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Willingness of Vaccination Against Human Papillomavirus and Associated Factors Among Adolescent Female Students in Primary School of Bahir Dar City, North West, Ethiopia

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WILLINGNESS OF VACCINATION AGAINST HUMAN PAPILLOMAVIRUS AND ASSOCIATED FACTORS AMONG ADOLESCENT FEMALE STUDENTS IN PRIMARY SCHOOL OF BAHIR DAR CITY, NORTH WEST, ETHIOPIA:

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Abstract

Background: Cervical cancer is one of the most diagnosed and deadly cancers in women globally. Though vaccination is an effective way to reduce cervical cancer. In recent years vaccination acceptance by adolescents remains a challenge in low and middle-income countries (LMIC), including Ethiopia, however, evidence is rare on the willingness of human papilloma vaccination and associated factors among adolescent girls. Thus, this study aimed to compare levels of willingness and associated factors among adolescent female students in primary schools.

Methods: facility -based comparative cross-sectional study was applied among adolescents aged 10-19 yrs in Bahir Dar primary school, North West, Ethiopia, from September 1 to October 30, 2021. A total of 844 adolescent girls were selected by the multistage sampling technique. A pretested and structured self-administered questionnaire was used to collect data. A binary logistic regression model was fitted to identify factors associated with the willingness of human papillomavirus vaccination. Chi-square-test($X^{2)}$, Crude, adjusted odd ratio with 95% confidence interval (CI) were calculated to assess the strength of association and significance of factors associated with willingness of vaccination.

Results: The overall proportion of willingness of human papillomavirus vaccination among adolescent girls aged 10-19 yrs was 50.6% (95%CI: 47.4-54), whereas in government and private-owned primary school it was 61% (95%CI:56.3-65.4%) and 40.2% (95%CI: 35.6-44.9), respectively. Maternal education (AOR=2.0,95%CI:1.29-3.05), cue to action (AOR = 1.92, 95% CI: 1.20–3.05), self-efficacy (AOR=2.34, 95% CI: 1.58– 3.48) and perceived barriers (AOR =0.49, 95% CI: 0.34–0.70) were significantly associated with willingness of human papilloma vaccination.

Conclusion: The proportion of willingness of human papillomavirus vaccination was higher among adolescent girls in government than the private-owned primary schools. Maternal education, perceived barrier, cue to action, self-efficacy and perceived barriers were significantly associated with willingness of human papillomavirus vaccination.

The for more effort should be focused on school-based education on cervical cancer and its prevention is crucial to decrease human papilloma potential barriers and to increase adolescent awareness as well as acceptance.

Keywords: willingness, Health Belief Model, Human papilloma vaccination, Adolescent, Ethiopia

List of abbreviations and acronyms

DALY	Disability-Adjusted Life-Year
GDP	Growth Domestic Product
HPV	Human Papilloma Virus
HBM	Health Belief Model
LAC	Latin America and the Caribbean
LMIC	Low Middle-Income Countries
MPH/HM	Master of public health in health management
NW	North West
PI	Principal Investigator
Ph.D.	Philosophical Doctorate
SDG	Sustainable Development Goals
SSA	Sub Saharan Africa
UNICEF	United Nations Children and Education Fund
WHO	World Health Organization
YLL	Years of life lost

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1. Introduction

1.1 Background

Cervical cancer is one of the most serious threats to women's lives worldwide, and it is the fourth most common cancer in women. Cervical cancer affects over a million women in globally, with Human Papillomavirus (HPV) types 16 and 18 responsible for up to 70% of cases(1, 2).

Cervical cancer ranks second in incidence and mortality behind breast cancer in developing countries(2).Sub-Saharan Africa has among the highest incidence and mortality rates in the world, accounting for more than 70% of the global cervical cancer burden, with 70,000 new cases diagnosed each year(3). According to current estimates, 6294 Ethiopian women are diagnosed with cervical cancer each year, with more than three-fourths of them dying as a result of the disease (4).

