Appraising the Utilization of Human Papillomavirus Vaccine among Young Women in Anambra State, Nigeria

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Abstract: Cervical cancer is one of the leading causes of death in the female population and is the most common genital cancer. Rate at which women suffer from cervical cancer in developing countries is increasing rapidly and Nigeria is no exception. This inspired the study to investigate factors affecting the uptake of human papillomavirus vaccines among young women in Anambra state, Nigeria. Six focus group discussions involving young women of 9 – 26 years were conducted in Anambra in South-Eastern Nigeria. A total of 60 participants were used for the study. The study revealed that there was limited knowledge of the human papillomavirus vaccine among the participants, hence, uptake of the vaccine was poor in the study population. Cost of the human papillomavirus vaccine, culture/religious influences were among the factors militating against the uptake of the vaccine. The result also highlighted possible ways of promoting human papillomavirus vaccine uptake which include subsidization of the vaccine cost or making it free, and prioritization of the vaccine and making it available in all hospital. In conclusion, we found gaps in awareness creation and cultural deconstruction that will require the expertise of trained health social workers to manage. Addressing these gaps will help scale up acceptance and utilization of HPV vaccines, which is an ambition for Nigeria's health promotional authorities.

Keywords: human papillomavirus; vaccine utilization; young women; Anambra state; social work.

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Introduction

The catastrophe of losing one woman every 2 minutes to cervical cancer is lamentable in the face of progressions in cervical cancer prevention and treatment (World Health Organization (WHO), 2022). Despite being a generally preventable disease through human papillomavirus (HPV) vaccination and screening, the burden of cervical cancer is expanding each year with a concomitant broadening of global health inequities (Sung et al., 2021). In terms of global cancer incidence and mortality, cervical cancer ranks fourth with an estimated 604,000 new patients and 342,000 deaths in 2020 (Sung et al., 2021) It is disturbing to note that approximately 90% of the worldwide cervical cancer incidence and mortality occur in low- and middle-income countries, with women of low financial status bearing the most burden (WHO, 2022) Such incongruities in cervical cancer burden illustrate tremendous socioeconomic gaps between countries and unjust implementation of cervical cancer prevention and control measures including HPV vaccination and organized screening programmes (Okolie et al., 2022).

Based on world statistics of HPV vaccine coverage 33.6% of young women aged 10–20 years who obtained the complete course of vaccine were from industrialised nations, whereas only 2.7% of young women from poor countries received the vaccine (Woldehawaryat et al., 2023). Human papillomavirus is one of the most common sexually transmitted infections in sexually active women in Nigeria. An estimated 3.5% of Nigerian women harbour cervical HPV-16/18 infection at a given time, while 66.9% of invasive cervical cancers are attributed to HPVs 16 or 18 (ICO/IARC Information Centre on HPV and Cancer, 2023). However, it is believed that this percentage could be largely underreported since Nigerians would prefer keeping their medical conditions secret, usually for fear of stigmatization (Igwe et al., 2015). HPV infection is the cause of cervical cancer and vaginal cancers among women, and of oropharyngeal and anal cancers among men and women (HPV Information Centre, 2023). About 12,075 Nigerian women are diagnosed with cervical cancer and 7,968 die of the disease each year (ICO/IARC Information Centre on HPV and Cancer, 2023).

So far, Nigeria has made efforts in curbing HPV infection among young people. The Nigerian Federal Ministry of Health ((FMoH), 2008) recommended that immunization against HPV should be administered to people within the ages of 9 to 26 years and usually before the start of sexual activity. Also, to curb the spread of HPV infection, the HPV vaccine was licensed in Nigeria in 2009 (Odetola & Ekpo, 2012). In 2013, the vaccine manufacturers (Merck and GSK) offered the Global Alliance on Vaccines and Immunization (GAVI) a reduced price of US$4-50 per dose from the initial selling price of US$30-40 (Jit et al., 2014). This reduction was to ensure access for developing countries like Nigeria,

which need the vaccine the most (Okunade et al., 2017). The high cost of the HPV vaccine in Nigeria has been a hindrance to the accessibility of the vaccine. Heedless of the fact that the Federal Government of Nigeria has made efforts to ensure that HPV vaccines are available, the vaccine is still out of reach for the poor and is not included among the vaccines offered free under the National Immunization Programme (NIP) (Okunade et al., 2017).

