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Knowledge, attitudes and perceptions of African parents in Sydney, Australia towards Human Papillomavirus vaccine

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Original article

Abstract

Vaccine uptake in children below 18 years of age is dependent on parental consent. This study seeks to report on the knowledge, attitudes and perceptions of African parents in Sydney, Australia towards Human Papillomavirus vaccine.

Purpose: To determine the knowledge, attitudes, and perceptions of African parents in Sydney, Australia on the HPV vaccine.

Materials and methods: A questionnaire directed at African parents of children aged 10 to 15 years old in Sydney Australia was distributed from April 2023 to October 2023.

Results: A total of 31 respondents returned completed questionnaires. The parents had a high level of knowledge on HPV vaccine (74.2%). Perception towards the vaccine was positive with the majority (83.9%) agreeing to vaccine uptake following prior information and expressing willingness for their children to be vaccinated (61.3%). Attitudes towards the vaccine were found to be positive. Majority of the parents were certain that the vaccine was neither against their religious/moral beliefs (71.0%) nor for experimental purposes (64.5%).

Conclusion: Overall, this study revealed that African parents in Sydney, Australia have a high level of knowledge on HPV vaccine, positive perceptions and positive attitudes towards HPV vaccine.

Keywords

- cervical cancer
- ethnic minorities
- infectious disease
- migrant health
- Oceania
- HPV

Contribution

A – Preparation of the research project
B – Assembly of data
C – Conducting of statistical analysis
D – Interpretation of results
E – Manuscript preparation
F – Literature review
G – Revising the manuscript

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Introduction

Human Papillomavirus (HPV) is the most commonly sexually transmitted infection affecting males and females worldwide.[1] Oncogenic HPV infection can result in cervical, anogenital, head and neck cancers.[2] HPV-16 and HPV-18 represent the high-risk types responsible for 70% of all invasive cervical cancers.[2] It has been projected that 20% of adolescent girls will be infected by age 18.[3] 70% of these infections will clear within 12 months; only a small percentage who develop persistent and recurrent infections will go on to develop cervical cancer.[2,3]

Cervical cancer is the fourth most common cancer in females and the third most frequent cause of death with about 604,127 global cases and 341,831 deaths in 2020.[4] This represents a significant increase from 570,000 cases and 311,000 deaths respectively in 2018.[2,5]

The rates of HPV infection vary between geographical areas and among population groups. In the Western world, cervical cancer has been on the decline due to timely screenings and vaccination programs. The case however is the reverse in the developing world for obvious reasons.[2]

In sub-Saharan Africa, cervical cancer is the leading cause of female cancer deaths in South African women aged 15–44 years old.[6] In Nigeria, cervical cancer accounts for approximately 65% of histologically confirmed gynaecological cases and represents a major health problem in the region.[7] Young persons in Zimbabwe aged 15–24 years old are associated with many risk factors such as early sexual debut, multiple sexual partners, and high rate of HIV infections which increase the chances of developing cervical cancer.[8] Poor health capabilities, inaccessibility to medical care, and failure to recognize cervical cancer as a major health concern are some of the barriers in Africa.[9]

Vaccination has been proven to be an effective tool in preventing HPV infections and HPV-related cancers.[1,10] Australia, Canada, the USA, and the UK were among the first nations to introduce HPV vaccination into their national immunisation programs.[2] Routine vaccination is recommended for boys and girls between ages 11 and 13 with catch-up immunisation up to age 26.[11,12]

Several studies have reported lower vaccine awareness and uptake among ethnic minorities in the Western world.[2,13] These studies have indicated that Africans from sub-Saharan Africa are limited in knowledge, regarding cervical cancer and HPV. The limited awareness has been projected to affect vaccine acceptability and uptake.[3] Other studies have reported religious and cultural beliefs and the high cost of vaccines as major reasons for hesitancy.[7] It is logical to assume that these migrants may be unaware of HPV vaccination and its benefits.[2]

In 2001, a nationwide UK study indicated that African children had poorer uptake of childhood immunizations way behind their Asian and Caucasian counterparts.[3] In America, medical mistrust varied significantly with race, with black women reporting the highest scores.[14]

