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HUMAN PAPILLOMAVIRUS VACCINATION AND ITS ASSOCIATED FACTORS AMONG FEMALE ADOLESCENTS (AGED 9-14 YEARS) ATTENDING KAJJANSI HEALTH CENTER IV IN WAKISO DISTRICT: A CROSS-SECTIONAL STUDY.

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ABSTRACT

The background of the study

Uganda is overflowing with many women of reproductive age at risk of developing cervical cancer. Getting immunized with the HPV vaccine could be the only hope to avert this risk. WHO greatly recommends HPV vaccination to combat the spread of the HPV vaccine. However, despite availing the HPV vaccine in health facilities, its uptake remains stunted.

The objective of the study

The objective of the study was to determine the factors associated with the uptake of Human Papillomavirus vaccination among female adolescents attending Kajjansi Health Center IV in Wakiso district.

Study methods

The study was of a cross-sectional descriptive design that utilized quantitative methods of data collection. This enabled the researcher to collect data from a large number of respondents (100 respondents) within a short period.

Results

A total of 100 questionnaires were collected. The **s**core rates of knowledge were 63%, and those of attitude towards its effectiveness were 46% and uptake rates were 54%. The main factors influencing knowledge were age, attitude towards its effectiveness, and the source of information. Altitude was affected by socioeconomic status, and the uptake was mainly affected by the side effects experienced.

Conclusions

It was evident that most participants had information about HPV vaccination, although it was insufficient for them to complete the series. The side effects of the vaccine, inadequate health worker recommendation, inadequate knowledge about the safety of the vaccine, and absence of school-based vaccination programs were observed to influence its uptake.

Recommendations

Mass sensitization of the public should go on to enhance a complete understanding of the need to start and complete the series of HPV vaccinations. Any program aimed at creating mass awareness about HPV vaccination at any level should be boosted by the people in charge.

Keywords: *Human Papillomavirus Vaccination, Female Adolescents, Kajjansi Health Center IV Wakiso District.*
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Background of the study.

Uganda is grappling with a population of over 12.3 million women of reproductive age at risk of developing cervical cancer (Nang, et al., 2023). Getting immunized with the HPV vaccine could be the only hope to avert the risk of being infected because, despite the practice of using condoms, and early screening with a Pap smear test, cervical cancer remains the most frequent cancer and the number one cause of cancer-related death among women in Uganda (Kamulegeya, et al., 2020).

WHO greatly recommends HPV vaccination to combat the spread of HPV vaccine but despite availing the vaccine in health facilities, its uptake remains stunted with a vaccination uptake rate of only 19.6% among the school going girls aged 9 to 14 years in Northern Uganda (Mirembe, et al., 2023). Yet still, in 2016, only 18% of girls eligible for the vaccination program had received at least one dose of the HPV in Uganda (Uganda Bureau of Statistics et al., 2018). This is in contrast with the target HPV vaccine coverage of 90% worldwide (WHO, 2022). This reality gap necessitates further studies to assess the different factors

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contributing to the persistently low rates of HPV vaccination uptake, thus the basis for this research. This study aims to determine the factors influencing the uptake of Human Papillomavirus vaccination among female adolescents attending Kajjansi Health Center IV in Wakiso district.

METHODOLOGY

Study design

This study utilized a cross-sectional distributive study design to determine the factors influencing the uptake of Human Papillomavirus vaccination among female adolescents aged 9-14 years attending Kajjansi Health Center IV in Wakiso district. It utilized a quantitative approach to data collection using self-administered questionnaires to get responses. This study design helped to generate adequate valid information about the variables in the field of study and provide a clear picture of factors influencing the uptake of Human Papillomavirus vaccination among female adolescents attending Kajjansi Health Center IV in Wakiso district which will provide a basis for promoting HPV vaccination.

Study area

Kajjansi Health Center IV is located in Kajjansi Sub-county, 1.6 km from Kajjansi town in Wakiso district, Central Uganda situated at approximately 25km North of Entebbe International Airport and 16 km South of Kampala City.

