

Parental hesitancy and perception of the COVID-19 vaccine for children below five years in Kuala Lumpur

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Introduction

The Centres for Disease Control and Prevention (CDC) recommended COVID-19 vaccination for all children between the ages of 6 months to 5 years, irrespective the comorbidities or immune status.¹ In 2019, the World Health Organization (WHO) declared that vaccine hesitancy is one of the global health threats.²

Objective

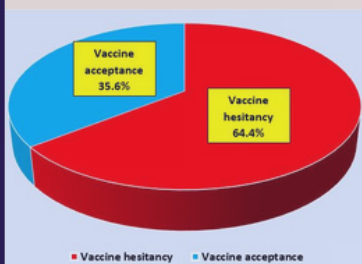
The objectives of this study were to assess parental hesitancy and perception towards this vaccine among parents of children under five years of age.

Methodology

A cross-sectional study was done at two urban primary care clinics in Kuala Lumpur between July and September 2022. Data was collected from 219 parents using convenient sampling method. Parental hesitancy and perception of COVID-19 vaccine was obtained using a self-administered questionnaire.

Results

Majority of the participants were mothers (83.6%, n=183), and Malay ethnic group. Most parents were Muslims (77.2%, n=169), had received tertiary education (55.7%, n=122), employed (69.4%, n=152) and came from the low-income group (72.6%, n=159).



About two-thirds of parents were vaccine hesitant (64.4%, n=141).

Chart 1: Parental COVID-19 vaccine acceptance and hesitancy

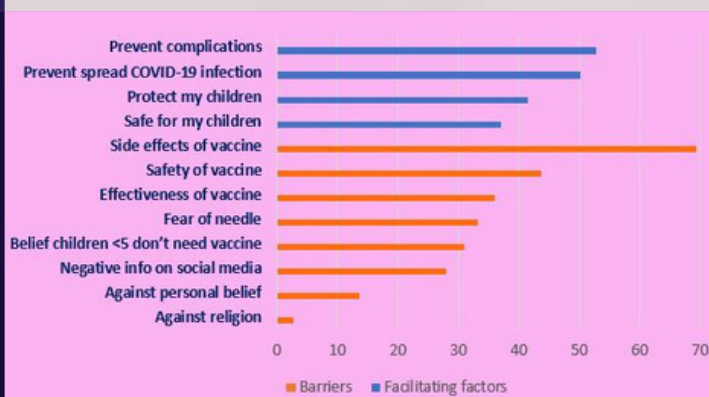


Chart 2: Parent's perception of COVID-19 vaccine to children below 5 years.

- About half of the parents perceived that the COVID-19 vaccine could prevent complications (52.9%, n=116) and the spread of the virus (50.2%, n=110).
- Common barriers to vaccination were concerns regarding side effects (69.4%, n=152), safety issues (43.8%, n=96) and effectiveness of the vaccine 79 (36.1%, n=79).
- Most parents had a correct perception that the vaccine prevents complications and the spread of the disease. However, their main barriers were concerns regarding vaccine side effects, safety and effectiveness.

Table 1: Association between parent's characteristics with vaccine acceptance and hesitancy

Demographic data	Vaccine acceptance n (%)	Vaccine hesitancy n (%)	p value
Parental Age (years)	Mean (SD) 33.51 (4.74)	Mean (SD) 31.87 (5.21)	0.02 <i>T test</i>
Gender			
Male	12 (33.3)	24 (66.7)	χ^2
Female	66 (36.1)	117 (63.9)	0.754
Ethnic group			
Malay	50 (30.1)	116 (69.9)	χ^2
Non-Malay	28 (52.8)	25 (47.2)	0.003
Religion			
Muslim	51 (30.2)	118 (69.8)	χ^2
Non-Muslim	27 (54.0)	23 (46.0)	0.002
Education			
University	45 (36.9)	77 (63.1)	χ^2
School	32 (34.8)	60 (65.2)	0.782*
No formal education	1 (20.0)	4 (80.0)	
Employment			
Employed	56 (36.8)	96 (63.2)	χ^2
Non-employed	22 (32.8)	45 (67.2)	0.568
Income Group			
Low	47 (29.6)	112 (70.4)	χ^2
Middle	23 (47.9)	25 (52.1)	0.005*
High	8 (66.7)	4 (33.3)	
Child's Comorbidities			
None	68 (34.7)	128 (65.3)	χ^2
Yes (e.g. heart /lung disease/others)	10 (43.5)	13 (56.5)	0.405

