in the preceding weeks, months, and years. State-wide COVID-19 stay-at-home orders soon followed, leaving millions of Americans stuck indoors and out of touch with the daily routines they created for themselves. Countries sealed borders, employees across the world were sent home, businesses closed doors for good, and schools turned to remote learning. What did this mean for developing children? This intense year of social distancing, mask-wearing and isolation meant no in-person education and no peer interaction during a crucial time frame in the life of a developing child. While these protective measures catastrophically lessened the spread of the virus, our world's most vulnerable population: children. Age is one of the most imperative factors in the development of speech and language. During the first three years of life, as a child's brain is rapidly maturing and developing, this is the most pivotal time for acquiring communication skills. Isolating a child from exposure to the world around them and all the language it encompasses has a detrimental effect on this development. How can a child acquire these skills if they are confined to the walls of their home? Isolation as a result of the COVID-19 Pandemic has impaired early speech and language development due to increased screen time, reduced social interaction, mask-mandates, and obstacles that posed challenges to successful telehealth services.

During a child's preschool years, they are actively developing their speech and language. They attend school each day and spend these hours surrounded by other children their age and are able engage in play both independently and with other children. This time is crucial in allowing a child's brain to enhance its ability to produce and understand language. The sudden environmental shift for these children as a result of COVID-19 removed them from the walls in which they learn and grow and placed them in an environment where it became easy to digress in these areas such as speech and language. The *Biomedcinska Istrazivanja* review, "=" discusses social isolation and the need for children to learn from home during the pandemic, and how this isolation manifested evidence of difficulties in the development of speech and language. To demonstrate, "A study by Darmiyanti et al. [48] conduct- ed in Indonesia eimpression of 400 parents and teachers on the impact of the COVID-19 pandemic on the language and speech development of children aged 4 to 6 whose formal education was interrupted for 8 months… The authors examined receptive skills (listening and reading) and productive language skills (Speaking and writing), with special reference to listening and speaking. The results of the study showed that only 165 respondents (41%) could achieve the goal of curriculum in mastering language skills pre- scribed by the Ministry of Education and Cul- ture, while the curriculum in mastering listen- ing could be achieved by only 138 respondents (35%), while the goal of curriculum which was related to children's speech could reach only 166 respondents (42%). The results of this study showed that social isolation (learning from home) had a significant negative effect on learning to read and speak in children [48]" (Lukic 199). This study demonstrates the effect that social isolation and an interruption had on preschool aged children's development of language. By this age, children should be able to understand complex questions, engage in

conversation, and use both compound and complex sentences. As shown by the results of this study, only 42% of participants were able to meet the goal of the speech related curriculum. It is relevant to say that the stay-at-home orders set into place affected typical speech development for children aged 4-6, as they are not able to flourish in a classroom environment and have the socialization that they need to thrive. Preschool children spending most of this pivotal time at home meant that parents had to step into the role as their primary teachers. As young students were isolated from peers and friends, the communication they had with their parents was the only source of speech and language they were able to receive. Parents who remained invested in the speech development of their children demonstrated this by engaging their children in activates such as read-alouds. The read-alouds children once took part in in the classroom were crucial in their receptive language skills, and their ability to comprehend a story and later answer questions about what they were read. Lukic states, "The study also showed that children's reading of books decreased by 10.5% during social iso- lotion, and that one of the main causes of those changes was the inability of children to read aloud, as a result of which they could not learn speech and language properly. The authors of the study [49] found that, during the school closure period, reading books at home led to an improvement in achievement on language assessment tests by 40% compared to children who did not read books at home during this period" (Lukic 200). COVID-19 related isolations have had a negative effect on receptive vocabulary skills. While children were once reading every day that they attended preschool to develop these skills, spending more time in their houses led to a decrease in time that they spent reading. During this time, it was up to parents to take part in activities that focused on their child's language skills. Children whose parents we're not actively trying, or may not have had

the means to develop their speech fell victim to language delays, as shown in the study. Conclusions from both studies display the negative affect that social isolation had on the speech and language development of preschool aged children during the pandemic.