Study population

This study targeted adolescent female patients waiting for medication at the OPD department. For the illiterates, the questionnaire was explained to them in the local language by the translators, and the questionnaire was filled out for them. The study excluded all adolescent patients who were not willing to participate and all those who were not present at OPD at the time of data collection.

Sample size determination

The Burton formula formula was used, that is:

QR÷O

Where; • Q: is the total number of days taken to collect data

• R: is the maximum number of respondents to be interviewed

• O: is the Maximum amount of time on each respondent

Q = 10, R = 10, O = 1 hour

Therefore N=

N = 100 respondents

Sampling technique

This study employed a simple random sampling technique to get the respondents. This sampling technique was chosen to generalize the population because of its simplicity and lack of bias.

Sampling procedure

The respondents were obtained from OPD. The researcher often visited the OPD and the respondents were randomly chosen and interviewed each time until the required sample size was obtained.

Data collection method

Data was collected using self-administered questionnaires. The questionnaires consisted of both close-ended and open-ended questions. The researcher explained the purpose of the study to obtain informed consent from the respondents. For the adolescents who could not read and write English, the research assistants were available to translate and fill out the questionnaires for them.

Data collection tools

Self-administered questionnaires are the data collection tools that were used for this study. The questionnaires consisted of both open and close-ended questions. This tool was chosen because it is convenient for collecting information from a large population within a short period since it enables the respondents to answer in their own free time.

Data collection procedure

After writing the proposal with the supervisor's guidance, the researcher obtained an introductory letter from the school that is Mildmay Institute of Health Sciences. She carried the letter to the Medical Director of Kajjansi Health Center IV where she was authorized to carry out the study.
The researcher identified the participants by employing simple random sampling methods and interviewed them with individual consent. The completeness of the questionnaires was assessed and codes were assigned to the study tools. The researcher collected data for 10 days, interviewing 10 adolescents every day with the help of 2 research assistants.

Study Variables

Independent variable

The independent variables of this research study are the factors influencing the uptake of Human Papillomavirus vaccination among female adolescents aged 9-14 years attending Kajjansi Health Center IV in Wakiso district.

Dependent variable

The dependent variable of this research study is the uptake of Human Papillomavirus vaccination among female adolescents aged 9 -14 years attending Kajjansi Health Center IV in Wakiso district.

Quality Control

The researcher pre-tested the questionnaire from Kisubi Hospital on female adolescents attending OPD services.

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Questionnaires were given to 15 people who were randomly selected and asked to answer the questions on the questionnaire according to their experience.
The respondents were informed of the pre-test and together with their parents kindly requested to critique, comment, and recommend to help the researcher assess its reliability and make any necessary adjustments before applying it in the study.
Two research assistants were trained on the objectives of the study, how to use the questionnaire and edit the information without changing the meaning to reduce the manipulation of results.
This study was conducted in 10 days. The OPD was visited from morning to evening to make sure that the sample size was reached to enable generalization, and during the study, the questionnaire was clearly explained to ensure that valid information was collected.
The study excluded those who were not willing to participate, and those who were very ill or not mentally sound.

Data Analysis and Presentation

Data was collected and processed manually through coding; editing and tallying The researcher then used tables, graphs, and pie charts to present the findings.

Ethical considerations

Health Center approval: An introductory letter was obtained from Mildmay Institute of Health Sciences to carry out the study at Kajjansi Health Center IV and permission was sought and obtained from the facility in charge.
Information provision: The purpose and objectives of the study were clearly explained to the clients before they decided to participate in the study.
Consent: Data was collected only when the participants had understood the objectives of the study clearly and signed a consent form to take part in the study.
Confidentiality: Participants' confidentiality was assured and only signatures were obtained, leaving out all unique identifiers such as names, telephone numbers, ID numbers, and addresses among others. The completed questionnaires can only be accessed by the researcher.
Autonomy: The respondents were allowed to withdraw from the study at any point.
Compensation: The researcher did not pay any of the respondents for taking part in the research due to the researcher's low financial status.
Finally, the Mildmay Institute of Health Sciences Research and Ethics Committee analyzed the proposed study to determine its abidance with the research ethics and measures to confirm the protection of respondents.

