

Comparison of Pediatric SARS-CoV-2 infections During Spring 2020 and 2021

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Background

Since coronavirus disease 2019 (COVID-19) emerged as a global health crisis, resulting in more than 3.8 million deaths worldwide.¹

The pediatric population was less commonly infected with SARS-CoV-2 during the first wave of infections, representing less than 2% of the reported cases.² In our study, pediatric-specific data involving presenting symptoms, COVID-19 exposures, demographics, and hospital course were collected.

Aims

Data is lacking regarding the clinical manifestations of children with SARS-CoV-2 infection during Spring 2021 and how that clinical presentation compares to children who presented during the early months of the pandemic.

We sought to compare the presentation and severity of illness among children with a positive PCR test result for SARS-CoV-2 who presented during the Spring 2020 to those who presented for testing during Spring 2021

Methods

We identified all patients <18 years old who had a positive nasopharyngeal polymerase chain reaction (PCR) result for SARS-CoV-2 from 4/1/2020-6/30/2020 and from 4/1/2021-6/30/2021 through a laboratory-based database at a rural academic tertiary care medical center. Data collected:

- Demographics
- Underlying medical comorbidities
- Symptoms at the time of SARS-CoV-2 testing
- Need for hospitalization & hospital length of stay,
- Respiratory support.

We excluded patients who were hospitalized for reasons other than COVID-19 infection in our hospitalization statistics.

Results

We identified 331 children with a positive SARS-CoV-2 PCR result who met our inclusion criteria. Among children presenting during the Spring 2021 time period, upper respiratory tract infection (URI) symptoms were much less common than those presenting in Spring 2020. Additionally, fever and cough were more common among children presenting in Spring 2021.