Before 2022, HPV vaccination in Nigeria was not provided in the routine free mass immunization programmes as obtainable in other childhood diseases but was available through "out-of-pocket" purchases for individual use (Ajah et al., 2015). However, in 2023, the Nigeria government to address the issue of cervical cancer in the country made access to HPV vaccination available and free for girls between the ages of 9 – 14 years in all government health centres across the country (Okolie & Nwadike, 2023; WHO, 2023). This is commendable, nevertheless, availability and affordability are one side, and the actual uptake of the vaccine is another as attitudes and beliefs of parents and individuals may be major factors in the uptake. Factors such as parental influence (Nickel et al., 2017), religious and cultural beliefs/practices (Mupandawana & Cross, 2016; VanWormer et al. 2017; Grandah et al., 2018; Ko et al., 2019), inadequate information (Adejuyigbe et al., 2015), and low awareness and knowledge of HPV and cervical cancer (Ayissi et al., 2012; Chan et al., 2012; Wamai et al., 2013) have joined to mitigate the intended impact of the free HPV vaccination.

Anambra State is one of the 36 states of Nigeria, the most populous country in Africa with a high burden of cervical cancer. Evidence has shown that cervical cancer is caused by HPV and HPV infection is common in Nigeria (Agida et al., 2015). A study in Awka which is the capital of Anambra state showed the prevalence of HPV to be 19.4% among 405 women studied (Ezebialu et al., 2020), in Abuja, the Federal Capital Territory, the prevalence was 21.6% among 231 women studies (Akarolo-Anthony et al., 2014). Also, another study in Port Harcourt, South-South Nigeria showed an overall HPV prevalence of 10% of sexually active women above 15 years (Oboro et al., 2023). Consequently, effective tackling of the challenges imposed by HPV at the state levels would be instrumental to reducing the prevalence of cervical cancer in the country.

The issue of public health has always taken a multidisciplinary aspect, which is consequent on various professionals' involvement in sustaining the health of a population. Studies have shown that professional support is one factor that influences conformity to acceptable health practices by people (Ferrer et al., 2016; Wilson et al., 2016; Loke et al., 2017). Currently in health settings in Nigeria, the healthcare social worker works in a multidisciplinary team comprising other professionals as is done in other areas of the world (Okoye, 2019). Social workers are relevant in areas of psychosocial determinants of health, as well as

monitoring and evaluation of programmes that stand to be relevant (Okafor et al., 2017; Onalu et al., 2021; Agha et al. 2022; Kwembeya, & Mbaliezwe, 2022).

In addition, social work professional roles are more pronounced in their involvement in preventive healthcare. Social workers all over the world have always expressed their intervention skills in preventing adverse social breakdowns. These include prevention of substance abuse which can to mental health challenges, suicide prevention, and prevention of developmental health problems through vaccination as in the case of HPV and cervical cancer, and public health campaigns to forestall outbreaks of health crises of public concern (Marshall, et al, 2011; Levine & Sher, 2020). In his submission, McCave (2010) argued that there is an urgent need to put HPV vaccination under the purview of social work professional responsibilities. Social worker's roles in achieving quality health outcomes is evident in their historic principled commitment to enhancing people's well-being and public health promotions to address factors that can lead to social dysfunctioning (Marshall et al. 2011).

In situating the study to address the cited barriers, the Socio-Ecological Model (SEM) was adopted by the authors to further provide a deeper understanding of the subject matter. The model has helped provide an understanding of factors that predispose individuals to risk and protection. The application of the socio-ecological model in this study provided insight into the factors that hinder the uptake of the HPV vaccine among young people in Anambra State, Nigeria. The socio-ecological model has been greatly utilized by researchers in studies to identify barriers to cervical cancer screening and treatment (Daley et al., 2011), public health promotion and violence prevention (CDC, 2021), gender inequity (Michell et al., 2018) as well as HIV treatment, access, uptake and adherence issues (Cornelius, Erekaha et al., 2017). The model guided the understanding in this study that as different factors and systems influence health practices and outcomes including challenges, it also provides pathways for action that would require multi-sectoral approaches that will take into consideration the social and ecological systems that can promote and inhibit the uptake of HPV vaccines in the study area.