Most developed countries have well-organized strategies for organized screening, early detection, and successful treatment of precancerous cervical lesions. HPV vaccination provides an opportunity for low-resource settings to reduce the burden of cervical cancer; however, the benefits of the vaccine are limited to the minority of adolescents who have not yet been infected(5, 6). Ethiopia introduced the HPV vaccine for the first time in 2018 with the help of the Global Alliance for Vaccine and Immunization (GAVI).The vaccine is currently being distributed primarily through schools in order to reach all eligible girls(6-8).

Adolescents ’s median age at first sexual intercourse in Amhara region 15.5 yrs which predicts adolescents are at risk for sexually transmitted disease(9, 10) . In 2020, the World Health Assembly adopted a Global Strategy for the Elimination of Cervical Cancer as a public health Issue The global strategy is built on three pillars, each with its own set of goals: a) increasing HPV vaccination coverage to 90% for all girls aged 9–14, b) increasing cervical cancer screening coverage to 70% for women aged 35–45, and c) increasing treatment coverage to 90% By 2030, women will have been diagnosed with precancerous lesions and aggressive cervical cancer(11, 12).

Human Papillomavirus (HPV) vaccination provides an opportunity for primary prevention of cervical cancer in low-resource settings through vaccine provision by Gavi The Vaccine

Alliance(13, 14). Despite the fact that vaccination is an effective way of reducing cervical cancer, vaccination acceptance remains a major challenge in developing countries(15). Empirical evidence on the level of willingness of adolescent girls to take the vaccine, associated factors, and its importance are not well assessed in many low and middle-income countries (LMICs), particularly in Ethiopia. As a result, the purpose of this study was to assess the level of willingness of the human papillomavirus vaccine and associated factors among parents of daughters in Bahir Dar, northwest Ethiopia.

1.2 Statement of the problem

Cervical cancer is the fourth most frequently diagnosed cancer, and the fourth leading cause of cancer deaths in women. According to the Global Cancer Incidence, Mortality and Prevalence (GLOBOCAN), approximately 570,000 cases and 311,000 deaths of cervical cancer were estimated to have occurred in 2018 worldwide(16).It is the world's fourth most prevalent cancer. HPV infection is a huge public health concern, as the virus has infected more than 80% of the population(17).

The global figure of 14 million new cancer cases in 2012 is expected to rise to nearly 22 million by 2030 with the burden shifting from 59 percent to 65 percent of all cancer cases in LMICs over this period. While the costs of cancer care are expected to rise rapidly in all countries around the world, regardless of income(18).The vast majority of cervical cancer cases (86 percent or 453,000 cases) occur in Africa, Latin America, the Caribbean, and Asia, where one out of every nine new cancer cases is of the cervix(19). In Sub-Saharan Africa, human papillomavirus (HPV)-related diseases, notably cervical cancer, are major sources of morbidity and mortality (SSA). Cervical cancer is the leading cause of cancer death among women in the region, with the world's highest incidence rates(20).

Vaccine hesitancy is complex and context-dependent. As a result, hesitancy is caused by individual, group, and discourse influences, as well as any vaccine-specific issues. Every country must take unbroken steps to understand the extent and nature of hesitancy at the area level. As a result, each country should develop a strategy to increase vaccination acceptance and demand, which should include current community engagement and trust-building, active hesitancy prevention, regular national assessments of considerations, and crisis response planning(21, 22)

1.3 Significant of the study

In Ethiopia, cervical cancer is a major public health concern, the second-most deadly cancer among Ethiopian women. Adolescents who engage in unsafe sex practices are at risk of contracting sexual transmitted disease including human Papilloma Virus. Adolescents are target group for human papilloma vaccination. Researchers have investigated parents' vaccine acceptance of the human papillomavirus vaccine and future vaccine uptake; however, little has been known about the willingness of vaccination against human papillomavirus and associated factors among adolescent female students in primary schools in Bahir Dar, Ethiopia.

The findings of the study can be used to inform evidence-based planning. The research findings will contribute to the districts and national baseline study, as well as provide input for institutions, communities, regional, and non-governmental organizations working on adolescent health and cervical cancer prevention and disease prevention programs. And also, information on the willingness of human papillomavirus vaccination and associated factors is critical for the development and implementation of school-based health programs aimed at reducing cervical cancer-related morbidity and mortality by highlighting potential intervention points for stakeholders, health professionals, and health institutions.

