Assessing Parents' Knowledge, Attitudes, and Practices Towards Vaccinating Children (5-15 years old) Against COVID-19 in the United Arab Emirates: A Cross-sectional Study

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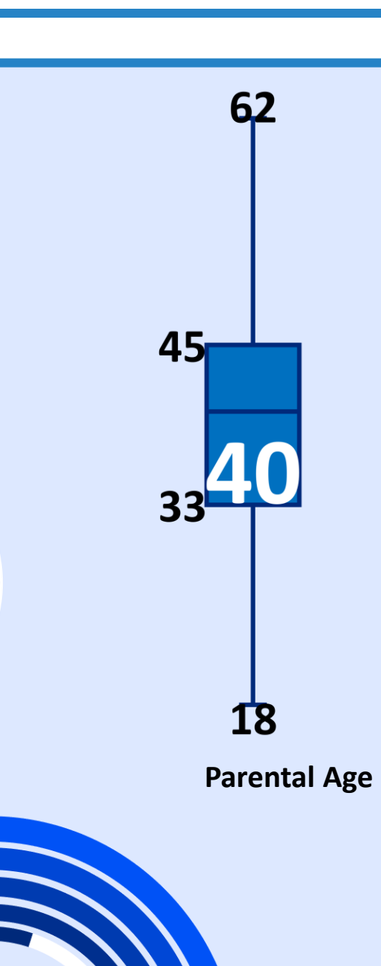
INTRODUCTION

- The United Arab Emirates has an incomparable vaccine coverage rate in adults (97.06% with at least 2 doses) [1]. And although the UAE has promptly approved the vaccine for children in the 12-15 and 5-11 age groups by May and November of 2021 respectively [2], the data concerning uptake and coverage in the pediatric population remain scarce
- COVID-19 was classified among the top 10 causes of death in the 5-11 age group in 2020-2021 [3]. It has been shown that the likelihood of developing COVID-19-related complications is significantly higher in unvaccinated children, specifically the Multisystem Inflammatory Syndrome in children (MIS-C) [4].
- Our aim through assessing the knowledge, attitude, and practices of parents toward the childhood COVID-19 vaccine is to identify possible barriers to vaccination uptake which can be addressed to ensure that the ongoing COVID-19 vaccination campaign, as well as future childhood vaccination campaigns, are effective.

Materials and Methods

- A self-administered questionnaire was shared through online platforms, emails, and mainly school-related social media communities, during June and July 2022.
- Inclusion criteria comprised of all parents of children between the ages of 5-15 living in the UAE.
- The Questionnaire included the following topics:
  1. Demographics
  2. Knowledge about COVID-19 and the vaccine.
  4. Attitudes about COVID-19 and the vaccine
  5. Practices during the COVID-19 pandemic
  6. Uptake of the COVID-19 for their children
  7. Reasons for uptake, refusal, and future intent to vaccinate.



