

# Has the COVID-19 pandemic increased the prevalence of the language disorder in children?



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## Introduction

Coronavirus disease 2019 (COVID-19) first broke out in China and has been prevalent worldwide for years, and it still exerts its influence throughout the society. Amid the COVID-19 pandemic, as the government enforced the law as 'social distancing', private gatherings were disappeared and the public-school classes had mostly been switched to the online system. As a result, ordinary face-to-face communications much decreased. Furthermore, wearing a mask has become a necessity so that it became hard to recognize one's facial expression and mouth shape in a conversation, which are significant in the language development including the conversation ability as well as precise articulation. The purpose of this study is to investigate whether the COVID-19 pandemic and the consequential lifestyle change has an impact on the language development in childhood.

## Methods

We randomly selected the patients under the age of 15 who visited the outpatient department of rehabilitation medicine for the first time due to suspected delayed language development. 35 patients in 2019 and 2021 per each were included in this study, to compare before the COVID-19 pandemic with after. Sequenced language scale for infants (SELSI) was done in the infants under the age of 24 months and preschool receptive-expressive language scale (PRES) was done in the infants over 2 years old to evaluate the receptive and expressive language ability. Additionally, for those who have difficulty on the articulation, Urimal test of articulation and phonology (U-TAP) was done. We calculated the proportion of the patients who got scores under 2 standard deviations from the average in the same age for each assessment, which suggests the significant delay.

## Results

Among 35 patients who visited before the pandemic, 12 patients (34%) showed receptive language ability impairment and 15 patients (43%) showed expressive language impairment in the SELSI or the PRES assessment. 8 patients (23%) showed an impairment in the articulation of the consonants and the bowels in the U-TAP test. Out of the other 35 patients who visited during the pandemic, 20 patients (57%) showed receptive language ability impairment and 22 patients (63%) showed expressive language impairment. 14 patients (40%) showed the articulation problem. Overall, the results showed the higher prevalence of the language and articulation disorder after the COVID-19 pandemic than before.

	Before the COVID-19 pandemic (2019)	After the COVID-19 pandemic (2021)
Receptive language	12 (34%)	20 (57%)
Expressive language	15 (43%)	22 (63%)
Articulation	8 (23%)	14 (40%)

Table 1. The number of patients got scores under 2 standard deviations from the average before and after the COVID-19 pandemic.

## Discussion

Higher proportion of the receptive and expressive language ability impairment and the articulation impairment was shown in the first-time visited patients in 2021 by simply comparing to those patients in 2019. Since the exposure to the media has known to be increased in the COVID-19 pandemic and the social interactions have much decreased in childhood, it may have contributed to delayed language development. Furthermore, wearing a mask has become a necessity so that it became hard to recognize one's facial expression and mouth shape in a conversation, which are significant in the language development including the articulation. This study has definite limitations that the number of the involved patients are too small, and they were randomly selected without any specific criteria. We suggest that it may be worth investigating all the patients who have the language disorder by comparing before and after the COVID-19 pandemic, later by a cross-sectional study.