The Impact of Ethnicity on Awareness and Knowledge of and Attitudes Towards the Human Papillomavirus and Vaccine Among Adult Women

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Abstract

Objective: To determine whether ethnicity affects awareness, knowledge, and attitudes regarding the human papillomavirus (HPV) and the HPV vaccine.

Methods: English speaking women (n = 172) aged 18 and older were recruited from an outpatient gynaecology clinic to complete a self-administered cross-sectional questionnaire that gathered information about (1) virus awareness and knowledge, (2) vaccine awareness and knowledge, (3) attitudes towards the vaccine and (4) participant demographics. Subjects received a virus knowledge score (0 to 6), a vaccine knowledge score (0 to 10) and an attitudes score (8 to 40), with a higher score indicating more positive attitudes towards the vaccine.

Results: Virus and vaccine awareness was significantly higher in Caucasian respondents than in non-Caucasian respondents: 93% versus 69% ($P < 0.001$) and 94% versus 64%, ($P < 0.001$), respectively. In a multivariate logistic regression model, the Caucasian ethnic group, higher education status, and greater number of years in Canada each emerged as independent predictors of vaccine awareness. Both virus and vaccine knowledge scores were significantly higher in Caucasian than non-Caucasian women: 4.6 versus 3.89 ($P = 0.001$) and 7.2 versus 6.4, ($P = 0.042$), respectively. Caucasian women had significantly higher (more positive) attitudes towards the vaccine than non-Caucasians (31.4 vs. 29.2, $P = 0.021$). Higher HPV vaccine knowledge was positively associated with an interest in vaccination ($r^2 = 0.26$, $P < 0.01$) and a more positive vaccine attitudes score ($r^2 = 0.40$, $P < 0.001$).

Conclusion: Virus and vaccine awareness were both higher in Caucasian women than in non-Caucasian women. Improving HPV vaccination knowledge has the potential to improve attitudes and vaccine uptake.

Key Words: Human papillomavirus, human papillomavirus vaccines, health knowledge, attitudes, practice, ethnic group

Competing Interests: None declared.

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Résumé

Objectif : Déterminer si l'ethnicité affecte la sensibilisation au virus du papillome humain (VPH) et au vaccin anti-VPH, ainsi que les connaissances et les attitudes à leur égard.

Méthodes : La participation de femmes d'expression anglaise (n = 172) de 18 ans ou plus a été sollicitée au sein d'une clinique externe de gynécologie; nous leur avons demandé de remplir un questionnaire transversal autoadministré visant la collecte de données au sujet (1) de la sensibilisation au virus et des connaissances à cet égard; (2) de la sensibilisation au vaccin et des connaissances à cet égard; (3) des attitudes envers le vaccin; et (4) des caractéristiques démographiques des participantes. Celles-ci se sont vu attribuer un score sur les connaissances au sujet du virus (de 0 à 6), un score sur les connaissances au sujet du vaccin (de 0 à 10) et un score sur les attitudes (de 8 à 40), l'obtention d'un score accru indiquant des attitudes plus positives à l'égard du vaccin.

Résultats : La sensibilisation au virus et au vaccin était considérablement plus élevée chez les répondantes de race blanche que chez les répondantes d'autres origines ethniques : 93 % vs 69 % (P < 0,001) et 94 % vs 64 %, (P < 0,001), respectivement. Dans le cadre d'un modèle de régression logistique multivariée, le groupe ethnique de race blanche, un niveau de scolarité supérieur et un nombre supérieur d'années passées au Canada ont tous constitué des facteurs prédictifs indépendants de la sensibilisation au vaccin. Les scores sur les connaissances au sujet du virus et du vaccin ont tous deux été considérablement plus élevés chez les répondantes de race blanche que chez les répondantes d'autres origines ethniques : 4,6 vs 3,89 (P = 0,001) et 7,2 vs 6,4, (P = 0,042), respectivement. Les répondantes de race blanche ont obtenu des scores sur les attitudes considérablement plus élevés (attitudes plus positives) en ce qui concerne le vaccin que les répondantes d'autres origines ethniques (31,4 vs 29,2, P = 0,021). Le fait de disposer de plus vastes connaissances au sujet du vaccin anti-VPH a été positivement associé au fait de s'intéresser à la vaccination ($r^2 = 0,26$, P < 0,01) et à l'obtention d'un score sur les attitudes à l'égard du vaccin plus positif ($r^2 = 0,40$, P < 0,001).