Results

Figure 1. Population Demographics

Child Vaccination History

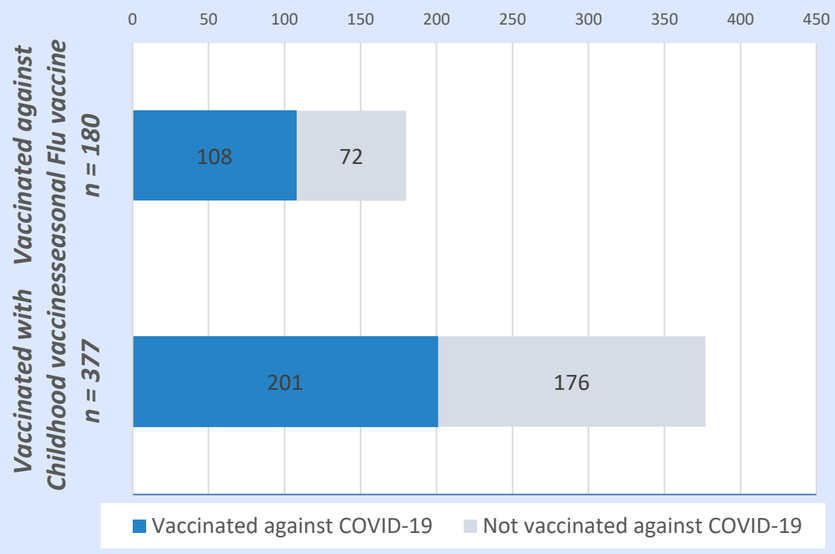


Figure 2. Relationship between Child Vaccination History and COVID-19 Vaccine Uptake

- Adherence to childhood immunizations and to annual Influenza vaccine was found to be a predictor for COVID-19 vaccine uptake (OR 4.993 and 3.509 respectively).

Sources of Knowledge on COVID-19 & its Vaccine

Variable		Odds Ratio	95% C.I.	P value
Main Source of Information on COVID-19 Infection and Vaccines	Doctor	1		0.057
	Social Media Platforms	2.214	0.884 - 5.544	0.09
	Online news outlet	**7.681**	**1.152 - 51.22**	**0.035**
	TV and Radio	0.546	0.062 - 4.805	0.585
	Health Authorization Websites (DHA, MOH, WHO, CDC)	**2.274**	**1.119 - 4.624**	**0.023**
	Word of mouth / from friends, family, or colleagues	0.799	0.198 - 3.219	0.752

Table 1. Multivariate analysis of parents' sources of Information on COVID-19

Does the quality of information on social media affect COVID-19 vaccination uptake in children?

- Of parents who vaccinated, 68% and 53% reported exposure to somewhat positive and positive information about the COVID-19 vaccine on social media, respectively. For parents who have not vaccinated the rates are lower at 32% and 47% respectively.

Variable		Odds Ratio	95% C.I.	P value
Regarding social media, what kind of information have you been exposed to regarding covid-19 vaccine for children?	I have not been exposed to any information on social media regarding this	1		0.044
	Mostly negative	1.735	0.619 - 4.864	0.295
	Somewhat negative	1.659	0.629 - 4.375	0.306
	Neutral	0.99	0.445 - 2.202	0.981
	Somewhat positive	**3.157**	**1.303 - 7.652**	**0.011**
	Mostly positive	0.982	0.361 - 2.67	0.972

Table 2. Multivariate analysis of the quality of information exposure on social media

Attitudes about the COVID-19 Pandemic and Vaccine as Predictors for Vaccine Uptake

- 68.9% of parents believe that the vaccine is effective, and 67.7% believe that a safe COVID-19 vaccine is available. Parents who did not believe so were found to be **less likely to vaccinate (p=<0.001, <0.001).**
- 83.8% of parents believe that COVID-19 is a preventable disease. Those who thought the opposite were **less likely to vaccinate (p=0.014).**
- 68.9% believe that COVID-19 vaccine will contribute to controlling the pandemic and were found to be **more likely to vaccinate (p=<0.001).**
- 56.1% of parents believe that covid-19 is a serious disease and were **more likely to vaccinate (p=0.019).**

Variable		Odds Ratio	95% C.I.	P value
I believe that covid-19 vaccine is effective	No	1		**0.009**
	Yes	3.077	1.327 - 7.134	