Factors militating against the uptake of the HPV vaccine in Nigeria have been discussed in studies, with emphasis on awareness, knowledge, and non-availability of the vaccine (Ihudiebube-Splendor et al., 2019; Brown & Folayan, 2022). In all these studies, the link between factors influencing the utilization of the HPV vaccine, especially the cultural/religious belief system and the need for social work intervention, is lacking. Whereas some authors have attempted to draw attention to the crucial roles social work professionals can play in the promotion of HPV vaccination, little is said about the actual roles (McCave 2010; Marshall et al. 2011; Levine & Sher 2020). This calls for more research inquiries

by social work researchers to interrogate the utilization of the HPV vaccine to maximize its uptake among young womn. To join in this discussion, the following research questions were answered in this study; What is the level of knowledge of the HPV vaccine? What are the risk factors influencing the uptake of the HPV vaccine? What implications would the findings hold for social work practice in Nigeria? It is believed that the findings will provide information to international and local campaigns that are championing the utilization of HPV vaccine in Nigeria.

Materials and Methods

Study setting/design

The study was conducted in Anambra state, which is one of the 36 states in Nigeria. The state was created on 27th August 1991 out of the old Anambra state in the southeast geopolitical zone of Nigeria. Anambra state has a population of 4,418,032 as of the 2006 national census. With a 2.8 percent annual growth rate, the population of the state as of 2022 when the study was conducted stood at 6,055,787. young women between the ages of 9 to 26 constitute about 20 percent of the population (National Population Commission, 2006). The study was carried out among young women within the age group to take the HPV vaccine in selected three communities in Anambra state.

Sampling of participants

Sixty participants comprising young women between the ages of 9 to 26 participated in the study. The researchers purposively selected three communities, one town from each senatorial zone – Awka, Nnewi, and Onitsha, because the researchers wanted to get the views of young women from these senatorial zones. These three towns were selected because they have general hospitals where one can access the HPV vaccine. With the help of youth leaders and parents of the selected participants, in all selected communities, the researchers obtained a list of young women within the age range of 9 to 26. The choice of young women within these age categories was because they are the people the vaccine is recommended for, and this age bracket is when they are most likely to be exposed to the HPV virus. So, they will be in a better position to say if they have taken the vaccines or not. The researchers made efforts to reach those who were disposed of and

willing to participate in the research. On the whole, 60 young women participated in the study.

Data collection

Two Focus Group Discussions (FGD) sessions were held in each selected community. Each session was made up of 10 participants. Participants between the ages of 9-17 years were in one group, while those between the ages of 18 to 26 years were in another group. The researchers adopted FGD for cost-effectiveness and time-saving. All the young women between the ages of 9 to 17 who participated in the study did so after the researchers obtained permission from their parents and/or guardians. The researchers did not assume parents' status, rather permission was obtained for the children to participate in the FGD after explaining the objective of the study to them (Nnama-Okechukwu et al., 2023). Then, young women between the ages of 18 and 26 were recruited based on convenience and willingness to participate. They willingly gave their oral consent to participate after clearly understanding the study's aim.

Focused group discussions were conducted from 15 September to 30 October 2022. As of the time the study was conducted, the HPV vaccines were not free in Nigeria. The discussion lasted between 60 to 90 minutes and was conducted at the convenience of the participants. With the permission of the participants, the discussion was recorded with an electronic recorder while a note-taker took notes. All authors were proficient in the Igbo language since it was used alongside the English language to communicate. As a result of cost-effective considerations, no research assistant was engaged in the study. The researchers collectively developed the instrument.