In addition to the limited socialization, peer interaction, and overall isolation children were faced with during the pandemic, the COVID-19 lockdown forced children into a state of learning through a screen. For a young child to learn best, it is important that they are in a multisensory environment where they are exposed to knowledge of all kinds, including knowledge of speech and language. There is a direct correlation between the amount and quality of language that a child is exposed to and the rate of their language development. More time spent at home means more time that a child is spending in front of a computer or television screen. Passively exposing a child to language does little to stimulate acquisition compared to sitting in a classroom with a teacher. A number of recent studies have shown how an increased amount of passive screen time in addition to being socially isolated from peers has had a negative impact on early language learners. The article, "*COVID-19: The impact the pandemic has had on your child's Speech and Language development*" by Progressive Pediatric Therapy states, "Reduced vocabulary, inability to functionally ask questions, and missed interactions with family members are just a few of the consequences of passive screen time on language development… One study found a strong correlation between media consumption and poor language development, showing that the more videos a child watched regularly, the less words the child said or knew…"(Progressive Pediatric Therapy 5). An increased time spent in the house left many parents with the burden of having their children constantly under their care while also

trying to balance the new normal of their own work life. Parents were faced with the challenging task of trying to keep their children occupied, however did not consider the impact that excessive screen time can have on their child's language development. As many toddlers in preschool did not have extensive online school requirements like older children did, an overwhelming amount of their time in lockdown was spent on electronic devices. This had a detrimental effect on their expressive vocabulary, and ability to produce age-appropriate speech sounds. Furthermore, a study conducted by the *Max Planck Institute for Psycholinguistics* titled, *"Young children's screen time during the first COVID-19 lockdown in 12 countries"* states, "Finally, we discuss the potential impacts of increased screen time on children's development during lockdown, particularly with regard to children's vocabulary development. A study on children[33] at the same age as those reported here found that children's gains in expressive vocabulary size during lockdown were negatively associated with children's screen time. Extending these findings, we found tentative evidence for the hypothesis that children who experienced larger increases in screen time during lockdown relative to before lockdown showed smaller increases in their expressive vocabulary during lockdown…"(Bergmann 9). As computers and televisions kept young children occupied during lockdown, their expressive language skills became developed without even realizing it. While technology can in some instances aid a child's communication skills through watching instructional videos on a particular subject or skill, excessive screen time spent not passive listening can hinder a child's language development more than it helps it. This excess time spent on devices in addition to the lack of reading children were doing at home, equally contributed to declining levels of expressive vocabulary in toddlers. For instance, A

Systematic Review titled, *"Association of Excessive Screen Time in Children with Language Delay During Covid-19 Pandemic: A Systematic Review* "states, "A cohort study from Finland found that increased screen time and TV time were related to smaller vocabulary at 18 months. Parents' screen time and shared reading less than daily were also associated with smaller vocabulary at 24 months" (Ghaisani 26). This study supports the claim that an increased access to screen time during COVID-19 related isolation directly impacted a developing child's ability to acquire expressive vocabulary skills. Not having these skills will affect a child later in their educational journey, as well as in their ability to communicate with parents, teachers, and friends.

While social isolation from the world around them and increased screen time hindered the speech and language development of children, another element of the COVID-19 burdened their progress as well. As the pandemic intensified and infection spread, mask-mandates became more and more strict. Children experienced little face to face interaction aside from their parents to begin with during the pandemic, and despite stay-at-home orders becoming more lenient over time, mask mandates were still enforced. For years after the beginning of the pandemic, face masks were still required to be worn inside of PreK-12 public or non-public schools if required by the local school board, leaving young children attending school for hours with their mouths shielded by a face mask. According to the PubMed Central article*, "Attention to the mouth and gaze following in infancy predict language development",* there is significant evidence that selective attention to informative areas such as the face or mouth excels language development. To demonstrate, "Young and colleagues showed that attention to the mouth may also play a role in successful language learning. Why should attention to the mouth be important for infants'