Conclusion : La sensibilisation au virus et au vaccin était plus élevée chez les répondantes de race blanche que chez les répondantes d'autres origines ethniques. L'amélioration des connaissances au sujet de la vaccination anti-VPH a le potentiel d'entraîner l'amélioration des attitudes et de la mesure dans laquelle le vaccin est utilisé.

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INTRODUCTION

Cervical cancer, caused by oncogenic human papillomavirus subtypes, is the third most prevalent malignancy in Canadian women aged 20 to 49 years.[1,2] HPV is the most common sexually transmitted infection (STI), with up to 75% of sexually active adults infected in their lifetime.[3,4] In 2006 in Canada and the United States a quadrivalent HPV vaccine was licensed for use among females aged nine to 26 years.[5] The vaccine protects against HPV subtypes responsible for 90% of genital warts and 70% of cervical cancers (HPV 6, 11, 16, and 18).[6] In the province of Ontario, vaccine administration is funded for grade eight girls.

Ethnicity is an important determinant of sexual health, affecting the acceptability of sexual health promotion messages and use of sexual health services.[7] Awareness of HPV was higher in Caucasian women in studies in the United States and the United Kingdom.[8–11] Further, knowledge about HPV, vaccine awareness, and understanding of vaccine-related knowledge items have been shown to be significantly higher in White than in Black participants.[8,11,12] Studies have revealed higher rates of vaccine acceptance in White British women, and non-White ethnicity has been identified as a significant predictor of negative attitudes to vaccination.[10]

In the United States, studies have largely focused on comparisons between Caucasians and African Americans, but many urban areas have a more diverse ethnic makeup.[8–9,11] It is unclear whether ethnic discrepancies in vaccine-related outcomes go beyond White and Black women. The primary objective of this study was to determine whether there is an association in adult women between ethnicity and HPV and HPV vaccine awareness, knowledge, and attitudes towards the vaccine. Secondary objectives included examining the association between vaccine knowledge and attitudes towards the vaccine.

METHODS

Women attending the outpatient gynaecology clinic of St Michael's Hospital in Toronto, Ontario, were approached for the study. This clinic is located in downtown Toronto and serves a multi-ethnic population of varied socioeconomic status. Data collection took place from January 2009 to April 2009. The study included women aged 18 and older who were fluent in English. Non-English speaking women were excluded because the self-administered survey was produced only in English.

During the period of data collection, a "Women's Health Immunization Study" poster was displayed in the clinic waiting room. Upon arrival at the clinic, patients were told about the study and were provided with an information letter. A study investigator approached the women in the waiting room to describe the study. Interested participants were instructed to complete the self-administered questionnaire anonymously, seal it in the provided envelope, and submit it in a drop box located in the waiting room. Participants were instructed that completion of the survey implied their consent to participate in the study.

The study used a cross-sectional quantitative survey study design. The questionnaire (Appendix) consisted of four parts:

1. HPV knowledge,
2. HPV vaccine knowledge,
3. HPV vaccine attitudes, and
4. demographic information.

No previously validated questionnaires have been used to assess these primary outcomes, and therefore our questionnaire was adapted from previous studies.[4,13–16]

In the HPV knowledge section (Part 1), knowledge was assessed by the question "Have you heard of HPV?" If participants were aware of HPV they continued within Part 1 to answer six true or false questions related to the infection; responses were converted to binary scores (correct answer = 1, incorrect answer = 0). The scores from these six items were added to create an HPV knowledge score, ranging from 0 to 6. These questions were adapted from previously published studies assessing HPV knowledge.[4,13] If participants were unaware of HPV, they left the remainder of Part 1 blank and instead completed the HPV vaccine knowledge section (Part 2).

In Part 2, HPV vaccine awareness was assessed by the question "Have you heard of the HPV vaccine?" If participants answered yes, they then responded to 10 true or false questions related to the vaccine. The items assessing vaccine knowledge were adapted from a published Canadian study.[16] The correct responses were totalled to create a vaccine knowledge score, ranging from 0 to 10. Participants who had not heard of the HPV vaccine continued to the HPV vaccine attitudes section (Part 3).