

Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic has undoubtedly posed a significant national public health crisis. COVID-19 is known to be caused by a RNA virus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Although individuals greater than 60 years of age and those with underlying medical conditions are at greater risk of acquiring severe COVID-19 infections, all individuals, regardless of age, sex, and ethnicity, can be affected [1].

In August of 2021, the FDA approved the first vaccine against the Coronavirus, Pfizer-BioNTech COVID-19 Vaccine, for those sixteen years and older [2]. Realizing that COVID-19 cases in children can result in hospitalizations, deaths, MIS-C (inflammatory syndromes), and long-term complications, in November 2021, the Centers for Disease Control and Prevention (CDC) recommended individuals 5 to 11 years old be vaccinated with the Pfizer-BioNTech pediatric vaccine. Subsequently, they expanded vaccine recommendations to those 6 months and older as of June 2022 [3]. According to current CDC guidelines, the Pfizer-BioNTech COVID-19 vaccine is available for children ages 6 months to 4 years old and the Moderna COVID-19 vaccine is available for those 6 months to 17 years old. The Pfizer-BioNTech vaccine is given in a three-shot primary series while the Moderna vaccine has a two-dose primary series and a third primary dose for children who are immunocompromised [4].

The coronavirus spreads through close contact through respiratory droplets and aerosols [5]. Since dental procedures generate aerosol and involve the dentist to be in close proximity to the patient, there is a high suspected risk of transmission associated with dentistry. Data obtained from this research provided insight on current issues related to receiving and providing dental care to the pediatric population during this time.

Objective

The primary aim of this study was to determine the vaccination compliance rate of children in Bronx, NY. The secondary aim was to assess the relationship between parental comfort level in visiting the dentist, whether for emergent or routine purposes, and their child's COVID-19 vaccination status.

