



Cervical cancer prevention practices through screening and vaccination: A cross-sectional study among Hong Kong Chinese women



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HIGHLIGHTS

- Women who are being screened are screened more frequently than necessary
- Despite high vaccination intention reported previously, only 3% 30–59 yrs women vaccinated, indicating significant intention–uptake gaps
- Information trust was associated with HPV vaccination intention but not actual uptake

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ABSTRACT

Objective. No published data are available that currently evaluate Chinese adult women's cervical cancer prevention practices through screening and vaccination using population-based samples. This study describes patterns and correlates of these behaviors among Hong Kong Chinese women aged 30–59 years.

Methods. From February to November 2014 a random sample of 1482 Hong Kong Chinese women having at least one 12–17 year-old daughter, who had heard of HPV vaccine before but had not sought HPV vaccination for daughter(s) completed structured telephone interviews. Multiple logistic regression analyses were conducted to examine factors associated with participants' cervical screening attendance, HPV vaccination uptake and intention to uptake.

Results. Overall, 80.8% of the participants reported attending asymptomatic cervical screening and 73% had regular screening. Family income and attitudes to cervical smear testing were associated with asymptomatic cervical screening attendance. Only 3.0% (45/1482) of all participants had received HPV vaccination. Among those who had not received HPV vaccination, 12.3% (183/1437) indicated positive intentions. Age below 50, household income and encouragement from family/friends were significantly associated with women's intended and actual uptake of HPV vaccination. Trusting formal and informal HPV vaccination information was positively associated with vaccination intention, while lack of concrete recommendation from doctors was negatively associated with vaccination uptake.

Conclusions. Information trust was associated with vaccination intention but not actual uptake whereas encouragement from family/friends facilitates women's HPV vaccination. Continued efforts are needed to ensure Chinese women adopting cervical cancer preventive behaviors, and must consider different specific needs of population subgroups.

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1. Introduction

Cervical cancer is the fourth most common cancer in women globally causing an estimated 266,000 death worldwide in 2012 [1]. Cervical screening and probably HPV vaccination provide effective prevention reducing the disease burden. The Hong Kong Cancer Registry 2012 indicates a local age-standardized incidence rate (ASR) for cervical cancer of 8.2 per 100,000 standard population [2], indicating a cervical cancer prevalence intermediate to other developed societies such as

Australia/New Zealand (around 5.5 per 100,000) and Russia (around 15.3 per 100,000) [1]. In March 2004 an organized Cervical Screening Program (CSP) was launched by the Maternal & Child Health Centres (MCHCs) of the Hong Kong Department of Health (DH) for 25–64 year-old women with prior sexual experience [3]. However, the program does not proactively recruit eligible but never-screened women. Such women have to proactively seek cervical smear services from family doctors, general practitioners or gynecologists. The charge for a cervical smear varies among different service providers, ranging from about HK\$100 (~US\$13) to HK\$1000 (~US\$130), depending on whether it is a standalone test or part of a health check package, type of smear performed and who performs the test. As of 2012 nearly one-third of eligible women in Hong Kong had never had a cervical smear [3]. Previous local

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studies found that the most commonly cited reasons for failure to utilize cervical screening were ignorance regarding service access, inconvenience, cost, and embarrassment [4–6].

Two types of Human Papillomavirus (HPV) vaccines (Gardasil® and Cervarix®) were introduced in Hong Kong in 2006 and 2007, respectively. Cervarix® is approved for use in females from 9 years of age onwards. Gardasil® is approved for use in females aged 9 to 45 years (and also approved for use in males aged 9 to 26 years for prevention of genital warts caused by HPV types 6 and 11) [7]. Although the main population for prophylactic HPV vaccination is adolescent girls and young women before sexual debut, adult women who often show strong interest in the vaccine [8] may also benefit from HPV vaccination [9]. A recent multinational randomized controlled trial study reported that vaccine efficacy against HPV 16/18-related 6-month persistent infection or cervical intraepithelial neoplasia grade 1 or higher (CIN1+) was significant in all age groups of women aged 26 and above with a combined efficacy of 81.1% (97.7% confidence interval 52.1–94.0) [10]. In Hong Kong, HPV vaccination is widely promoted almost exclusively through manufacturer-funded advertising and remains an individual choice. Intending recipients must seek HPV vaccination services from private providers and pay the full cost, currently around HK\$3000 (~US\$390) for the 3-dose injection. Previous studies of Chinese women found misconceptions and knowledge deficits to be common regarding cervical cancer, HPV infection and HPV vaccination [11–17]. However, most of the studies involving Hong Kong Chinese women were conducted shortly after HPV vaccines were first marketed, and focused on women's intention to vaccinate their daughters against HPV rather than their own acceptability to receive the vaccine. The only local quantitative study assessing Chinese adult women's own intention to receive HPV vaccination was conducted in 2007 found that despite misconceptions and inadequate knowledge about HPV and HPV vaccination, about 88% of the women indicated they would like to be vaccinated [16]. Women aged below 50 and who perceived a disruptive impact of HPV infection on current intimate relationship were more willing to be vaccinated. Responses of partner/family towards vaccination played an important role influencing Chinese women's intention to receive HPV vaccination [16]. However, so far no published data are currently available about the actual uptake of HPV vaccination among adult Chinese women after 8 years of HPV vaccine-related marketing. A more updated study is warranted given women's acceptability may have changed significantly in the interim since information about cervical cancer risk and prevention has been more widely promulgated.