The aim of the study is to assess the level of willingness of vaccination against human papilloma virus and associated factors among adolescent female students at government and private primary schools Bahir Dar city administration, NW, Ethiopia, 2021G. C

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2.Literature Review

2.1 Human Papilloma virus

The human papillomavirus (HPV) is a virus that can be detected on the reproductive organ, skin, and mucous membranes of humans(23). Depending on the source, there are currently 200 distinct types of HPV(24). HPV infections are the most often diagnosed sexually transmitted infection today, according to data from the Centers for Disease Control and Prevention. It is most commonly transmitted through vaginal or anal sex, but it can also be transmitted by oral sex or skin-to-skin contact(25).

While the HPV virus itself cannot be cured, the symptoms induced by HPV can be treated. Topical medicines or outpatient techniques such as cryotherapy with liquid nitrogen can be used to treat visible genital warts. When left untreated, genital warts can sometimes disappear on their own(26). Treatment options for HPV-related cancer are dependent on several factors, including the severity of the symptoms, the individual's age, medical history, and other test results(27). HPV-16 and HPV-18 are the most prevalent kinds of HPV found in malignancies. Indeed to research, high-risk HPV infections are the cause of nearly all occurrences of cervical cancer worldwide(28).

2.2 Human papillomavirus and cervical cancer

Viruses are responsible for 15–20 percent of all malignancies in humans. Oncogenic viral infection can induce several stages of carcinogenesis and around 15 kinds of HPV have been related to cervical cancer(29). Extrinsic elements connected to the inflammatory process, such as extracellular nucleotides and adenosine—components of the purinergic system—are involved in this form of cancer(30).

2.2.2 HPV vaccination coverage

A high level of coverage is essential for the containment and eventual elimination of an infection for which a vaccine is available. A minimum of 95% coverage is recommended for the sexually transmitted human papillomavirus (HPV) (31).

HPV vaccine had been introduced in over 100 countries by the end of 2019. World Health Organization (WHO) surveillance data for 75 nations(Fig-1(32). After 2006, nearly all European

countries immediately implemented national HPV vaccination programs, however, coverage is generally inadequate and reported inconsistently, if at all(33, 34). Full-course coverage of ≥ 80% among adolescent girls has been attained in the United Kingdom, Sweden, and Norway, all of which have opted for school-based HPV vaccination. Some countries in which HPV vaccine was offered free-of-charge but not in schools, like Italy, Portugal, and Spain, have achieved around 70% coverage in girls or, in Germany, 50%. Denmark had initially > 80 coverage(35).

The 90 percent objective for HPV vaccination coverage by 2030 is compared to WHO/UNICEF forecasts for HPV vaccination coverage from 2010 to 2019. The final HPV dose coverage for 2019 is expected to be 15% globally. To achieve the 90 percent eradication goal set by 2030, there is still a long way to go(36). . To ensure that all eligible girls in both private and public schools receive the vaccine, it has been provided predominantly through a school-based manner. Out-of-school females were permitted to get immunized at any health institution across the country(37).

HPV vaccines were given in a three-shot series over six months, with the second injection administered one month after the first and the last dosage administered six months after the first. The second and third dosages should be taken within the suggested six-month time range to receive the best protection(38). The quadrivalent vaccine protects against HPV types 6, 11, 16, and 18, while the bivalent vaccine protects against HPV16 and 18 (39)**.**

Adolescents aged 14 years are the best candidates for hpv vaccines since they have had the least amount of exposure to the virus through sexual contact and have shown the best immune response (39, 40). The United States, Australia, and Canada were among the first nations to offer hpv vaccination in 2006, and by the end of 2016, 74 countries had included hpv vaccine in their national immunization programs (41). When given before sexual activity, hpv vaccines have been demonstrated to be at least 95% effective in avoiding infection with the most carcinogenic strains of hpv and 100% effective in preventing precancerous alterations of the cervix(42). In LMICs, hpv vaccination has a lot of promise for lowering cervical cancer rates. It is cost-effective; for example, Bray and colleagues (2015) calculated that the cost of avoiding one disability-adjusted life-year (DALY) with HPV vaccine is less than the per capita GDP(41).