RESULTS

Demographic Characteristics

Table 1 Distribution by demographic characteristics of the respondents (n=100)

Character	Frequency	Percentage
Age		
Below 10	20	20%
Above 10	80	80%
Educational level		
Not schooling	11	11%
Primary level	87	87%
Secondary level	02	2%
Parents' occupation		
Self-employed	57	57%
Employed	26	26%
Unemployed	17	17%
Religion		
Catholics	12	12%
Protestants	53	53%
Born again Christian	31	31%
Others	4	4%

Table one depicts that most of the respondents 80 (80%) adolescents were above 10 years and the least 20 (20%) were below 10 years of age. The study involved the the majority of primary school-going adolescents 87 (87%), followed by those not schooling 11(11%) and the least being those in secondary school 2 (2%) as per Table 1.

According to Table 1 above, the majority 57 (57%) of the respondents were self-employed with most of them operating small kiosks, shops, and mobile money outlets and others were commercial farmers. Of the respondents, 28 (28%) were employed and only 17 (17%) were unemployed With distinction by religion, 43 (43%) were protestants (Anglicans), 12 (12%) were Catholics 31 (31%) were Born

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Again Christians, whereas only 14 (14%) were of other denominations, which included the SDA, Moslems and Jehovah witnesses.

Individual factors

Number of those that know about HPV vaccination

Figure 1distribution of participates

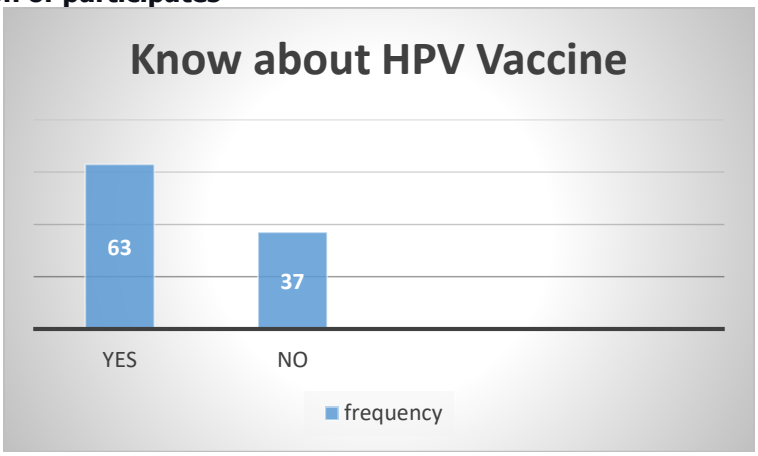

Figure 1 reflects that the majority, 63 (63%) of the respondents knew about the Human Papillomavirus vaccination program leaving 37 (37%) of the respondents clueless about HPV vaccination.

Figure 1 Distribution of the source of information about HPV vaccination

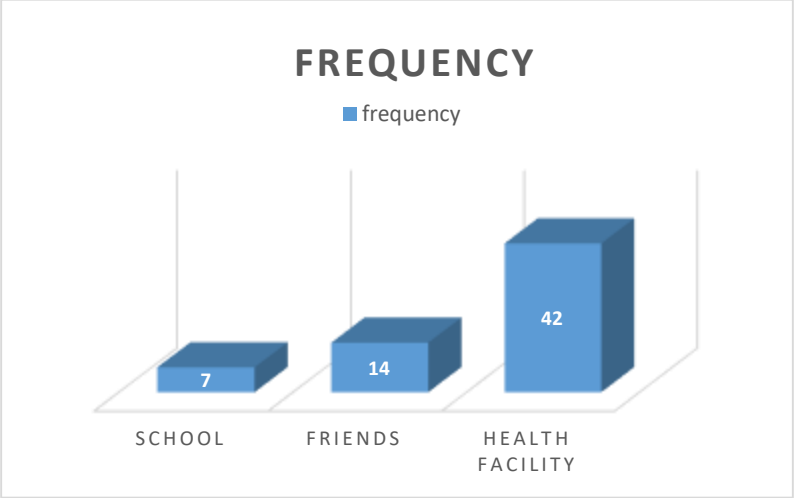

Figure 2 reflects that out of the 63 that knew about the vaccine, the majority 42 (67%) got the information from the health facility, 14 (22%) got the information from friends, whereas some 7 (11%) got the information from the school.