language acquisition? Information in and around the mouth can foster the infant's associations between mouth shape (e.g., a horizontal vs. vertically opened mouth or labial vs. oral closure) and speech sounds (e.g., [i] vs. [a] or [b] vs. [d]) while also providing consistent visual cues for the ephemeral speech stream" (Lang 5). When an infant or young toddler is first learning their native language, they rely heavily on looking at the mouths of those around them. This subconsciously allows them to make similar facial movements when attempting to mimic speech sounds. Mask-mandates across the globe resulted in the hiding of the bodies most pivotal articulator, the mouth. Outside of the walls of their own home, developing children were not able to direct their attention to mouth shape or pick up on these visual cues by watching those around them produce language. Shielding a developing child from these movements will ultimately done by *Scientific American* additionally argues in favor of the negative effects of masking on language development, as lip-reading is pivotal in a baby's first steps in picking up language. For instance, "Overall, the research to date demonstrates that the visible articulations that babies normally see when others are talking play a key role in their acquisition of communication skills. Research also shows that babies who lip-read more having better language skills when they're older. If so, this suggests that masks probably hinder babies' acquisition of speech and language" (Lewkowicz 1). Eliminating a child's ability to read lips due to masking will take away their ability to understand how an adult properly moves their mouth to form words and sentences. It is clear that there is a direct correlation between communication signals such as facial movements and language development. Mask wearing left babies and young children learning to speak in a

vulnerable population, as these communicative signals were hidden and faces were only partially visible. If a child is unable to understand the facial movements needed to form intelligible speech, this can leave them at risk to develop an expressive language disorder, leaving them unable to express themselves through words or be understood by others. This has \ also affected children inside of the classroom, where masks were worn all day for nearly two years. The article *"Could wearing a mask slow your child's speech and language development?* by Mia Urquhart, emphasizes the impact that masking has had on children's ability to communicate once they were able to become mask-free in the classroom. Urquhart states, **"**Earlier this week, when asked about re-introducing mandatory masking in schools, Dr. Jennifer Russell said she takes a number of things into consideration…We recently learned that 17.9 per cent of students entering kindergarten have communication difficulties right now, and that's as a result of data from the early years assessment" (Urquhart 2). These findings demonstrate the statistical data of young children entering the classroom for the first time since the start of the pandemic, and prevalence of communication difficulties they now face. The socially isolated lifestyle these children lived for so long combined with significant mask wearing notably caused an uprising in their communication difficulties. The effect that this has had on the population of children under two years old is striking, as this age is crucial to speech and language development. Rates of new speech and language disorder diagnoses were astonishingly high in this population in the year of 2022, two years after the beginning of COVID-19. To

demonstrate, “Infants and children up to age 2 were most impacted, with a 136% increase in diagnoses in 2022 compared to the pre-pandemic rate. Developmental milestones in this age group make them especially vulnerable to speech problems associated with change…” (Gliadkovskyaya 3). This population was vulnerable to all aspects of the pandemic that affected communication such as isolation, masking, and increased screen-time. Being exposed to these factors at such a crucial age in the span of language development set these children up for delays of this nature.

Changes to the field of Speech Language Pathology during the COVID-19 pandemic further put children at a higher risk of developing a language disorder. Speech Language Pathologists (SLP’s) usually work very close to their patients at a face-to-face distance, so that they can be easily understood, and their mouths and lips can be observed by clients. As businesses and schools closed their doors, speech therapy practices did as well, and these close interactions could no longer be offered. Being that children could no longer receive in-person speech services through a school or in a private practice setting due to the strict stay-at-home orders, teletherapy was the only way to treat speech and language disorders during this time. However, this rapid switch from in-person to online services was not an easy one and posed as a barrier between clinicians and clients. Additionally, switching Speech Language Therapy services to an online platform caused hardships to vulnerable populations such as those children living in socially deprived areas who may have not had access to technology. A survey done by