Subjects

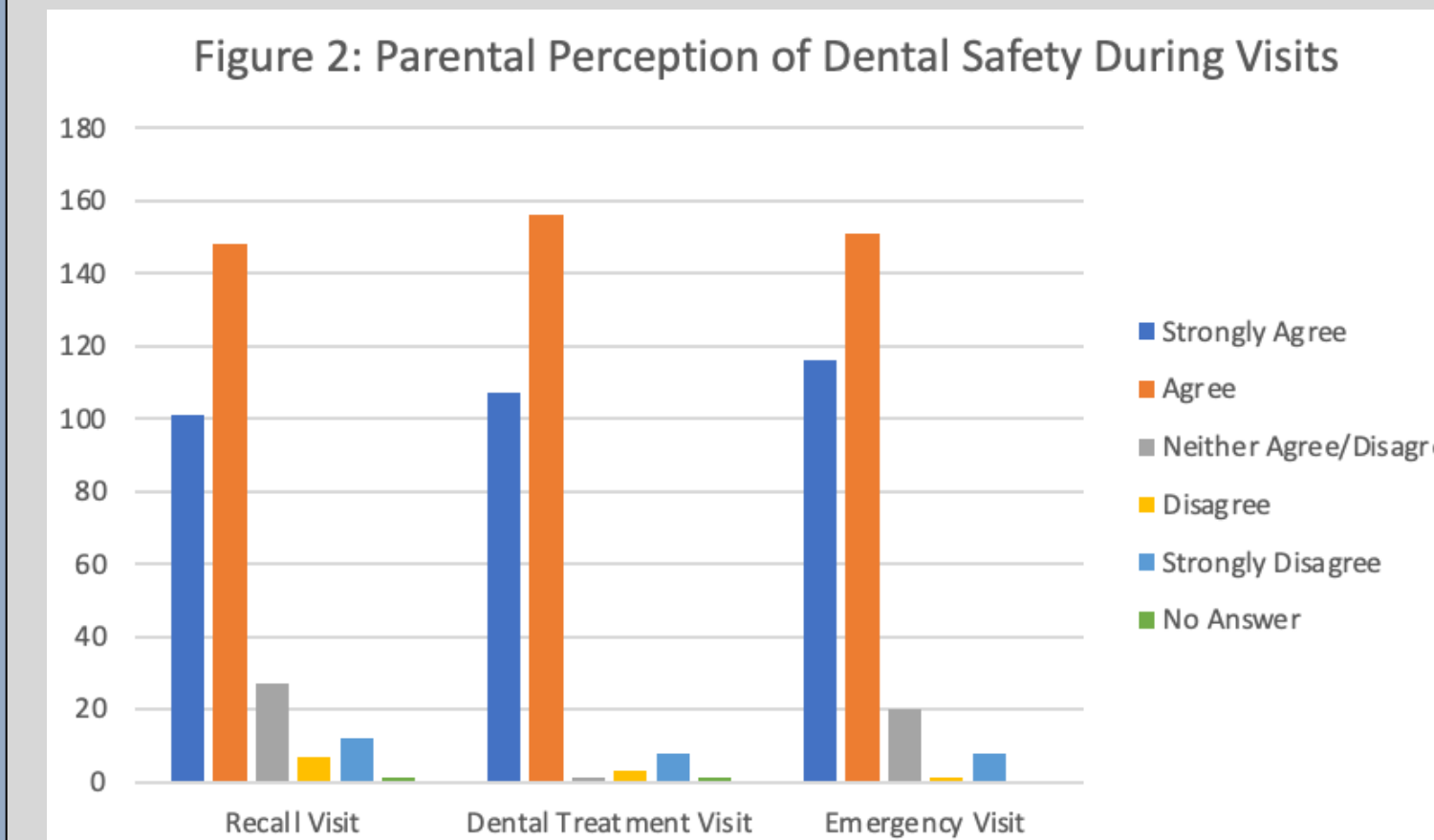
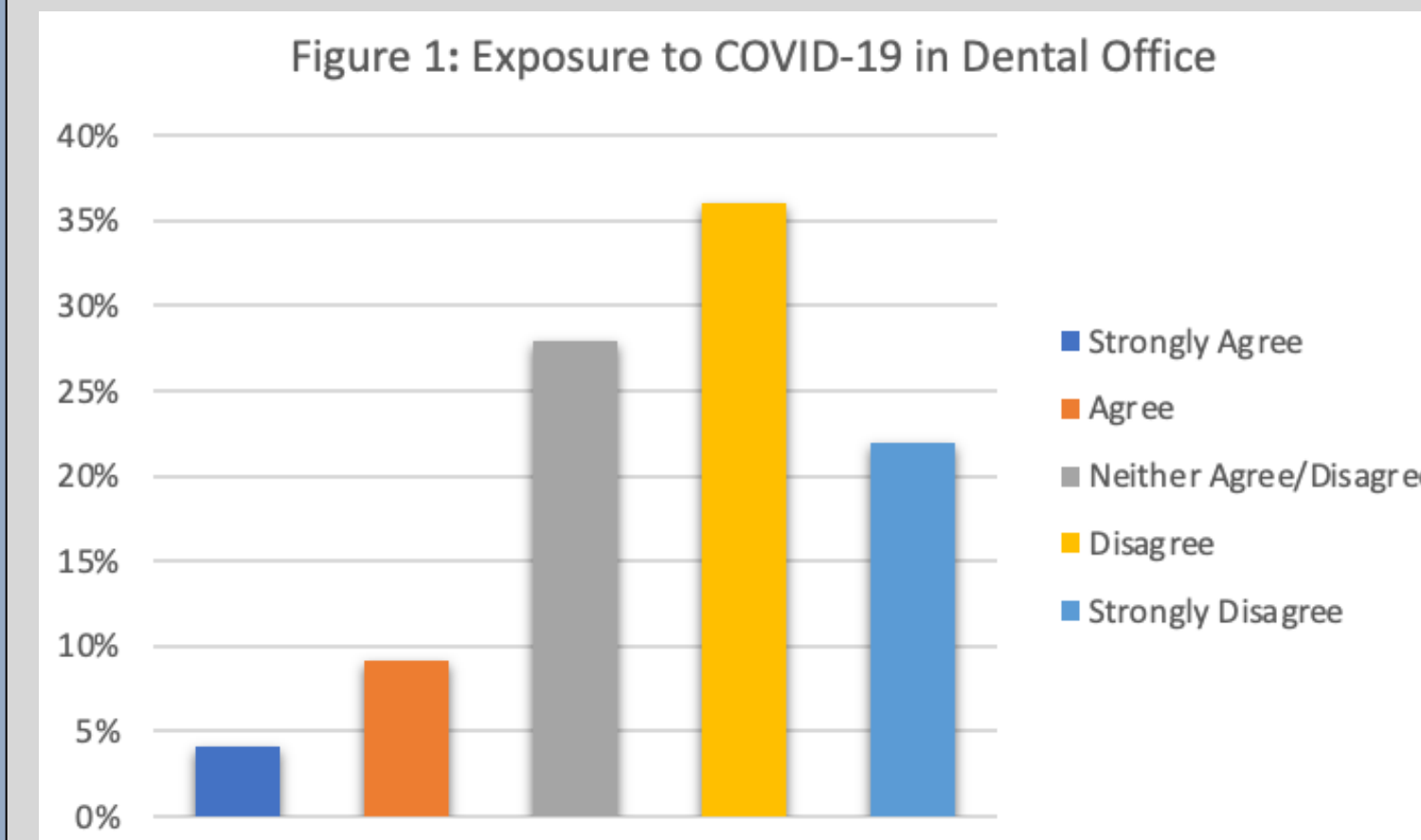
The target population included parents/legal guardians of children who presented to Montefiore pediatric dental clinics in Bronx, NY for dental appointments. Inclusion criteria included the parents of children who were eligible for the COVID-19 vaccination, which according to current CDC guidelines constituted patients 6 months and older [6]. Furthermore, only one child per family qualified for the study so all siblings were excluded.