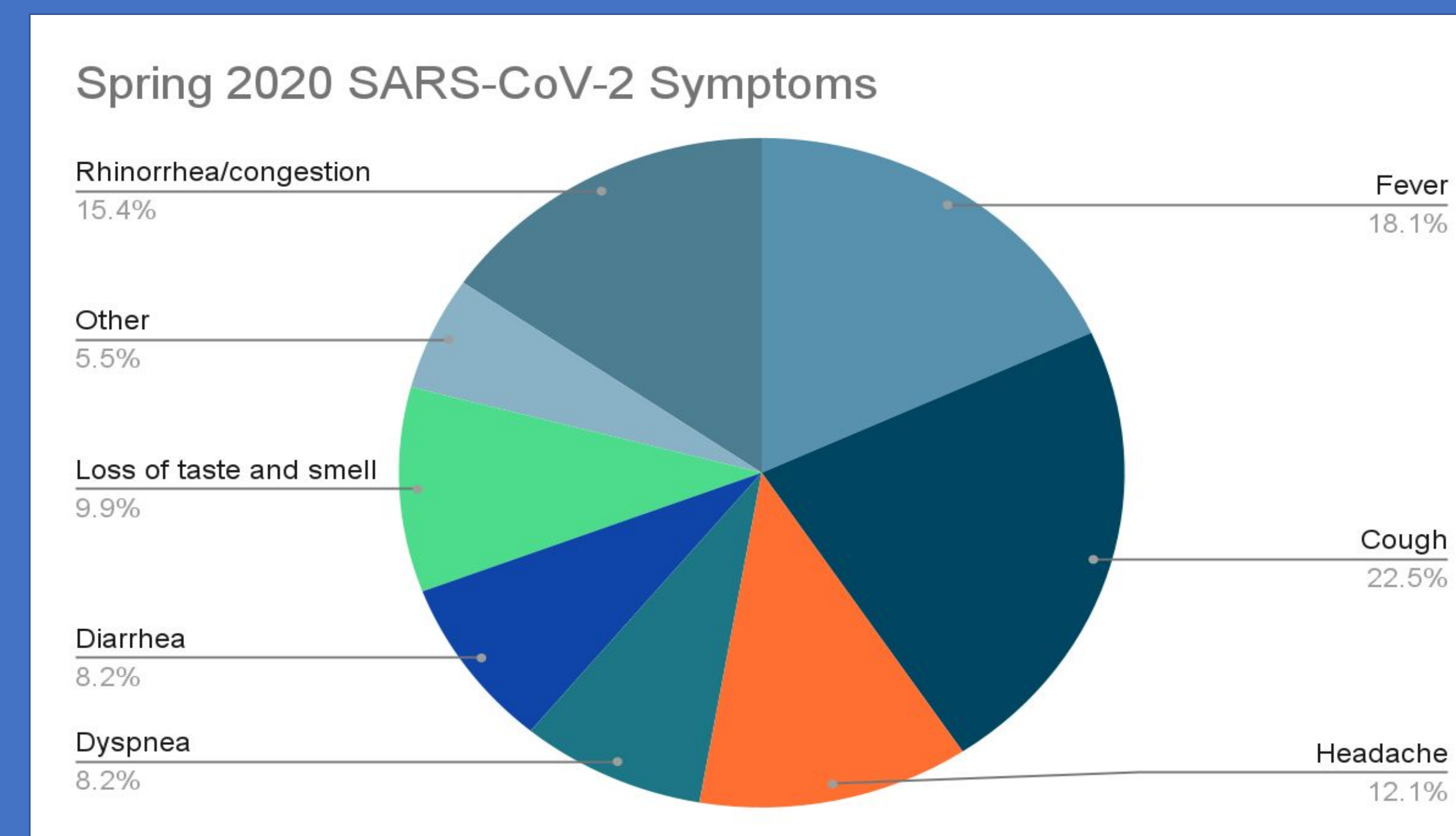


Chart 1: Self-reported symptoms among children with a positive SARS-CoV-2 PCR test, spring 2020