Data analysis

The data collected for the study were transcribed. The transcribed discussion was compared with the notes taken, to ensure no response was lost. The transcribed data were arranged in themes with the aid of Nvivo12 software. Themes were used to ensure that responses were classified appropriately. Themes were collectively developed by the researchers. This alludes to grounded theory in research (Barbie, 2010). The researchers equally adopted peer debriefing and observer triangulation (Padgett, 2008). Using the observer triangulation, the researchers ran the analysis independently on an already collectively designed analysis template in Nvivo12 software. Later, a collective analysis was completed making sure quotes and

themes were appropriately matched. On peer debriefing, the collated analysis spreadsheet was given to two peers who made revisions. The FGD guide and the concept note of the study assisted the peers after the rigours were followed, the data were categorized into two major themes, which are (a) knowledge of the HPV vaccine, and (b) factors affecting the uptake of HPV vaccine.

Ethical approval

The study instrument and methodology was reviewed and approved (IRB00012424) by the Ethical Review Board of the Nnamdi Azikiwe Teaching Hospital, Nnewi, Nigeria.

Results

Demographic characteristics of participants

The participants were of Igbo tribe. The ages of the participants ranged from 9 to 26 years. All the participants had a formal education. Just 2% of the participants were married. None of the participants had been vaccinated against HPV. About 70.8% of the participants were sexually active (with the opposite sex). Only 23.3% of the participants were either civil servants or apprentices, others were students. For full details of the socio-demographic features of the participants, see Table 1. Note that urban 1 represents Onitsha, while urban 2 represents Nnewi, and urban 3 represents Awka.

Knowledge of HPV vaccine

A small number of the participants understand that the HPV vaccine can prevent one from getting human papillomavirus. The majority of the participant stated that the "HPV vaccine is a vaccine used in preventing cervical cancer". Buttressing farther on this, a participant stated thus;

> *…. just like the hepatitis B vaccine, I know that the HPV vaccine is a vaccine used in preventing one from getting HPV. Once you take the vaccine during your early years before being sexually active, maybe when one is between the ages of 9 and 14, one cannot contact HPV again. (***17-year-old, Urban 1***).*

Table 1
Summary of socio-demographic description of sampled young women

Sociodemographic features	Frequency	Percentage
Educational level		
No formal education	0	0
Primary school level	3	.5
Secondary school level	23	38.3
Post-secondary school level	34	56.7
Total	**60**	**100**
Age		
9-14	11	18.3
15-20	22	36.7
21-26	27	45.0
Total	**60**	**100**
Occupation		
Civil servant	8	13.3
Artisan/apprentice	6	10.0
Student	46	76.7
Religion		
Islam	0	0
Christianity	60	100
Total	**60**	**100**

Source; Fieldwork, 2022

From the narratives, we discovered that most often, people call the HPV vaccine the "cervical cancer vaccine". This "nickname" is based on the belief that the vaccine is exclusively for women and only for the prevention of cervical cancer. Buttressing further on this, a participant stated thus;

> *When I first read the information about the vaccine, I was very impressed because I see it as a great way to protect young females from HPV infection before they become sexually active. Since the vaccine is for the prevention of cervical cancer, I believe that the vaccine is meant for young women alone since they are the ones that suffer from cervical cancer.* (**21-year-old, urban 2**).

Aside few participants who have heard about the vaccine, the majority of the participants used for the study have not heard of HPV talk more about the vaccine. A participant said that;

*I don't know anything about the vaccination. To be honest, this is my first time of hearing about HPV and the vaccine used to protect one from getting the virus. So you don't expect me to utilize what I know nothing about. If it is s necessary that every adolescent should be vaccinated against this virus, government, and non- governmental organizations have to create more awareness (***26-year-old, urban 3***).*

A 24-year-old from Urban 2 further commented, 'If not for my friend who is a nurse in a general hospital, I wouldn't have known about HPV and the vaccine".

Buttressing further on this, two participants stated thus;

*It was just the last two months when I visited the hospital with my mother to see a family friend who is suffering from cervical cancer that I got to know about HPV and the need for one to get vaccinated against the virus. Unlike the HIV/AIDS vaccine (ARV) which you will always hear or see the advert everywhere even in churches, the majority of the young females, even our parents did not know anything about HPV talk more about the vaccine (***22-year-old, urban 2***).*

*This is my second time hearing about the vaccine and everything is still sounding strange to me. If the vaccine is used to prevent HPV which can lead to a deadly disease like cervical cancer, why can't the government and other non-governmental organizations make time to create awareness as they do of HIV drugs (***20-year-old, urban 3***)?*

Some of the young females; thought that the vaccine offered necessary protection to the adolescents. Some participants thought that the vaccine was necessary but felt powerless to consent to vaccination because they felt they could not override their parents' wishes. A 25-year-old participant from urban 2 stated thus;

I think the vaccine will help me not to get cervical cancer and live long. Left for me alone, I would consent, but my parents won't consent to that and there is nothing I can do about it because am still under their control.