Study Design & Methods

This was a cross-sectional study, with data collection that occurred over a 2-month period from February-March 2023. Consent was obtained and a 6-question survey was given electronically via a QR code to the patient's parents or legal guardian that presented to Montefiore pediatric dental clinics for their appointments.

The survey included questions regarding child's COVID-19 vaccination status and parent comfort level in bringing their child to the dentist for recall, operative, or emergency treatment. Answer choices ranged from 'strongly agree' to 'strongly disagree':

Results



Results (cont.)

Table 1. Association between vaccine status of a child and attitude of parents towards dental safety

Outcome	Vaccine		p-value ²
	Yes N = 106 (36%) ¹	No N = 190 (64%)	
Dental office Exposure			0.8
Strongly Agree	6 (5.7%)	6 (3.2%)	
Agree	10 (9.4%)	17 (8.9%)	
Neither Agree nor Disagree	30 (28%)	53 (28%)	
Disagree	36 (34%)	72 (38%)	
Strongly Disagree	24 (23%)	42 (22%)	
No answer	0 (0%)	0 (0%)	
Recall visit			0.5
Strongly Agree	37 (35%)	64 (34%)	
Agree	53 (50%)	95 (50%)	
Neither Agree nor Disagree	7 (6.6%)	20 (11%)	
Disagree	2 (1.9%)	5 (2.6%)	
Strongly Disagree	6 (5.7%)	6 (3.2%)	
No answer	1 (0.9%)	0 (0%)	
Dental treatment			>0.9
Strongly Agree	38 (36%)	69 (36%)	
Agree	58 (55%)	98 (52%)	
Neither Agree nor Disagree	7 (6.6%)	14 (7.4%)	
Disagree	1 (0.9%)	2 (1.1%)	
Strongly Disagree	2 (1.9%)	6 (3.2%)	
No answer	0 (0%)	1 (0.5%)	
Emergency visit			0.8
Strongly Agree	40 (38%)	76 (40%)	
Agree	58 (55%)	93 (49%)	
Neither Agree nor Disagree	5 (4.7%)	15 (7.9%)	
Disagree	0 (0%)	1 (0.5%)	
Strongly Disagree	3 (2.8%)	5 (2.6%)	
No answer	0 (0%)	0 (0%)	