Rwanda achieved extremely high vaccine coverage of greater than 98% for the 3-dose schedule of vaccinations in 2014(43). The prevalence of hpv types (6, 11, 16, 18) among 14- to 19-year-

olds decreased significantly from pre-vaccine to vaccine years (from 11.5 percent to 4.3 percent)(44). According to the zonal health department report number of girls 14 years of age who have received the first dose of the human papillomavirus vaccine 1713 and the number of girls 14 years of age who have received the second dose of the human papillomavirus vaccine is 1059, had used 4080 doses of HPV (45)

2.4 Human papilloma vaccination misinformation

Vaccine hesitancy is one of the top ten threats to global health in 2019. Health misinformation about vaccines was also very common (43%), with the human papillomavirus vaccine being the most affected(46).

2.5 Application of Health Belief Model towards HPV Vaccination

2.5.1 Health Belief Model application

The HBM has been applied to the prediction of an impressive broad range of health behaviors among broad range of population. It could be used for preventive health behaviors, health risks and clinical use(47). In the 1950s, Hochbaum, Leventhal, Kegeles, and Rosenstock developed the Heath Belief Model (HBM)(48). The six key components of the HBM are perceived vulnerability, perceived severity, perceived advantages, seen barriers, action signals, and self-efficacy(49). Some studies have been applied HBM for HPV vaccine Intention. The importance of HBM structures in determining vaccination intention and uptake To boost the benefits of HPV vaccination while lowering the barriers to vaccination, improved health promotion and communication measures are urgently needed(50).

2.6 Health Belief Model Constructs.

The Health Behavior Model (HBM) is a theoretical framework that is frequently used to guide public health interventions(51). It is assumed that individuals who are vulnerable to health effects will alter their behavior if the benefits outweigh the barriers to change or the costs of adopting a new activity(52).Their perceived vulnerability to ill health, the perceived severity of disease (or discomfort), perceived benefit of changing, perceived barriers to change, cues to action and self-efficacy (perceived effectiveness of their actions) are the constructs of the HBM(53)

2.6.1 Perceived Susceptibility to Cervical cancer

The present or previous perception of HPV/STI exposure, as well as having a cancer-prone relative, appear to have a greater impact on perceived cervical cancer susceptibility(54). Older and younger ages at first intercourse, family history, screening recommendations, and family history and perceived risk of HPV exposure are all linked to cervical cancer susceptibility(55). The use of the HPV vaccine is linked to a perception of susceptibility(56).

2.6.2 perceived seriousness of cervical cancer

Female students' perceptions of the seriousness of cervical cancer will be assessed using a seven-item measure developed from prior studies. The response options are scored on a 5-point Likert-type scale, with 1 being strongly disagreed and 5 is strongly agreed (strongly agree). “Having cervical cancer would make a woman's life difficult,” and “Cervical cancer reduces women's life span,” were two examples of the items. Higher scores on this scale reflect a higher perception of cervical cancer's significance(57).

2.6.3 perceived Benefits of Human papillomavirus vaccination

Educating parents about the benefits of HPV vaccination and acting in ways that respect the culture of rural areas are among the recommendations based on our findings (including religious and spiritual influences on personal health practices(58)

2.6.4 perceived barriers to Human papilloma vaccination

The most common explanations for low vaccine uptake were a lack of information about the HPV vaccine and the high cost of purchase(59).and also One of the most significant barriers to public acceptance of HPV vaccination has been rumors concerning vaccine safety(60). human papillomavirus vaccines are viewed with suspicion, particularly in terms of their efficacy and safety(61).

2.6.5 cue to Human papillomavirus vaccination on cervical cancer

Negative vaccine health effects, medical recommendations, favorable vaccine attitudes, and subjective norms were all significant correlates of vaccination(62). Parents and girls viewed HPV vaccination favorably and enthusiastically, based on their prior immunization experiences. Vaccinations were formerly thought to be beneficial in preventing illnesses in general(63).