Many overseas studies reported that recommendations from healthcare providers have positive association with young and adult women's decision-making for HPV vaccination [18–20]. Empirical studies also suggest that people more trusting of formal information, that from media, government or health professionals, are more likely to adopt active health-protective behaviors [21,22]. Lack of concrete vaccination advice from healthcare providers is commonly reported by local qualitative studies, with some women receiving conflicting views about HPV vaccination from different health professionals [23, 24]. Population-based studies are essential to assess the effect of information trust from formal and informal (family, friends, and colleagues) sources on adult women's HPV vaccination decision-making.

In this study we aimed to describe the patterns of cervical cancer prevention practices through screening and HPV vaccination among Hong Kong adult women and to identify socio-demographic correlates of their cervical cancer prevention behaviors. With particular interest in the effects of information trust, we hypothesized that (1) Trust in formal information about HPV vaccination and receiving positive vaccination advice from doctors are positively associated with women's intended and actual vaccination uptake, and (2) Trust in informal information about HPV vaccination and being encouraged by family/friends is positively associated with women's intended and actual vaccination uptake.

2. Methods

2.1. Subjects

As part of an ongoing longitudinal study investigating HPV vaccination decision-making among Hong Kong Chinese parents who (1) had at least one daughter aged 12–17 years, (2) had heard of HPV vaccine (3) but had not yet vaccinated daughters against HPV, the baseline data collected from mothers were analyzed in the present study.

2.2. Procedures

Because 98% of Hong Kong households have landline phones with free local calls, random-digit dialing telephone interviews were conducted for data collection by a Web-based Computer Assisted Telephone Interview (Web-CATI) system. To avoid oversampling of non-workers, most interviews were conducted between 18:30 and 22:30 on weekdays, and between 14:00 and 22:30 at weekends, though some were conducted between 14:00 and 18:00 at weekdays. To minimize sample bias, households with unanswered phone numbers were redialled at least 6 more times during different periods (2 weekdays, 3 weeknights, and 2 weekends) before being dropped and replaced by another number. Each contacted household was screened according to the inclusion and exclusion criteria. If the target subject refused to participate, the household was classified as a refusal and another telephone number used with the process being repeated until the target sample size was reached. Verbal consent was obtained from each eligible participant prior to interview. No incentive was provided to participants. Ethical approval was obtained from the Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster.

2.3. Measures

In addition to demographic information, participant women were asked about their attitudes towards and attendance of cervical screening, HPV vaccination uptake and intention to uptake. Attitude to cervical smear test was measured by 4 items responding to a 5-point agreement scales ranging from 1 “Strongly disagree” to 5 “Strongly agree” drawing from Cervical Smear Belief Inventory, previously validated in a Chinese population [25]. Two items measured the pros of cervical smear: “(1) A cervical smear can find the problem before it develops into cancer; (2) the earlier a cervical cancer is detected, the higher chance of a cure.” Another two measured perceived norms around smear testing: “(1) Cervical smear is now a very routine medical test; (2) all women should have regular cervical smears”. Cronbach's α for the 4 items was 0.79. Possible scores ranged from 4 to 20, higher scores indicating more positive attitude to cervical smear testing. Vaccination information trust was measured by two items addressing trust in formal (from doctors/health agencies) and informal (from friends/colleagues/neighbors) information, respectively, adapted from local studies on influenza vaccination information trust [21,26], responding to 5-point agreement scales ranging from 1 “Strongly disagree” to 5 “Strongly agree”. Cervical screening attendance was measured by asking “Have you ever had cervical smear examination?” with responses of “Yes, with no symptoms/discomfort at the time”, “Yes, had test because of symptoms/discomfort”, and “Never”. For those who have ever attended cervical screening, the frequency of attendance was also asked. HPV vaccination uptake was measured by asking whether the participant had received HPV vaccination, possible responses being “Yes” or “No”. HPV vaccination intention was measured by asking participants who had not vaccinated against HPV about the likelihood of receiving the vaccination within next 6 months using 7-point Likert scales (from 1 “definitely not” to 7 “certain”). The questionnaire was reviewed by a panel of public health experts to check the instrument's content and face validity and pilot-tested among 27 Hong Kong Chinese adult women to assess the comprehensibility, the flow of the questionnaire in

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