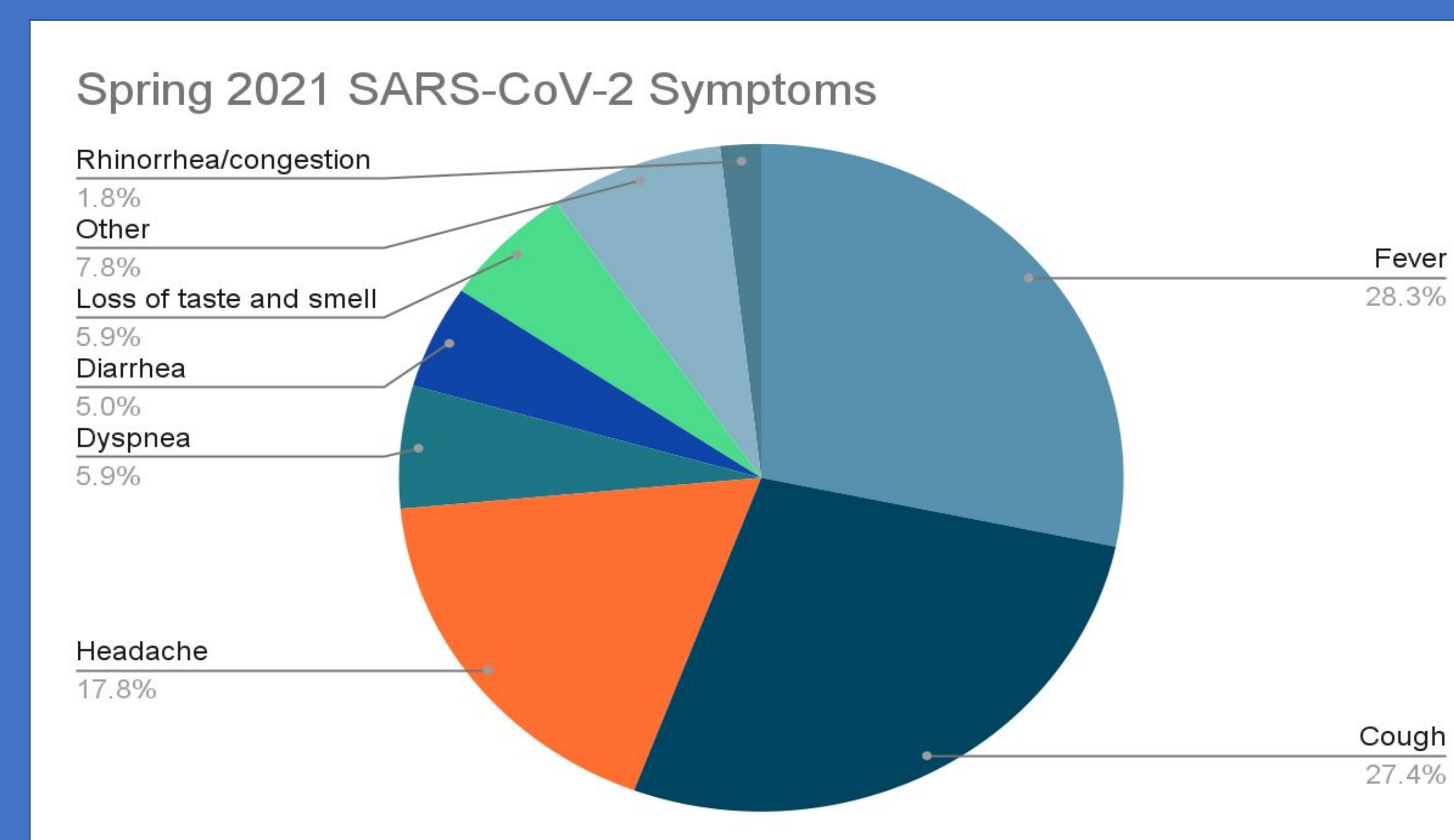


Chart 2: Self-reported symptoms among children with a positive SARS-CoV-2 PCR test, spring 2021

Asymptomatic patients represented 39% and 28% of the population sample from 2020 and 2021, respectively. Other symptoms included myalgias, GI symptoms (diarrhea, vomiting, and abdominal pain)

Table 1: Association of year, patient and clinical characteristics with hospital admission for care of COVID-19.

	Required hospital admission N=14 (4%)	Did not require hospital admission N=317 (96%)
Year		
2020	5 (36)	145 (46)
2021	9 (64)	172 (54)
Age†	7 (2, 12)	11 (4, 16)
Sex		
Male	6 (43)	143 (45)
Female	8 (57)	174 (55)
Any medical comorbidity	10 (71)	122 (39)
Race		
White	9 (64)	164 (52)
Black	2 (14)	31 (10)
Other/Multiple/Unknown	3 (21)	122 (38)
Dyspnea at presentation	9 (64)	19 (6)

Hospitalization for COVID-19 care occurred in 4% of children overall: 3% of children during the Spring 2020 era and 5% of children during Spring 2021, P=0.587.

Conclusions

Our study offers insights into the differences in the clinical presentation and outcomes of pediatric patients infected with SARS-CoV-2 during Spring 2020 and Spring 2021, respectively.. We found that children infected during Spring 2021 had fever and cough more often, and rhinorrhea and nasal congestion less often than children infected during the Spring 2020. Fever and cough were the most common symptoms during both the Spring 2020 and Spring 2021 populations. Hospitalization was uncommon and was similar in both time periods. Most children requiring hospital admission had an underlying medical comorbidity

Acknowledgements

References: 1: Cascella, M., Rajnik, M., Aleem, A., Dulebohn, S. C., & Di Napoli, R. (2022). Features, Evaluation, and Treatment of Coronavirus (COVID-19). In StatPearls. StatPearls Publishing.
2: Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention. JAMA. 2020;323(13):1239–1242. doi:10.1001/jama.2020.2648

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