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Figure 2 Distribution according to the attitude toward the effectiveness of the HPV vaccine

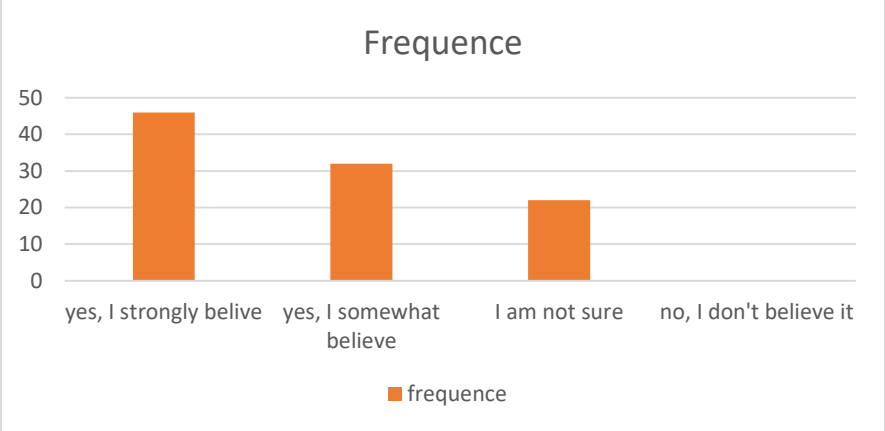

Figure 3 shows that the majority of the respondents 46 (46%) strongly believed that the vaccine is effective and most of these had reported the health facility as the source of information about the vaccine, 32 (32%) respondents somewhat believed that the vaccine is effective, whereas 22 (22%) respondents were not sure of the vaccine's effectiveness and no one reported that they didn't believe the vaccine's effectiveness.

Figure 3: Distribution of the respondents that have received the vaccine

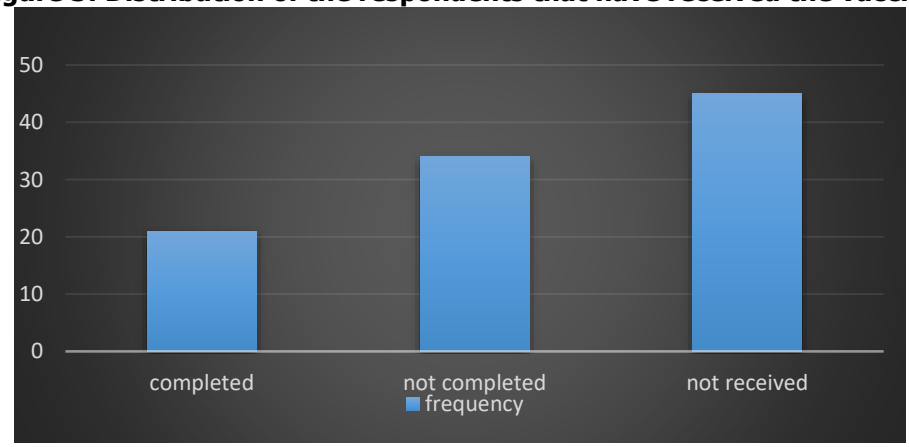

Figure 4 shows that 54 (54%) respondents were initiated to the vaccination program but only 21 of the respondents had completed the series, whereas 45 (45%) of the respondents had not received the vaccine.

Table 1 distribution according to the side effects of the vaccine (n=65, who received the vaccine)

Side effect reported	fever	headache	Dizziness	Nausea
No of those who experienced it	58	25	10	64
Percentage	89%	38%	15%	98%

Table 2, shows that almost all respondents that had received the vaccine experienced side effects. The most common side effects included fever, headache, dizziness, and nausea and these side effects usually came after about 2 hours of getting the vaccine lasting for about two days.

