

Enhancing human papillomavirus vaccine acceptance in Hong Kong: a call for action and public education

Zigui Chen¹*, BS, PhD, Jason YK Chan², FRCSEd (ORL), FHKAM (Otorhinolaryngology),
Paul KS Chan¹, FHKCPath, FHKAM (Pathology)

¹ Department of Microbiology, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China

² Department of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China

* Corresponding author: zigui.chen@cuhk.edu.hk

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Growing global awareness of human papillomavirus (HPV) and its associated health risks, particularly cervical cancer, has led to widespread implementation of HPV vaccination programmes. In Hong Kong, HPV remains a substantial but underestimated public health burden, as Chu et al¹ highlighted in their recent study published in the *Hong Kong Medical Journal*. The study investigated parental acceptance of HPV vaccination for boys and girls in Primary 4 to 6, offering critical insights into the factors influencing vaccination uptake.

Human papillomavirus vaccine awareness and uptake

The study by Chu et al¹ evaluated parental awareness, knowledge, and attitudes towards HPV vaccination in Hong Kong, a city that—like many others—has integrated HPV vaccination into its Childhood Immunisation Programme (HKCIP). As these vaccination programmes expand globally, an understanding of factors that influence parental decision-making is needed to improve uptake and reduce the burden of HPV-associated diseases. Chu et al¹ found high awareness of HPV among most parents (81.4% among boys' parents and 78.5% among girls' parents). Despite this awareness, knowledge about HPV and the vaccine remains limited. Moreover, the actual vaccine uptake rates are alarmingly low: 6.8% for boys and 4.9% for girls.¹ The study identified several key factors influencing vaccine acceptance, including parental HPV vaccination status, household income, and concerns about HPV infection.¹ Focused efforts regarding safety education and implement catch-up vaccination are needed to overcome vaccine hesitancy in Hong Kong.

These results are consistent with global tendencies towards vaccine hesitancy and low uptake, despite the documented effectiveness of HPV vaccines in preventing HPV-related diseases. For example, a study by Wang et al² in

China similarly showed that parental knowledge of HPV was limited, and acceptance was hindered by misconceptions about the vaccine's safety and necessity, particularly for boys. In the United States, although HPV vaccination coverage has increased since introduction of the vaccine, disparities remain. A 2021 study revealed that only 58.6% of adolescents were fully vaccinated; the acceptance rate was lower among boys than among girls.³ In Europe, similar trends have been observed. Countries such as Italy have reported relatively low HPV vaccination rates due to scepticism about vaccine safety and insufficient public health campaigns.⁴

These regional disparities in vaccine uptake suggest that although awareness campaigns may increase recognition of HPV, they often do not result in higher vaccination rates unless they address underlying concerns about vaccine safety, efficacy, and the perceived importance of vaccinating boys. The study by Chu et al¹ showed results consistent with this challenge in Hong Kong, where boys' parents were significantly less likely to accept the vaccine than girls' parents, despite the government's efforts to provide the vaccine free of charge to girls under the HKCIP.

Barriers to human papillomavirus vaccine acceptance

A key finding in the study by Chu et al¹ is the misconception about the cost of the vaccine. Although the HPV vaccine is provided free of charge to girls under the HKCIP, many parents still considered it too expensive. This finding indicates a disconnect between the availability of free vaccines and public understanding of the Programme, likely exacerbated by the coronavirus disease 2019 pandemic, which disrupted routine healthcare services and public health campaigns worldwide.⁵

The reluctance of boys' parents to accept the HPV vaccine also reflects global trends. Many parents continue to primarily associate HPV with

cervical cancer, which is regarded as a disease that only affects girls and women. This association has persisted despite increasing evidence that links HPV to other cancers, such as penile, anal, and oropharyngeal cancers, which affect boys and men.^{6,7} This perception gap is not unique to Hong Kong; studies from the Australia, Georgia, and the United States have also identified gender bias as a major barrier to HPV vaccine acceptance for boys.⁸⁻¹⁰

Moreover, the study by Chu et al¹ demonstrated that boys' parents were more likely than girls' parents to discuss sexually transmitted diseases with their children (33% vs 15.2%). Despite these discussions, vaccine acceptance remained lower for boys. This paradox suggests that although parents may be aware of the risks of HPV transmission, they may not fully understand the broader health implications of the virus for both genders or the protective benefits of vaccination.

The importance of public education and policy interventions

The study by Chu et al¹ underscores the urgent need for more effective public education campaigns in Hong Kong. Public health authorities should focus on dispelling misconceptions about the cost and safety of the HPV vaccine, along with their efforts to emphasise its importance for both boys and girls. The fact that many parents remain unaware of the free vaccination programme for girls indicates a lack of effective communication between the government and the public. This communication issue is not unique to Hong Kong; similar challenges have been reported in Europe, where vaccine uptake has been hindered by misinformation and inadequate public health messaging.¹¹

Additionally, targeted interventions should be implemented to address the gender disparity in vaccine acceptance. Public health campaigns must highlight the risks of HPV-related cancers for boys and the benefits of achieving high vaccination coverage in both genders. Studies have shown that gender-neutral vaccination programmes, such as those implemented in Australia¹² and some parts of Europe,^{12,13} have led to significant reductions in HPV infections and associated diseases. These programmes also provide indirect protection for unvaccinated individuals through herd immunity, reinforcing the importance of including boys in national vaccination strategies.^{14,15}

Recommendations for future research and policy

To improve HPV vaccination rates in Hong Kong and worldwide, policymakers and healthcare providers should consider the following recommendations:

1. Expand public health campaigns: Government-

led campaigns should focus on increasing awareness regarding the availability of free vaccines for girls and the benefits of vaccinating boys. These campaigns must address common misconceptions about HPV and concerns about the vaccine's cost, safety, and efficacy.

2. Enhance school-based vaccination programmes: Schools serve as a critical platform for vaccine delivery and education. The integration of HPV education into the school curriculum, along with routine vaccination programmes, could help increase acceptance among both parents and students.
3. Implement gender-neutral vaccination policies: Given the evidence supporting gender-neutral vaccination programmes, policymakers should consider expanding free HPV vaccination to boys under the HKCIP. This would protect boys from HPV-related diseases while contributing to the overall reduction of HPV transmission within the community.
4. Address vaccine hesitancy through healthcare providers: Physicians and other healthcare professionals play a pivotal role in promoting vaccination. Efforts to train healthcare providers to effectively communicate the benefits of the HPV vaccine and address parental concerns are essential for greater vaccine uptake.

Conclusion

The study by Chu et al¹ provides valuable insights into the factors influencing HPV vaccine acceptance among parents in Hong Kong. The low uptake rates, despite high awareness, highlight the need for more robust public health campaigns and gender-neutral vaccination policies. By addressing misconceptions about the vaccine and expanding access to boys, Hong Kong can improve its vaccination coverage and protect future generations from HPV-related diseases. Similar efforts in other regions have shown that, with the right interventions, substantial progress can be made in increasing HPV vaccine acceptance and uptake.

Author contributions

All authors have contributed equally to the concept, development and critical revision of the manuscript. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

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