the *American Journal of Speech-Language Pathology* found that Speech-language clinicians indicated that the most common concerns families had were their child's lack of willingness to participate in therapy sessions and the parent's comfort level with videoconferencing. To exacerbate the problem, respondents reported that even when parents wanted to participate in telehealth, there were families who did not have the resources to do so. Therefore, common tele-health barriers identified prior to March 2020 (COVID-19) continue to persist, such as lack of Internet access in rural areas or lack of funding to provide children with technol- ogy (i.e., appropriate devices) or affordable Internet access (Benda et al., 2020). Although teletherapy can be an efficient option for some children and families, there are limitations that stand in the way of making this an effective mode of therapy for everyone. If a child's family does not have the means to support their therapy with technological devices such as a computer and high-functioning Wi-Fi, they will not be able to receive the highest quality of therapy. Therefore, a language disorder will only continue to progress if they are not receiving the help that they need. A survey was developed to gain the opinions of 259 SLP's working in suburban areas serving the pediatric population. The intent of this survey was to gather data on the attitudes and experience working through telehealth networks, and the barriers that get in their way of providing successful speech language therapy. Clinicians reported "…families having concerns about the child's lack of willingness to participate in sessions (77%), families' lack of comfort with videocon- ferencing (61%), and families' lack of affordable access to Internet connectivity

(58%) …" (Campbell & Goldstein , 277). In order to have a successful telehealth speech therapy session, both parties involved must have fast-speed Wi-Fi. Unfortunately, not all children and their families can afford to maintain this utility, which places a barrier in communication. If therapy sessions are not able to be had consistently, the duration of a child's language disorder may increase or worsen over time. Additionally, using telehealth as the primary means of providing speech language therapy services over the course of the pandemic clearly was not appealing to all types of families who have children with a language disorder. This is due to the multitude of disadvantages that come along with using technology as means of providing services. To demonstrate, "The disadvantages of telehealth question (n = 194) were determined to have nine major content themes. At least 25% of respondents identified a client's lack of connectivity (42%), lack of family involvement or appropriate environment in which to receive therapy services (37%), client behaviors (35%), and unsuitable substitution for in- person care (33%) as the most common disadvantages to telehealth speech and language therapy services" (Campbell & Goldstein, 279). It is difficult to connect with a child over a computer screen, as well as difficult to keep their attention the clinician so that the session can be of benefit to them. These limitations, despite the benefits of teletherapy, were enough to keep some families away, even if it meant that their child did not receive the services they needed. This in turn contributed to the rise of language disorders in children during the time of the pandemic, as it is imperative to begin treatment as soon as symptoms are visible in a child's communicative functions. With language disorders, timing is precious, and early intervention services can make a vast difference in a child's progress. Concerns from parents about their child's attention span, and a lack of funding to provide children with the appropriate technology and Wi-fi needed to participate in therapy cumulatively contributed to a decrease in children receiving the help they needed.

While COVID-19 related isolation had a damaging effect on the speech and language development on young children who were confined to their home during that time, some may argue that this period of isolation helped early language learners make strides in their vocabulary. The sudden environmental shift from a classroom setting to home, left many parents having to adjust to the new routine of their young children. For some parents, this meant more time with their toddler to continue the skills their child had been learning in school, including their communication skills and knowledge of language. Parents who took an active role in the language development of their children in the absence of in-person education, were able to make significant strides. Through the introduction of at-home activities centered around language development, those parents who prioritized keeping their child's speech development consistent with the average level were successful in making progress in their child's expressive language skills. The *Language Development Research* review, *"COVID-19 first lockdown as a window into language acquisition: associations between caregiver-child activities and vocabulary gains"* states, "The vocabularies of 1742 children aged8-36 months across 13 countries and 12 languages were evaluated at the beginning and end of the first lockdown period in their respective countries (from March to September 2020). Children who had less passive screen exposure and whose caregivers read more to them showed larger gains in vocabulary development during lockdown, after controlling for SES and other caregiver-child activities" (Kartushina 2). The positive correlation between Covid-19 related isolation and language development in children is a direct result of the efforts made by parents or guardians. Those parents who allowed their children to have less screen-time and more time spent completing educational activities were successful in expanding their child's vocabulary. These parents made productive use of this extended period spent with their child and made up for the absence