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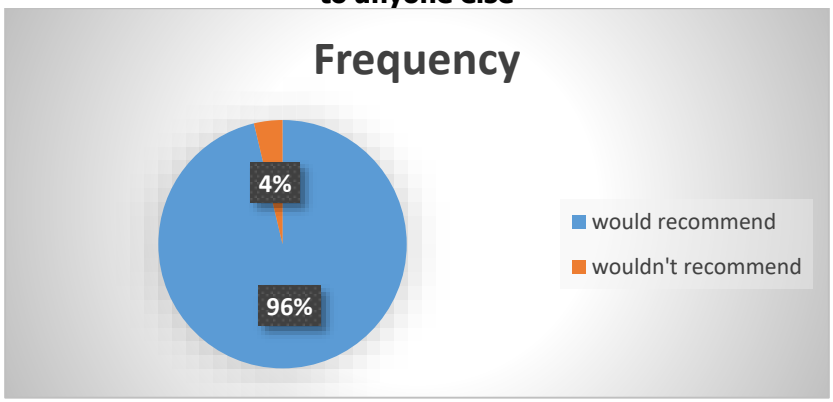
Figure 4 Distribution based on the respondent's willingness to recommend the HPV vaccine to anyone else



The respondents who have received the vaccine were asked if they would recommend anyone to be vaccinated based on their experience.

Out of 54 respondents that had received the vaccine, the majority 52 (96%) respondents said that they would recommend the vaccine. They argued that despite the side effects, the vaccine is of great protective help, and only 2 (4%) respondents wouldn't recommend the vaccine to anyone saying that the side effects are unbearable.

Heath worker and facility-related factors

Figure 5distribution of the respondent's accessibility to health facility

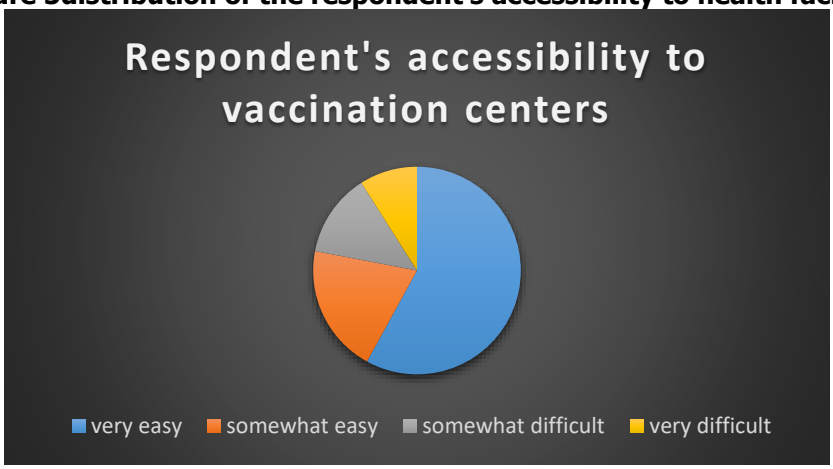


Figure 6 shows that most respondents 58 (58%) could easily access the vaccination centers, 20 (20%) respondents could access the vaccination center somewhat easily, 13 (13%) respondents could access the vaccination center with some difficulty whereas 9 (9%) find it very difficult to access the vaccination center.

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Figure 6 Distribution of respondents that got a recommendation for HPV vaccination from a health worker

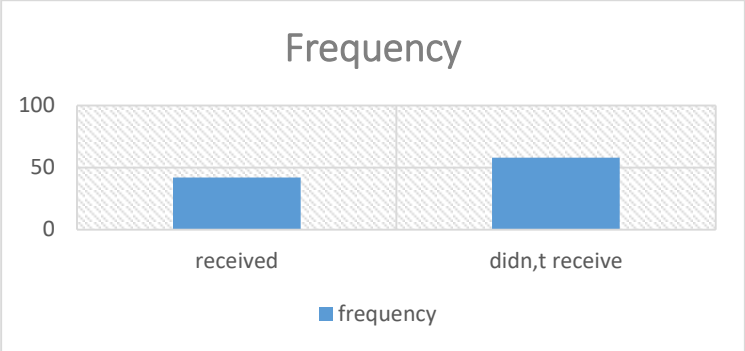

Figure 7 shows that only 42 (42%) of the respondents received a recommendation from the health workers while 58 (58%) did not receive any recommendation from the health workers