Newcomers to Canada have been reported to have lower vaccine uptake and higher rates of HPV infections.[1] The reasons were attributed to cultural norms surrounding sexual health discussions and language barriers.[1] By refusing or delaying vaccination, vaccine-hesitant persons and communities undermine the prevention and hence elimination of diseases for which vaccines are available.[15]

In Australia, Africans belong to a growing population of ethnic minorities. As parental consent for HPV vaccine uptake is required for children under 18 years of age, exploring parental opinions is crucial to vaccine acceptability.[16,17]

The purpose of this study is to determine the knowledge, attitudes, and perceptions African parents in Sydney, Australia possess on the HPV vaccine. This study also aims to explore the acceptability of the HPV vaccine and the barriers to accessing this vaccine. The insight gained from this research can inform health policies, strategies, and programs tailored toward addressing concerns among this ethnic group, thereby improving vaccine uptake.

Material and methods

Target population

This study targeted Africans residing in Sydney, Australia with children aged 10 to 15 years old. Africans in this context represent persons who were born in Africa and migrated to Australia at some point in time or Australian residents/citizens of African descent.

Survey design

In the survey, a structured questionnaire containing a series of questions on the knowledge, attitudes, and perceptions of the respondents along with their willingness to accept or reject HPV vaccines was administered.

The questionnaire contained 5 close-ended statements assessing knowledge of HPV vaccines, with response options of “true”, “false” or “not sure”. These statements were as follows:

1. HPV vaccine is protective against human papilloma virus infections.
2. HPV vaccine is effective against cervical cancer.
3. HPV vaccine can be given at any age.
4. The vaccine can be given to males and females.
5. The vaccine requires at least 2 doses.

On attitudes towards the vaccine, participants had to respond to 5 close-ended statements with options ranging from "strongly disagree" to "strongly agree" and "I do not wish to disclose". The statements were as follows:

1. I like the idea of HPV vaccine availability.
2. I would like my children to receive the vaccine.
3. HPV vaccine is safe for children.
4. Taking HPV vaccine should be encouraged only if adequate information has been given to the recipients.
5. I think the vaccine is really unnecessary and should be optional.

On perceptions towards the vaccine, participants had to respond to 5 close-ended statements with options ranging from "strongly disagree" to "strongly agree" and "I do not wish to disclose". The statements were as follows:

1. The HPV vaccine is protective and beneficial to the recipients.
2. I think the vaccine is for experimental purposes.
3. The vaccine will affect fertility later on in life.
4. The vaccine will make children promiscuous.
5. HPV vaccine is against my moral and/or religious beliefs.

Questions on sociodemographic factors were also included, namely, gender, age, residence, place of origin, highest qualifications obtained, marital status, employment and annual gross income.

The questionnaire was tested by a small group of volunteers prior to data collection. Some questions had to be modified or rephrased based on the pre test outcome.

Data collection

The survey was conducted via Whatsapp links and phone SMS, as well as in person via African shops, religious gatherings and events, over 6 months from April 2023 to October 2023. A total of 100 questionnaires were distributed electronically and in person. Thirty-one respondents returned completed questionnaires, giving a response rate of 31%. At the end of the collection period, responses were collated and analysed. Returned questionnaires were screened for completeness. Responses from respondents who met the inclusion criteria were included in the final analysis.

Inclusion criteria:

- Adult of African descent who is ordinarily resident in Sydney, Australia and
- A parent to a child / children between 10–15 years old.

Exclusion criteria:

- Adult of African descent who is not resident in Sydney, Australia and
- Not a parent to a child / children between 10–15 years old.

Data analysis

Data analysis was done with SPSS (Statistical Package for Social Sciences) software Version 28. Descriptive statistics, percentages and frequencies were utilised. The results were presented in tables and summarised narratives.

Ethics statement and approval

This study was approved by the Institutional Review Board (IRB), Oceania University of Medicine (IRB approval number 21-1122SA). The questionnaire utilised for the research maintained anonymity. No identifiable personal information was collected by the researchers. Participants were informed at the start that no identifiable data would be collected. The study description was given in a summary. The decision to complete the questionnaire was voluntary. Completing the questionnaire implied informed consent from the participant.