*Fisher-Freeman-Hilton exact test, p value < 0.05 is significant

Table 2: Multivariate logistic regression for predictors of vaccine hesitancy

Variables	Crude OR ^a (95% CI)	p	Adjusted OR ^b (95% CI)	Wald statistics (df)	p
Age	0.94 (0.89-0.10)	0.024	0.87 (0.80-0.96)	8.27 (1)	0.004
Ethnicity					
Non-Malay	1		1		
Malay	2.60 (1.38-4.89)	0.003	1.1 (0.20-11.24)	0.16 (1)	0.68
Religion					
Non-Muslim	1		1		
Muslim	2.71 (1.42-5.18)	0.002	2.46 (1.26-4.79)	6.92 (1)	0.008
Income group					
High-income	1		1		
Middle-income	2.17 (0.57-8.19)	0.251	1.62 (0.41-6.40)	0.48 (1)	0.48
Low-income	4.77 (1.37-16.59)	0.014	3.56 (0.98-12.93)	3.75 (1)	0.053

- Univariate analysis showed that vaccine hesitancy was associated with parental age, ethnicity, income, and Muslim religion.
- The multivariate model showed that the predictors of vaccine hesitancy were younger parents (AOR 0.87, 95% CI 0.80-0.96) and those who were Muslim (AOR 2.46, 95% CI 1.26-4.79).

Discussion

- Majority of parents (64.4%, n=141), were hesitant to vaccinate their children below 5 years of age with the future COVID-19 vaccine and had concerns regarding vaccine safety, side effects and effectiveness.
- FDA has approved 2 vaccines (Pfizer-BioNTech and Moderna) for this age group. The safety profile of this vaccine was found similar to placebo and it was well-tolerated with mild to moderate side effects.
- Parents' hesitancy to give their children the COVID-19 vaccine was significantly associated with their age and religion. With every one year increase in parents' age, they had a 13% decrease in odds to refuse the vaccine (AOR 0.87, 95%CI 0.80-0.96) suggesting that older parents are more likely to accept the COVID-19 vaccine.
- The exact cause for vaccine hesitancy among young parents is not clearly known and could be multifactorial.⁴
- Our study showed a significant association between vaccine hesitancy and religion, where Muslim parents had 2.46 times the odds to be vaccine hesitant compared to non-Muslims (AOR 2.46, 95% CI 1.26-4.79).
- This could be due to misinformation about vaccination in this community which may have influenced their decision against the vaccine. In February 2021, The National Fatwa Committee of Malaysia announced that the use of the COVID-19 vaccine was permissible.⁵

Conclusion

We found a high percentage of COVID-19 vaccine hesitancy among parents of children below five years of age. Vaccine hesitancy was associated with parental age and religion. Parents perceived correctly that the vaccine could prevent complications and spread of COVID-19 however their main barriers to vaccination were regarding vaccine side effects, safety and effectiveness.

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References: 1. CDC Recommends COVID-19 Vaccines for Young Children <https://www.cdc.gov/vaccines/covid-19/planning/children.html> (Assessed Dec 2022)

2. <https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019>(Accessed Oct 2022)

3. https://www.cdc.gov/mmwr/volumes/71/wr/mm7135a3.htm?utm_source=substack&utm_medium=email (Assessed Dec 2022)

4. Simas C, Larson HJ. Overcoming vaccine hesitancy in low-income and middle-income regions. Nat Rev Dis Primers 7, 41 (2021).

5. Mesyuarat Khas Jawatankuasa Muzakarah Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam Yang Bersidang Pada 31 Disember 2020 Mengambil Keputusan Bahawa Hukum Penggunaan Vaksin Covid 19 Adalah Harus Dan Ia Wajib Diambil Oleh Golongan Yang Ditetapkan Kerajaan - Jabatan Penerangan Malaysia [Assessed September 2021]