Table 3. Multivariate analysis of Parental Attitudes

Rate of COVID-19 Vaccine Uptake in Children

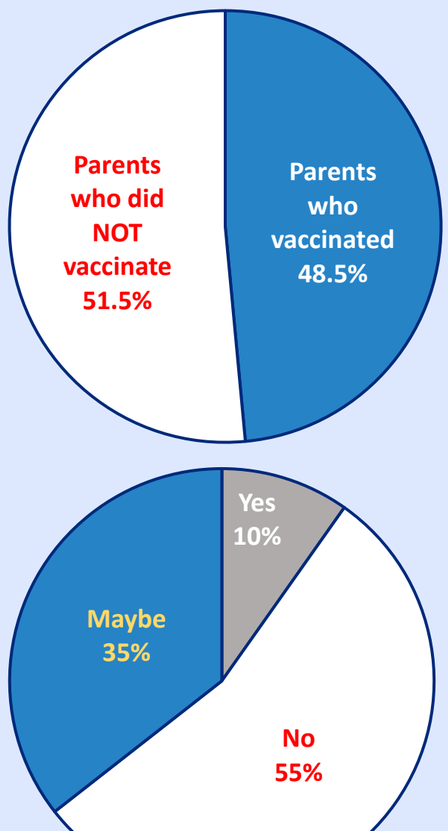


Figure 3. Parental Uptake of COVID-19 Vaccine for Children

Figure 4. Future Intent to Vaccinate for Vaccine Hesitant Parents

Reasons for Vaccine Hesitancy

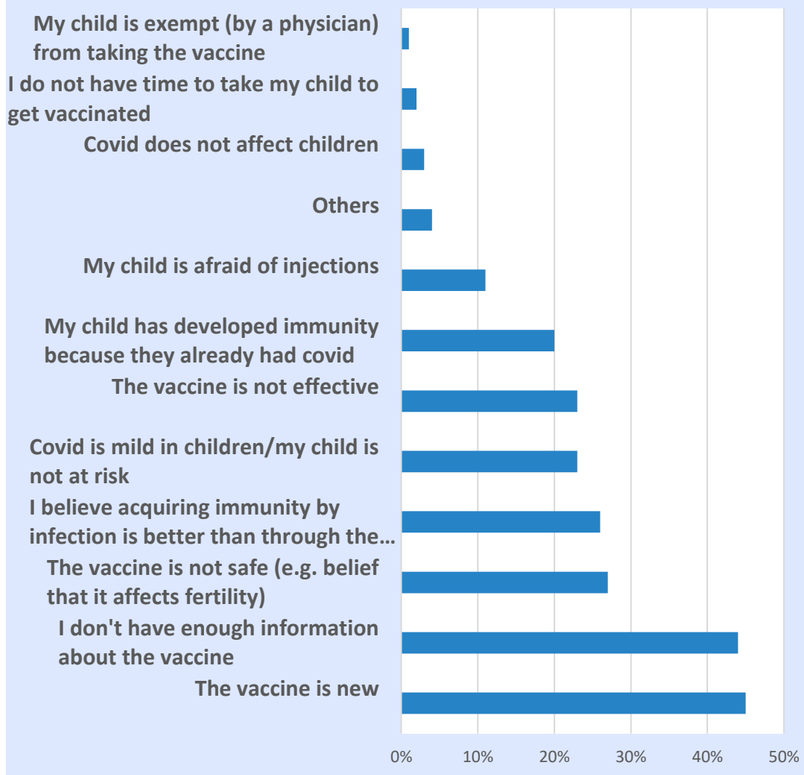


Figure 5. Parents' Reported Reasons for Refusing the COVID-19 for their Children

Motivators for Vaccine Uptake

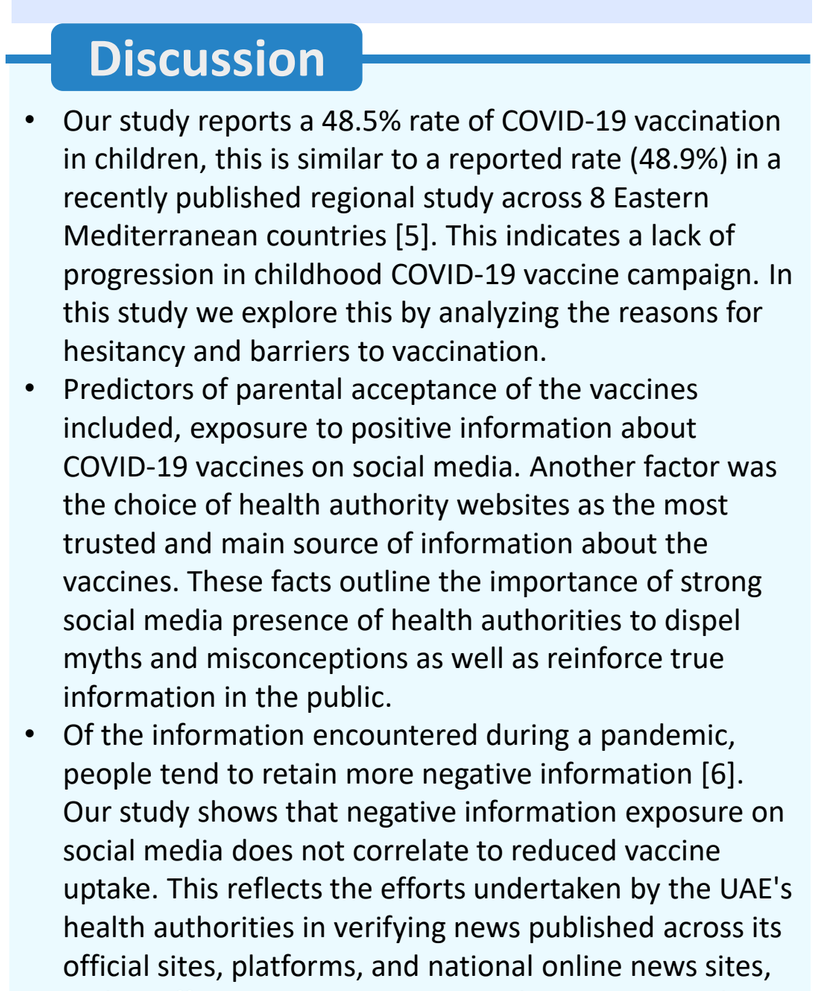


Figure 6. Factors Influencing Future Likelihood to Vaccinate

Discussion

- Our study reports a 48.5% rate of COVID-19 vaccination in children, this is similar to a reported rate (48.9%) in a recently published regional study across 8 Eastern Mediterranean countries [5]. This indicates a lack of progression in childhood COVID-19 vaccine campaign. In this study we explore this by analyzing the reasons for hesitancy and barriers to vaccination.
- Predictors of parental acceptance of the vaccines included, exposure to positive information about COVID-19 vaccines on social media. Another factor was the choice of health authority websites as the most trusted and main source of information about the vaccines. These facts outline the importance of strong social media presence of health authorities to dispel myths and misconceptions as well as reinforce true information in the public.
- Of the information encountered during a pandemic, people tend to retain more negative information [6]. Our study shows that negative information exposure on social media does not correlate to reduced vaccine uptake. This reflects the efforts undertaken by the UAE's health authorities in verifying news published across its official sites, platforms, and national online news sites, and its effect on increasing parental awareness and critical judgement.
- Child vaccination history is found to be a predictor for vaccine uptake, presented in Figure 2. This suggests that the success of present vaccination campaigns likely impacts future ones, hence why continued public health efforts to reduce parental COVID-19 vaccine hesitancy are crucial.

Conclusion

Many parents in the UAE have vaccinated their children against COVID-19. Our study revealed that previous parental practices related to the vaccination of children and positive parental attitudes, were strong predictors of COVID-19 vaccine uptake in children. It was reassuring that parents who relied on official online news websites and local health authorities, and those exposed to positive information on social media, were more likely to vaccinate. Nevertheless, equally as many parents are still vaccine-hesitant, mainly due to the novelty and lack of information about the vaccine. It is imperative that public health efforts maintain momentum, and that pediatricians incorporate parental education on the COVID-19 vaccine for children, which could potentially play a major role in combating vaccine hesitancy.

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