of in person instruction. However, this level of effort by parents and guardians to develop their child's language during isolation was not the case in every household. Parents who did not have the time to complete activities that developed language with their children and needed to keep them occupied fell victim to extreme amounts of screen-time. Giving into technological devices and television during the pandemic was the general case for many working parents, who were adjusting to working from home and could not offer as much one-on-one time with their child to develop language. There are notable correlations between high amounts of screen-time and language development, which became increasingly evident during the height of the pandemic. The article, *"Pandemic could be putting your child's speech & language development at risk",* states, "Other recent research shows that for every 30-minute increase in daily screen time above these recommendations, the risk of an expressive language delay (a delay in talking) goes up by a whopping 49 percent. This is an astounding finding and one that many parents are shocked to discover" (Fehr 3). This was the reality for many children and families during the pandemic, as working parents could not devote as much time to language centered activities with their children. In most cases for young children, language development paused the moment that stay-at-home orders began. This period of intense lockdown shielded them from the communicative school environment that enriched their young brains, and paused access to in-person speech therapy services. While it was not the first choice of parents to hand their child and iPad or sit them in front of a television to keep busy, this was the easy choice. The pandemic placed financial burdens on families across the globe, especially those in underprivileged areas. Turning to technology eases the stress of a working parent, as they do not have the capability to offer educational instruction to their aid their child's language development.

The COVID-19 pandemic is not something that any human being could have planned or prepared for. The sudden changes in environment and daily life brough fourth by the virus significantly altered many aspects in the lives of young children developing during these challenging times, speech and language being a major concern. A consistent rise in cases resulting in school closures left developing children unable to interact with their peers, and gain the linguistic foundation they need as early language learners. The closure of schools accompanied by intense masking, excessive screen-time, and limitations of teletherapy services lead to an increase in the rates of language disorders seen in young children both during and after the pandemic. While some parents extended efforts to help their child's language expand during the absence of a schoolteacher, all children did not have this privilege. Remaining stagnant in one environment for a long period of time, detached from the outside world is not beneficial to anyone, let alone young children trying to acquire one of the most important life skills; the ability to effectively communicate.

Bibliography:

Campbell, Deborah. “Home.” *Evolution of Telehealth Technology, Evaluations, and Therapy: Effects of the COVID-19 Pandemic on Pediatric Speech-Language Pathology ServicesHome*, https://superiortherapyservices.com/.

Chadd, Katie, et al. “Impact of Covid-19 on the Speech and Language Therapy Profession and Their Patients.” *Frontiers in Neurology*, U.S. National Library of Medicine, 18 Feb. 2021, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7930219/.

Fehr, Lisa. “Pandemic Could Be Putting Your Child's Speech & Language Development at Risk.” *Winnipeg Regional Health Authority*, 30 May 2022, https://wrha.mb.ca/2022/05/30/pandemic-could-be-putting-your-childs-speech-language-development-at-risk/.

Gliadkovskyaya, Anastassia. “Speech Disorder Diagnoses in Children Doubled during COVID, Komodo Health Finds.” *RamaOnHealthcare*, 2 Apr. 2023, https://ramaonhealthcare.com/speech-disorder-diagnoses-in-children-doubled-during-covid-komodo-health-finds/.

Hanna Hil. *Murray State's Digital Commons*. https://digitalcommons.murraystate.edu/cgi/viewcontent.cgi?article=1099&context=honorstheses.

Kartushina, Natalia. “Covid-19 First Lockdown as a Window into Language Acquisition: Associations between Caregiver-Child Activities and Vocabulary Gains.” *Language Development Research*, Carnegie Mellon University Library Publishing Service, 6 Feb. 2022, https://ldr.lps.library.cmu.edu/article/id/518/.

Lukic, Ana. *The Influence of Social Isolation during the COVID-19 Pandemic on ...* https://scindeks-clanci.ceon.rs/data/pdf/1986-8529/2022/1986-85292202193L.pdf.

Progressive Pediatric Therapy. “Covid-19: The Impact the Pandemic Has Had on Your Child's Speech and Language Development.” *PPT4Kids*, https://www.ppt4kids.com/covid-19-the-impact-the-pandemic-has-had-on-your-childs-speech-and-language-development/.

Urquhart , Mia. “Could Wearing a Mask Slow Your Child's Speech and Language Development? | CBC News.” *CBCnews*, CBC/Radio Canada, 7 Apr. 2022, https://www.cbc.ca/news/canada/new-brunswick/do-masks-cause-speech-delays-1.6412266.

\