Factors affecting the uptake of HPV vaccine

Financial influence on HPV vaccination

From the narrative, the costs of the vaccine were identified as an important barrier to the provision of and access to the HPV vaccine. Some of the participants

mentioned financial barriers as a factor that prevented them from utilizing the HPV vaccine. During the FGD session, one of the participants stated thus;

*When I was 12, our family doctor recommended the vaccine for me, but when my parents heard how much it will cost them for me to be vaccinated, my parents declined to the suggestion (***21-year-old**, *urban 3).*

Corroborated the above assertion two participants stated thus;

When I heard about HPV and its vaccine, I first went to a healthcare centre and I was told that they don't administer the vaccine however a staff referred me to a private hospital to get vaccinated but when they told me that it would cost me 9,000 nairas to be tested and 30,000 to be vaccinated against HPV, I became frustrated because I didn't have such amount of money to pay for it (**18-year-old, urban 3**).

… my family cannot even afford to pay for the vaccination for me and my siblings even if I tell them about it. So, if at all that the Nigerian government has our interest at heart, they should reduce the cost of the vaccine because the cost of HPV vaccination per person is beyond what the average Nigerian can afford (**24-year-old, urban 1**).

Narratives from the data that were generated when the vaccine was made free revealed that the Nigerian government has started giving out this vaccine to young women between the ages of 9 to 14. Buttressing further on this, a participant stated thus;

….. yes, the vaccine is now free for young women between the ages of 9 to 14. In short, some health workers sometime last two weeks, came to our school, and every girl within the age range, and also willing to take the vaccine, was vaccinated and no money was charged nor collected. **(13-year-old, urban 2).**

Cultural and religious influence on HPV vaccination

We discovered that there is a connection between culture and utilization of the HPV vaccine. We equally discovered that culture has always been a great influence on people's way of life. HPV vaccination from the researchers' findings appears to be influenced by the culture of the people as transferred through socialization. Culture has a conservative attitude towards pre-marital sex. Most often, parents especially mothers believe that if you vaccinate young females against HPV, you are giving them the license to start having sex as they want. Buttressing further on this, a participant stated thus;

I remember when I first heard about HPV and the vaccine during my 100 level in the university, coming back home, I told my parents about it and asked them whether I was

vaccinated against HPV when I was between the ages of 9 and 14. My mother in particular looked at me with dismay. She told me that they didn't vaccinate me against HPV because they don't want to expose me to early initiation into sexual activities (**19-year-old, urban 3**).

Buttressing further on the influence of culture on HPV vaccination, a 15-year-old participant from urban 3 narrated; "When I told my parents that I wanted to get vaccinated and that I needed money for it, they became so furious, both of them asked me whether I was planning to start having sex".

Furthermore, from the narratives, we discovered that there is a relationship between religious beliefs and the uptake of the HPV vaccine. In this part of the world, religious values may make it difficult for parents to accept any interventions that seem to be linked to sexual behaviour. A participant said that;

From my faith background, we don't have sex before marriage, marriage for example,so your first experience of sex is when you are married and you stay in a relationship…because of his reason, I probably say no, I wouldn't bother receiving the vaccine (**21 year-old, urban 1**).

Narratives from the data revealed that even though the government has made the vaccine free for young women between the ages of 9 to 14, some parents still did not allow their girl child to take the vaccine because they believe that the vaccine has side effects. Buttressing further on this, one of the participants stated thus;

The government brought the vaccine to my school and stated that is free for every youngwoman between the ages of 9 to 14, but my mum warned me seriously not to take thevaccine because if I take it, I may not conceive again. So, I did not take the vaccine andI have no intention of doing so because I want to give birth to my children when thetimereach **(14-year-old, urban 1).**

Discussion

The study investigates the utilization of HPV vaccines in the Anambra state of Nigeria. In this study, findings reveal that the participants have good knowledge of HPV vaccines. They were aware that HPV vaccines provide preventive measures for one contracting human papillomavirus which can lead to cervical cancer for women. However, the uptake of HPV vaccines in the study area was poor. Participants gave the reason for poor utilization to be low-level awareness.