Results

Of the 31 respondents, 48.4% were aged 41 and above, the majority were females (67.7%) and 45.2% were of West African origin (Table 1). More than half reported attaining a bachelor's degree or higher (90.3%) and being married or in a de facto relationship (71%). About half (51.6%) reported annual gross income of more than $ 80,000 (Table 1).

Table 1. Sociodemographic characteristics of parents (N = 31)

Characteristics	Percentage (%)
Gender	
Male	32.3
Female	67.7
Age	
25–29	3.2
30–34	9.7
35–40	38.7
41 and above	48.4
Residence	
Urban Australia	87.1
Regional Australia	9.7
Other	3.2
Place of origin	
North Africa	6.5
Southern Africa	19.4
East Africa	29.0
West Africa	45.2
Highest Qualification	
High school	6.5
Certificate program	3.2
Bachelor's degree	61.3
Masters or higher	29.0
Marital status	
Single	16.1
De facto relationship or married	71.0
Divorced, separated or widowed	9.7
Prefer not to say	3.2
Employment	
Casual	16.1
Part-time	6.5
Full time	64.5
Self employed	12.9
Annual gross income [in $]	
40 001–60 000	12.9
60 001–80 000	16.1
80 001 and above	51.6
Prefer not to say	19.4

Knowledge of Human Papillomavirus vaccine

To assess the respondents' knowledge of the HPV vaccine, questions were asked on the effectiveness of the vaccine against HPV infections and cervical cancer, whether the vaccine can be given at any age and to all genders, and the minimum dosage requirement.

Most parents were certain that HPV vaccines were effective against HPV infections (74.2%) and against cervical cancer (58.1%). Almost half (48.4%) agreed that the vaccine could be given to all genders and at certain ages. About half (51.6%) admitted to the vaccine requiring a minimum of 2 doses (Table 2).

Table 2. Knowledge of Human Papillomavirus (HPV) vaccine

Statement	True		False		Not sure	
	n	%	n	%	n	%
HPV vaccine is effective against HPV infections	23	74.2	6	19.4	2	6.5
HPV vaccine is effective against cervical cancer	18	58.1	2	6.5	11	35.5
HPV vaccine can be given at any age	5	16.1	15	48.4	11	35.5
The vaccine can be given to males and females	15	48.4	6	19.4	10	32.3
The vaccine requires at least 2 doses	16	51.6	3	9.7	12	38.7

Attitudes towards Human Papillomavirus Vaccine

To gain insight into the attitudes towards the HPV vaccine, respondents were asked questions on the likeability, safety, acceptance, and necessity of the vaccine.

The majority liked the idea of vaccine availability (67.8%) and expressed willingness for their children to receive the vaccine (61.3%). Almost half (48.4%) agreed that the vaccine was safe for children. A great majority (83.9%) believed that vaccine uptake should be encouraged only after adequate information has been given. About half of the respondents (58.1%) were in disagreement with the statement that the vaccine was unnecessary and should be optional (Table 3).

Perceptions of Human Papillomavirus vaccine

The perceptions of the respondents towards the HPV vaccine were assessed utilising questions on benefits to recipients, effect on fertility, religious/moral standing, experimental and promiscuity possibilities.

Table 3. Attitudes towards human papillomavirus (HPV) vaccine

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Unwilling to say	
	n	%	n	%	n	%	n	%	n	%	n	%
I like the idea of HPV vaccine availability	5	16.1	1	3.2	2	6.5	11	35.5	10	32.3	2	6.5
I would like my children to receive the vaccine	3	9.7	1	3.2	5	16.1	10	32.3	9	29.0	3	9.7
HPV vaccine is safe for children	1	3.2	3	9.7	10	32.3	10	32.3	5	16.1	2	6.5
Taking HPV vaccine should be encouraged only if adequate information has been given to the recipients	0	0.0	0	0.0	4	12.9	10	32.3	16	51.6	1	3.2
I think the vaccine is really unnecessary and should be optional	11	35.5	7	22.6	7	22.6	3	9.7	2	6.5	1	3.2