¹n (%)

²Fisher's exact test

- Of the 296 sample size, 106 individuals (36%) were vaccinated and 190 (64%) were not vaccinated. Of the 190 unvaccinated, 24 individuals (13%) had only one dose of the vaccine and 166 (87%) had no doses.
- A descriptive summary of selected characteristics was summarized as frequencies and percentages. Associations between vaccine status of a child and attitude of parents towards dental safety was assessed using Fisher's exact test. In all analyses, statistical significance was claimed at a computed p -value ≤ 0.05 (i.e., results shown in Table 1 were not statistically significant).

Discussion

According to the results from this study, 36% of children were vaccinated, as defined by having both doses of the vaccine. This low percentage can be due to various reasons including lack of access to the vaccine, lack of education, or literacy issues. In addition, there were no statistically significant associations between COVID-19 vaccination status of a child and attitude of parents towards dental safety ($p > 0.05$, Table 1). Parents may now be more likely to bring their child for dental services for various reasons. For example, with decreased mortality and morbidity from this virus, individuals no longer feel as threatened and are more comfortable bringing their children for dental visits. In addition, there are now more appointment availabilities and most dental clinics are fully open, whereas during the midst of the pandemic most clinics were only open for select hours or fully closed. Also, when quarantine mandates were lifted, parents may have felt more inclined to bring their child to the dentist, regardless if they were vaccinated or not. Lastly, dentists are no longer requiring COVID testing for patients prior to their dental appointments.

Limitations for this study include a small sample size and risk for bias. Parents who answered the surveys were those that brought their child to the office, so they were more likely to feel comfortable with their child receiving dental care. While COVID-19 significantly changed the landscape of healthcare, advances in medicine have allowed the burden to finally decrease.

Conclusion

This study concluded there was no significant association between COVID-19 vaccination status of a child and attitude of parents towards dental safety.

References

1. Cascella M, Rajnik M, Aleem A, et al. Features, Evaluation, and Treatment of Coronavirus (COVID-19) [Updated 2022 Oct 13]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan. <https://www.ncbi.nlm.nih.gov/books/NBK554776/>
2. Commissioner, O. of the. (n.d.). *Pfizer-biontech covid-19 vaccines*. U.S. Food and Drug Administration. Retrieved November 21, 2022, from <https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/pfizer-biontech-covid-19-vaccines#:~:text=On%20August%202023%2C%202021%2C%20FDA,years%20of%20age%20and%20older>
3. Coronavirus Disease 2019. (2022, June 18). Retrieved from Centers for Disease Control and Prevention website: <https://www.cdc.gov/media/releases/2022/s0618-children-vaccine.html>
4. AAPD | COVID-19 Status and Vaccines. (n.d.). Retrieved November 21, 2022, from [www.aapd.org](https://www.aapd.org/about/about-aapd/news-room/covid-19-status/) website: <https://www.aapd.org/about/about-aapd/news-room/covid-19-status/>
5. Tonkaboni, A., Amirzade-Iranaq, M. H., Ziaei, H., & Ather, A. (2021). Impact of COVID-19 on Dentistry. *Advances in experimental medicine and biology*, 1318, 623–636. https://doi.org/10.1007/978-3-030-63761-3_34
6. CDC. (2020, February 11). COVID-19 and Your Health. Retrieved from Centers for Disease Control and Prevention website: <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html>

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