Low level of awareness of HPV and the vaccine has been identified as one of the factors affecting the uptake of HPV vaccine. The findings of this study corroborated with that of Ezeanochie and Olasimbo (2020) which revealed that

low level of knowledge on HPV, and HPV vaccines in the study area represented an important impediment to high vaccine uptake. Xie et al. (2023) have stated that the main reason why parents do not vaccinate their daughters against the HPV vaccine was a lack of knowledge about HPV vaccination. On the contrary, increasing awareness of HPV and HPV vaccines may increase parental and acceptance of adolescent vaccination for their daughters. Since promoting parenting awareness and knowledge of HPV vaccines is a factor in motivating parents to support the vaccination of young women against HPV. There is the need to integrate Nigeria social workers in the fight against HPV. Social workers in corroboration with other healthcare workers can raise the awareness and knowledge of HPV vaccines among parents through educational intervention, which is the first step to increase HPV vaccination among young women. Some studies have tried to establish how poor awareness and knowledge have been a hindrance to the accessibility of the HPV vaccine (Odetola & Ekpo, 2012; Ezenwa et al., 2013; Perlman et al., 2014; Agida et al., 2015; Ajah, et al., 2015).

Further, other factors resulting in poor utilization of HPV vaccines were found and they include the cost of the vaccine, parental influence, culture, and religious belief. Our study revealed that the uptake of the HPV vaccine is significantly related to cost and affordability. The findings of this study corroborated with that of Choi et al (2013) which revealed that the cost is the major barrier to the uptake of the vaccine. Wani and Murokora (2013) in their study revealed that parents and adolescent girls were concerned about the high cost of the vaccine and that low-income families may not be able to afford the HPV vaccination if they had to pay for the entire cost themselves. Furthermore, Loke et al. (2017) in their study revealed that the HPV vaccination in Hong Kong is still on out-of-pocket expenses and this has been responsible for the low uptake of the vaccine over the years. Though it was discovered recently that the Nigeria government has made the vaccine free for young women between the ages of 9 to 14, removing the barrier of cost for all is likely to be an effective strategy for raising vaccination rates, and may prevent millions of premature deaths or unnecessary disability (Loke et al., 2017). The social worker should advocate for the government to consider including the HPV vaccine in their childhood routine immunization schedule voluntarily or providing a financial subsidy for the age groups that were not captured in the free vaccination to increase the affordability of the vaccine. Studies abound on the cost of the HPV vaccine and impede access and utilization of the vaccines (Agosti & Goldie, 2007; Graham & Mishra, 2011; Ajah et al., 2015; Ladner et al., 2016).

Also, parental influence consequently reflects on the uptake of the HPV vaccine (Gamble et al., 2010; Nickel et al., 2017). Apparently, in this study, we discovered based on what our participants stated that some parents are not in-

terested in seeing their daughters being vaccinated against HPV. The findings of this study are in corroboration with that of Nicolet et al. (2022) which revealed that parental opposition is one of the reasons for young women refusing HPV vaccine. Some parents may raise concerns that the HPV vaccine might encourage earlier sexual debut, multiple sexual partners, or complacency about safe sexual health practices (Ferrer et al., 2014). This notwithstanding, parents have important roles to play in young women getting the HPV vaccine. To this end, social workers need to educate parents on why they should allow their daughters to be vaccinated. Since the HPV vaccines primarily target young women (9 to 26 years) who are still likely to be in school, social workers should advocate and support the school entry mandate introduced by the government to ensure that all young women between the ages of 9 to 14 are vaccinated against HPV. They should also, ensure that parents should be involved in providing consent for their children to be vaccinated during the school entry mandate. The influence of parents on the utilization of HPV vaccines can be found in some studies (VanWormer et al., 2017; Barnes et al., 2018).