Table 4. Perceptions of human papillomavirus (HPV) vaccine

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Unwilling to say	
	n	%	n	%	n	%	n	%	n	%	n	%
HPV vaccine is protective and beneficial to the recipients	2	6.5	1	3.2	3	9.7	17	54.8	6	19.4	2	6.5
The vaccine is for experimental purposes	9	29.0	11	35.5	8	25.8	1	3.2	0	0.0	2	6.5
The vaccine will affect fertility later in life	11	35.5	3	9.7	12	38.7	1	3.2	1	3.2	3	9.7
The vaccine will make children promiscuous	10	32.3	10	32.3	8	25.8	1	3.2	0	0.0	2	6.5
HPV vaccine is against my moral and/or religious beliefs	15	48.4	7	22.6	4	12.9	2	6.5	1	3.2	2	6.5

The majority disagreed with statements that the vaccine was against their religious/moral beliefs (71%), the vaccine was for experimental purposes (64.5%) or the vaccine would make their children promiscuous (64.4%). A great majority (74.2%) agreed that the HPV vaccine is protective and beneficial to the recipients.

On whether the vaccine will affect fertility later on in life, nearly half of the respondents (45.2%) were certain that the vaccine did not affect fertility. A small proportion (6.4%) were of the contrary opinion, while 38.7% remained neutral, and another 9.7% were unwilling to say (Table 4).

Discussion

The figures on cervical cancer and related deaths appear to be rising.[2,5] It has become a health priority worldwide to increase HPV vaccination in order to eliminate these preventable diseases. At the same time, as global migration is on the increase, not much is known regarding HPV vaccination among ethnic minorities in Australia.

Overall, the awareness level was high which indicates that the respondents have good knowledge of the HPV vaccine in contrast to prior studies elsewhere.

Among surveyed Africans in the UK, only 8% reported a high awareness level.[18] A large proportion (70%) of newcomers to Canada who were mostly from North Africa and the Middle East had never heard of HPV or the vaccine 1. In the USA, 84% of immigrant Haitian mothers had no knowledge of HPV or the vaccine.[19] The high level of awareness among African parents in Sydney could be attributed to the school-based programs for boys and girls aged 12–13 years old.[20]

Attitudes towards the vaccine were reportedly more positive than negative. Vaccine acceptability (61.3%) was considerably higher than prior surveys in other nations. This was reported to be 51% in the UK and 36% among newcomers in Canada.[1,18] In a qualitative research among African Americans in the USA, while the majority showed positive attitudes towards the vaccine in terms of cancer prevention, others expressed concerns about vaccine novelty, children being too young and doubts on whether vaccine testing factored in effects on different ethnicities.[21]

In Romania, 64% of parents were against the vaccine. They were rather in support of other protective and preventive methods.[22]

The relatively high rate of vaccine acceptability in Sydney has again been attributed to the success of school-based HPV vaccination programs.[20]

Less than 10% expressed negative perceptions towards the HPV vaccine. This finding is in contrast to a 2016 UK research among Africans where the majority of respondents expressed fears of promiscuity, infertility, and unclear side effects.[3,23] Haitian and recently migrated Korean women in the USA believed the vaccine was more appropriate for promiscuous individuals.[24] In another qualitative research among immigrant Haitian mothers in the USA, a few respondents were certain that the vaccine was an experiment on Haitians, blacks, and poor people just like HIV/AIDS.[19]

Somali parents in the Netherlands perceived the vaccine as incompatible with their religious faith, which precludes premarital sex.[25]

The strength of this research lies in the fact that all respondents answered every question contained in the questionnaire. There was no need to exclude a returned questionnaire based on incompleteness. The major limitation of this study is the small sample size which may be insufficient to generalise findings on the African population in Sydney, Australia. Similar limitations were reported in Canada1 and among ethnic minority mothers in the UK.[23]

Potential respondents had underlying suspicions about the research. For some, it was seen as a government ploy for data mining or monitoring purposes even though it was clearly explained that there were no personal identifiers in the questionnaires and the research had nothing to do with any government. A similar finding was reported in the SouthEastern USA where medical mistrust and suspicion of institutions were remarkably high among black college women.[14]

The items in the questionnaire were self-reported, giving rise to the possibility of social desirability bias and recall bias. This limitation was noted in a 2015 research among racially and ethnically diverse college women in Southeastern USA and among newcomers to Canada.[1,14] Actual vaccine uptake was not assessed in this research. Statements on willingness to vaccinate one's children are only indicative of vaccine acceptance and may not reflect actual uptake.

