

Factors Associated with Vaccination Uptake among Young Children: A Follow-up Study of 1,799 Toddlers

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Background

- The study aims to investigate:
 - the recent **childhood immunization rate** of the recommended and additional vaccination, and
 - identify the factors affecting the vaccination uptake of young children in Hong Kong.



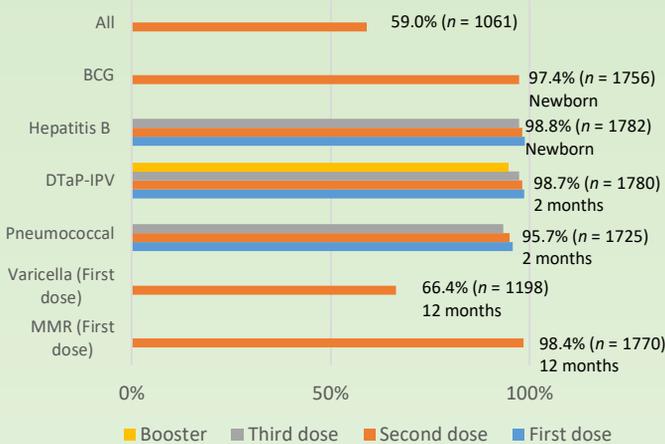
Methods

- Self-administrated questionnaires were distributed to **parents of toddlers aged 2 to 5** to collect information on
 - Socioeconomic demographic factors.**
 - Experiences during pregnancy**, such as the maternal alcohol drinking, smoking history of parents, gestational age at delivery.
 - Medical history of the toddler**: previous experience of hospitalization since birth, and vaccination record (recommended and additional vaccines).



Results

Fig 1. Childhood Immunization Rate by Types



- A total of **1,799** responses were collected.
- The **overall uptake rate of all recommended vaccinations was 59%**. Over 97% of children have received the Bacille Calmette-Guerin Vaccine (97.4%) and three doses of the Hepatitis B Vaccine (97.4%).
- However, only **66.4%** of children have received **the varicella vaccine**.



Conclusions

- To encourage the vaccination rate, more attention should be **given to families with more children, low-income families, and younger mothers**.
- Parents especially the **mothers** play an important role in the vaccination uptake of children, the government may promote vaccination uptake by providing assistance to families with **lower income and more children as well as dispelling the myths of vaccination**.

Table 1. Factors Associated with Childhood Immunization

	n	Prevalence %	Adjusted Odd Ratio (aOR)	95% CI	p-Value
Age			0.606	0.480–0.766	<0.001 *
Weeks of Pregnancy					
40 weeks or more (ref)	314	53.2%	1 (ref)		
37–39 weeks	622	64.0%	1.459	1.136–1.873	0.003 *
36 weeks or less	47	55.3%	1.181	0.675–2.065	0.561
Order of birth					
First-born (ref)	693	64.2%	1 (ref)		
Second-born	251	52.7%	0.620	0.477–0.807	<0.001 *
Third-born	40	41.2%	0.326	0.192–0.553	<0.001*
Monthly household income					
Below HKD 15,000	101	38.8%	1 (ref)		
HKD 15,000–HKD 29,999	250	53.0%	1.801	1.270–2.553	0.001 *
HKD 30,000 or above	580	71.7%	3.423	2.389–4.904	<0.001 *
Age group of mothers (at toddler's birth)					
24 or below	31	39.7%	1 (ref)		
25–34	609	59.5%	1.870	0.993–3.521	0.053
35–39	263	62.3%	2.449	1.217–4.930	0.012 *
40 or above	60	61.2%	2.897	1.240–6.766	0.014 *

- Children were more likely to be fully vaccinated when they were:
 - at a younger age** (aOR = 0.61, 95% CI: 0.48–0.78, p<0.001);
 - the first child in the family** (aOR_{secondborns} = 0.62, 95% CI: 0.48–0.81, p<0.001; aOR_{thirdborns} = 0.33, 95% CI: 0.19–0.55, p<0.001);
 - higher household income** (aOR_{\$15000–\$29999} = 1.80, 95% CI: 1.27–2.55, p=0.001; aOR_{≥\$30000} = 3.42, 95% CI: 2.39–4.90, p<0.001; compared with <\$15000);
 - and **mothers in the older age groups** (aOR_{35–39 years old} = 2.45, 95% CI = 1.22–4.93, p=0.012; aOR_{≥40} = 2.90, 95% CI = 1.24–6.77, p=0.014; compared with ≤ age 24).

Acknowledgments

- We acknowledge that this study was published in *Vaccines* **2023**, *11*(3), 535.