Moreover, the roles played by cultural and religious beliefs in influencing the uptake of the HPV vaccine are reported in some studies (Pierre-Joseph et al., 2012; Grandah et al., 2018; Ko et al., 2019). Findings from our study revealed that participants fell short of utilizing the vaccine because both their cultural and religious belief systems frown on premarital sex. There are cultural and religious beliefs that allowing young women to take the vaccine is exposing them to premarital sex and multiple sexual partners. Our findings are consistent with the findings of Wong et al. (2020) in their study in Asia which revealed that cultural, traditional, and religious elements strongly influence health-seeking behaviors and, particularly, vaccination. According to Wong (2012), in a country like Malaysia, a Muslim-majority country, sensitivities regarding sex-related issues create various types of barriers to sexual and reproductive health information, support, and practices. Parents with strong cultural and religious views are less likely to accept HPV vaccination for their daughters (Wong et al., 2020). This is therefore a wake-up call for social workers. Nigeria social workers should be charged by the government to challenge any cultural or belief system that contravenes the medical explanation of HPV and the uptake of the vaccine.

Social workers should be actively involved in community sensitization through enlightenment programmes and educational campaigns thereby promoting understanding about HPV and the vaccine. Once the community members are equipped with reliable health information, community stakeholders, parents, and even the youth will foster the community transparency believed to be protective of health. It is also important for social workers to involve religious leaders to address vaccine concerns among parents with strong religious

beliefs. This is akin to the SEM where intervention could help in improving the knowledge and access to the vaccine. For example, at the individual level, social workers could intervene by focusing on improving knowledge and correcting misconceptions about the vaccine. At the interpersonal level, intervention could involve engaging religious leaders, parents, family, and peers to provide support and encouragement. Then at the organisational level, intervention could involve improving access to the vaccine in schools and healthcare facilities. We recognize the reality that social work as a profession is not fully operational in Nigeria when compared to other parts of the world especially Europe, America, and some parts of Africa, though, a law establishing the profession has been made. This may account to the relegation of social work profession in mainstream health services in Nigeria as captured by Agwu (2023) and Agwu and Okoye (2021) who expressed concern over how social workers in Nigeria were relegated to the background during the Covid-19 pandemic and described Nigerian social workers' involvement in healthcare intervention as suboptimal. Therefore, social workers' role in promoting HPV vaccine uptake are not fully streamlined in healthcare interventions in Nigeria, however, this study makes attempt at exploring the potential roles which is capable of providing a leading direction as the social work profession in Nigeria aims to fully take its rightful place as obtainable in other climes.

Finally, the study was not void of limitations. The limited sample restricted to just a state is one. Therefore, the researchers encourage similar studies in other parts of Nigeria. The fact that health workers and parents of these young women were not captured in this study account for just a one-sided perspective. Thus, subsequent studies should do well to include health workers and parents of these young women into the sampling frame. Regardless of these limitations, findings from this study remain relevant to ministries of health in Nigeria, policymakers, and providers in Nigeria, the cancer society of Nigeria, social workers, and public health professionals, who are concertedly making efforts to curb cervical cancer and cervical cancer-related death in Nigeria, as well as improve the uptake of HPV vaccine among young women.

In conclusion, the study was able to provide an overview of the factors affecting the utilization of the HPV vaccine among young women. Our findings have shown that a considerable number of the participants understand that the HPV vaccine can prevent one from getting human papillomavirus but failed to utilize the vaccine due to ignorance, cost, and some religious/cultural factors. We also found that though the Nigerian government has made the HPV vaccine free for young women between the ages of 9 to 14 years, most parents discourage their children from taking the vaccine as a result of the concern about side effects. The gap created by the concern about side effects suggests the need for social work-

ers to be involved in awareness creation. Social workers should introduce some kind of health education/sensitization/counseling to the young women and their parents which will focus on improving their health-seeking behaviour. This is because the availability of the vaccine without a corresponding improved awareness of the importance of the vaccine will amount to poor uptake still. Social workers should also help promote community-based awareness about the HPV vaccine among all members of the community, informing parents that the vaccine is now free for young women between the ages of 9 to 14 years. Further research should be conducted to examine the roles of parents in ensuring that their daughters are vaccinated against HPV.

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