Conclusion

This study revealed that African parents in Sydney, Australia have a high level of knowledge on HPV vaccine, positive perceptions and positive attitudes towards HPV vaccine. They are open to having their children receive the vaccine as at when due although it is uncertain as to whether this translates into actual uptake or not. There is a need to improve confidence levels in the HPV vaccination program as the majority of the respondents indicated that HPV vaccine uptake should be encouraged only if adequate information has been given to the recipients. Given the limitations of this research, HPV vaccination coverage needs to be investigated further especially among minority communities in multicultural societies.

References

[1] Wilson LA, Quan AML, Bota AB, et al. Newcomer knowledge, attitudes, and beliefs about human papillomavirus (HPV) vaccination. BMC Fam Pract. 2021;22(1):17. doi: 10.1186/s12875-020-01360-1.

[2] Netfa F, Tashani M, Booy R, King C, Rashid H, Skinner SR. Knowledge, attitudes and perceptions of immigrant parents towards Human Papillomavirus (HPV) vaccination: A systematic review. *Trop Med Infect Dis*. 2020;5(2):58. doi: 10.3390/tropicalmed5020058.

[3] Mupandawana ET, Cross R. Attitudes towards human papillomavirus vaccination among African parents in a city in the North of England: A qualitative study. *Reprod Health*. 2016;13(1):97. doi: 10.1186/s12978-016-0209-x

[4] Singh D, Vignat J, Lorenzoni V, et al. Global estimates of incidence and mortality of cervical cancer in 2020: A baseline

analysis of the WHO Global Cervical Cancer Elimination Initiative. *Lancet Glob Health*. 2023;11(2):e197-e206. doi: 10.1016/S2214-109X(22)00501-0.

[5] Arbyn M, Weiderpass E, Bruni L, et al. Estimates of incidence and mortality of cervical cancer in 2018: A worldwide analysis. *Lancet Glob Health*. 2020;8(2): e191-e203. doi: 10.1016/s2214-109x(19)30482-6.

[6] Milondzo T, Meyer JC, Dochez C, Burnett RJ. Misinformation drives low Human Papillomavirus vaccination coverage in South African girls attending private schools. *Frontiers in Public Health*. Front Public Health. 2021;9:598625. doi: 10.3389/fpubh.2021.598625.

[7] Ohaeri B, Adefolaju AO, Onyeneho CA. Knowledge, attitudes and perceptions of Nigerian parents towards human papilloma virus (HPV) vaccines. *Eur J Midwifery*. 2020;4:2. doi: 10.18332/ejm/114886.

[8] Mapanga W, Girdler-Brown B, Singh E. Knowledge, attitudes and practices of young people in Zimbabwe on cervical cancer and HPV, current screening methods and vaccination. *BMC Cancer*. 2019;19(1):845. doi: 10.1186/s12885-019-6060-z.

[9] Perlman S, Wamai RG, Bain PA, Welty T, Welty E, Ogembo JG. Knowledge and awareness of HPV vaccine and acceptability to vaccinate in sub-Saharan Africa: A systematic review. *PLoS ONE*. 2014;9(3):e90912. doi: 10.1371/journal.pone.0090912.

[10] Alemany L, Serrano B. HPV type specific contribution to cancer. www.hpvworld.com. https://www.hpvworld.com/articles/hpv-type-specific-contribution-to-cancer/.

[11] Jeudin P, Liveright E, del Carmen MG, Perkins RB. Race, ethnicity and income as factors for HPV vaccine acceptance and use. *Hum Vaccin Immunother*. 2013;9(7):1413-1420. doi: 10.4161/hv.24422.