Social economic factors

Figure 7 Distribution according to the likelihood of getting the vaccine if it was offered at school

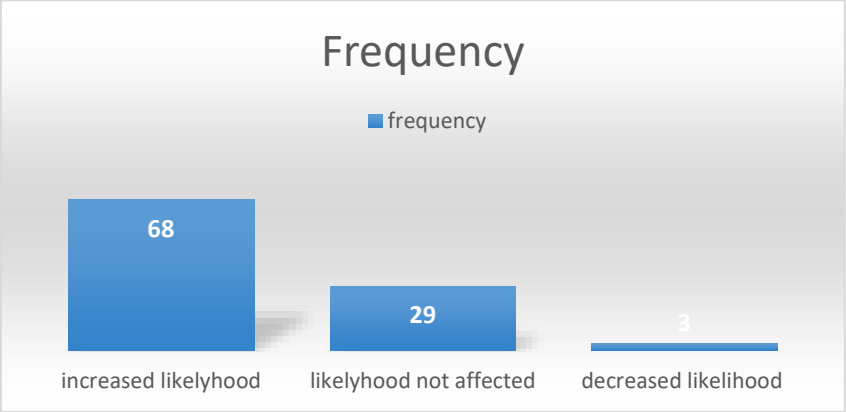

Figure 8 shows that the majority, 68 (68%) respondents were more likely to be vaccinated if the vaccination services were introduced at school.

Discussions

Individual factors

The majority of the respondents 67 (67%) knew about the Human Papillomavirus vaccination program whereas the least 37 (37%) did not know about it according to the results in Table 1. These results correlate with a study by Kidogo Gerald, 2021 in the Missenyi district Tanzania where 92% of the eligible female adolescents were informed about the HPV vaccine. These results however contradicted the results of a study done by Nabirye et al, 2020 in which 52.3% of the study participants had no information about the HPV vaccine. This could be attributed to increased health worker recommendation of HPV vaccination which was reported as the most source of information.

All the participants were not affected by the cost of the vaccine because vaccines were freely offered at the health facility. This correlates with the results of a study in Hong Kong by Albert Lee et al, 2014 which shows that the cost of the vaccine was not a remarkable factor for HPV vaccination. However, this study's findings contradicted the results of a study in Lagos, Nigeria by Adeyemi et al, 2021 where the cost of the vaccine was one of the identified major barriers to HPV vaccination.

The uptake of the HPV vaccine was more than half of the total participants that is 54 (54%) respondents were initiated to the vaccination program. However, only 21 of the respondents had completed the series and 45 (45%) of the respondents had not received the vaccine. This contradicted the results of the study done in Mbale district, Uganda where only 14% of the study population had received the vaccine.

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This could also be attributed to relatively increased awareness.

All respondents who had received the vaccine experienced side effects most of which included nausea, headache, fever, and dizziness. These side effects affected some respondents' decisions about getting the second dose of the vaccine. This is in agreement with the results of a study conducted by Mark et al, 2023 in which he reported that while these side effects were generally mild and temporary, they could influence an individual's decision to receive the vaccine.

Health worker and facility-related factors influencing the uptake of human papillomavirus vaccination

Most respondents 58 (58%) could easily access the vaccination centers and 20 (20%) accessed the vaccination center somewhat easily. Of the respondents, 13 (13%) access the vaccination center with some difficulty whereas 9 (9%) find it very difficult to access the vaccination center. This has less impact on Human Papillomavirus vaccination uptake.

Only 42 (42%) of the respondents received a recommendation from the health workers and most of those were initiated to the vaccination program which indicates that health worker recommendation is an important factor. This is in agreement with Heather who reported that physician recommendation is one of the factors that appeared to influence HPV vaccination outcome. These findings could be associated with an increased desire among health workers to reduce the burden of cervical cancer.

Social economic factors influencing the uptake of Human Papillomavirus vaccination

A few respondents 7 (11%) got the information from school and 68 (68%) respondents reported that there was a higher likelihood to be vaccinated if the vaccination services were introduced at school. This proves right the recommendation for HPV vaccination information services in school. It is in agreement with Katy et al 2023, who also report that school-based delivery achieved over 80% uptake of complete courses of HPV vaccine in Scotland.

Study Limitations

The researcher faced a self-reporting bias on the HPV vaccination status due to social desirability. The researcher's plans were affected by the unfavorable climate, especially the heavy rain. The researcher was also subjected to some negative attitudes and non-compliance as some participants demanded money to participate in the study.

Conclusion

From the findings, it is evident that different individual factors affected the uptake of the HPV vaccination program. Despite the increasing knowledge about the HPV vaccination program, however, many are not yet initiated into this program and among those that are initiated, very few have completed the series of HPV vaccination. The side effects of the vaccine and inadequate knowledge about the safety of the vaccine were observed to influence the uptake of the HPV vaccine.

About the health worker-related factors, most respondents could easily access the vaccination center and the quality of care given by health workers at the facility has proved to play a role in influencing HPV vaccination. However, less than half of the respondents got recommendations and this has impacted the vaccination uptake.

About socioeconomic factors, despite the cost of the vaccine not being a factor to consider, the absence of a school-based vaccination program is seemingly accountable for the low uptake of the HPV vaccine.

Recommendations

Regarding the above derived conclusions, the following recommendations are key to ensuring the uptake of the HPV vaccine among the adolescents in Kajjansi and the community at large has a designated role to play.

To the Ministry of Health: The ministry should integrate a comprehensive education system for all adolescents and their guardians about HPV vaccination since many do not have enough information about it. They had just jumbled information from friends that was not enough to let them take up the vaccine. This will help sort out all the misconceptions or unclear information about the HPV vaccine.

The ministry should conduct further research regarding the side effects of this vaccine since many report exaggerated side effects that have hindered them from getting the second dose.

The ministry should also provide the vaccine at all times and even in the lower facilities to make them easily accessible to those of low socio-economic status who end up ignoring the vaccine arguing that the hospitals are far away.

The government should put up incentives like transport facilitation and allowances for community health workers to ensure their regular checkups on adolescents and their guardians. This shall aid health workers in enriching the community with knowledge about the initiation and completion of the HPV vaccine.

The government should further promote school-based vaccination programs in both secondary and primary schools to enhance the easy accessibility of vaccination services.

To the Local Council Government: The Local government should organize community-based health education talks regarding HPV vaccination for all adolescents and their guardians, clearly elaborating on its importance to ensure adequate knowledge about this vaccine.

Community health workers should be empowered with valid and updated information, and necessary tools together with facilitation to extend the health center services to the adolescents and their guardians at their homes. This would aid early initiation and completion of the vaccine series.

To the Kajjansi Community: The people of the Kajjansi community should request health education talks regarding the HPV vaccine, in case the health workers have not offered them.

They should also present their beliefs towards HPV vaccination to the health workers and stand to be corrected.

The adolescents and guardians of adolescents in Kajjansi should be encouraged to attend health education talks regarding HPV vaccination and get correct information about HPV vaccination.

Acknowledgements

It is often said as a complaint, tha t roses have thorns. I would rather gratefully say, that thorns have roses. This report is a testimony that perseverance and commitment never disappoint. I immeasurably thank God for the favor He bestows on my life, daily. I am indebted to my supervisor whose guidance has enabled me to run toward the finish line. I am also grateful to my research assistants, the facility in charge of Kajjansi Health Centre IV, and my fellow students who have supported me in various ways, towards the completion of this research. I am humbled by your contribution. May the Lord grant you all your heart's desires!

Abbreviation and Acronyms

HPV: Human Papilloma Virus
WHO: World Health Organization
OPD: Outpatient Department
UAHEB: Uganda Allied Health Examination Board
MIHS: Mildmay Institute of Health Sciences
SPSS: Statistical Package for the Social Science
UBOS: Uganda Bureau of Statistics
CDC: Centers for Disease Control and Prevention

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Conflict of interest

The author had no conflict of interest.

Author Biography

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