[12] Human papillomavirus vaccine for Australians. FactSheet. Westmead: National Centre for Immunisation Research and Surveillance. Published September 26, 2024. Accessed October 27, 2024. https://www.cirs.org.au/ncirs-fact-sheets-faqs/human-papillomavirus-vaccine-australians.

[13] Galbraith-Gyan KV, Lechuga J, Jenerette CM, Palmer MH, Moore AD, Hamilton JB. African-American parents' and daughters' beliefs about HPV infection and the HPV vaccine. *Public Health Nurs*. 2019;36(2):134-143. doi: 10.1111/phn.12565.

[14] Kolar SK, Wheldon C, Hernandez ND, Young L, Romero-Daza N, Daley EM. Human papillomavirus vaccine knowledge and attitudes, preventative health behaviors, and medical mistrust among a racially and ethnically diverse sample of college women. *J Racial Ethn Health Disparities*. 2015 Mar;2(1):77-85. doi: 10.1007/s40615-014-0050-2.

[15] Tankwanchi AS, Bowman B, Garrison M, Larson H, Wiysonge CS. Vaccine hesitancy in migrant communities: A rapid review of latest evidence. *Curr Opin Immunol*. 2021;71:62-68. doi: 10.1016/j.coi.2021.05.009.

[16] Tung ILY, Machalek DA, Garland SM. Attitudes, knowledge and factors associated with human papillomavirus (hpv) vaccine uptake in adolescent girls and young women in Victoria, Australia. *PLoS One*. 2016;11(8):e0161846. doi: 10.1371/journal.pone.0161846.

[17] Zhu L, Zhai S, Siu PT, et al. Factors related to Chinese parents' HPV vaccination intention for children. *Am J Health Behav*. 2019;43(5):994-1005. doi: 10.5993/AJHB.43.5.10.

[18] Marlow LAV, Wardle J, Forster AS, Waller J. Ethnic differences in human papillomavirus awareness and vaccine acceptability. *J Epidemiol Community Health*. 2009;63(12):1010-1015. doi: 10.1136/jech.2008.085886.

[19] Stephens DP, Thomas TL. Cultural values influencing immigrant Haitian mothers' attitudes toward human papillomavirus vaccination for daughters. *J Black Psychol*. 2012;39(2):156-168. doi: 10.1177/0095798412461807.

[20] Zimet GD, Rosberger Z, Fisher WA, Perez S, Stupiansky NW. Beliefs, behaviors and HPV vaccine: Correcting the myths and the misinformation. *Prev Med*. 2013;57(5):414-418. doi: 10.1016/j.ypmed.2013.05.013.

[21] Galbraith-Gyan KV, Lechuga J, Jenerette CM, Palmer MH, Moore AD, Hamilton JB. HPV vaccine acceptance among African-American mothers and their daughters: An inquiry grounded in culture. *Ethn Health*. 2019;24(3):323-340. doi: 10.1080/13557858.2017.1332758.

[22] Voidăzan S, Tarcea M, Morariu SH, Grigore A, Dobreanu M. Human papillomavirus vaccine – knowledge and attitudes among parents of children aged 10–14 years: A cross-sectional study, Tîrgu Mureş, Romania. *Cent Eur J Public Health*. 2016;24(1):29-38. doi: 10.21101/cejph.a4287.

[23] Marlow LAV, Wardle J, Waller J. Attitudes to HPV vaccination among ethnic minority mothers in the UK: An exploratory qualitative study. *Hum Vaccin*. 2009;5(2):105-110. doi: 10.4161/hv.5.2.7368.

[24] Lee HY, Lee MH. Barriers to cervical cancer screening and prevention in young Korean immigrant women: Implications for intervention development. *J Transcult Nurs*. 2016;28(4):353-362. doi: 10.1177/1043659616649670.

[25] Salad J, Verdonk P, de Boer F, Abma TA. "A Somali girl is Muslim and does not have premarital sex. Is vaccination really necessary?" A qualitative study into the perceptions of Somali women in the Netherlands about the prevention of cervical cancer. *Int J Equity Health*. 2015;14(1):68. doi: 10.1186/s12939-015-0198-3.