2.6.6. self-efficacy

Greater HPV vaccine self-efficacy was linked to increased vaccine intentions, as were perceptions of more support for HPV vaccination from friends, parents, and doctors. Furthermore, having more parental and doctor support for HPV vaccination was linked to more positive attitudes toward the vaccine, which was linked to more vaccine intentions(64). The decision not to vaccinate was linked to a lower impression of HPV-related cancer risk and a higher level of self-efficacy(65). Because HPV infection usually happens soon after the initial sexual activity, vaccine effectiveness will be decreased in older age groups due to previous infections. Some adults who had previously been exposed will have developed natural immunity(66).

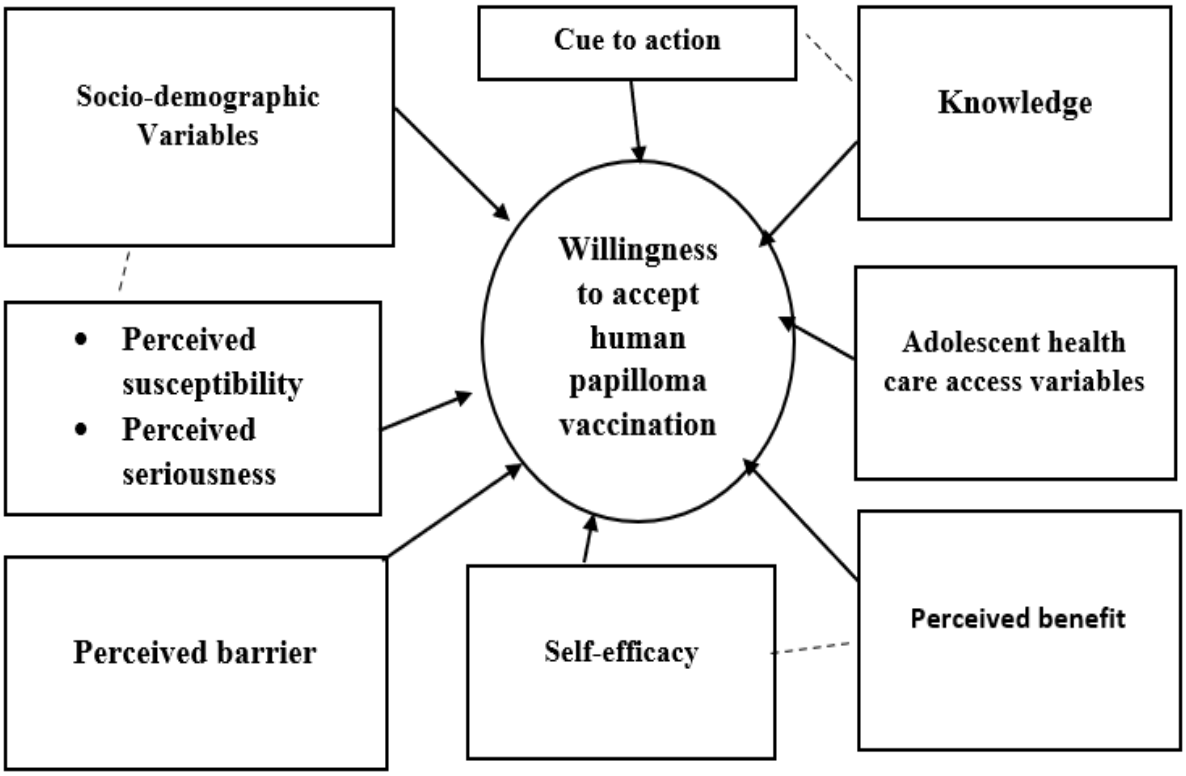

Figure 1: Willingness of human papilloma vaccination from (48, 65) using: - Health Belief Model (HBM) among adolescent female students at primary schools in Bahir Dar, NW Ethiopia, 2021.

Key: Broken line indicates possible relationship among factors while solid line shows significant association between factors and outcome variable

4. Objectives

4.1 General Objective:

- To assess the willingness of human papillomavirus vaccination and associated factors among adolescent female students at government and private primary schools Bahir Dar city administration, North west, Ethiopia, 2021

4.2 Specific objectives

i. To compare the level of willingness to human papillomavirus vaccination among adolescent female students at government and private primary schools Bahir Dar city administration, North west, Ethiopia, 2021

ii. To identify factors associated with willingness of human papillomavirus vaccination among adolescent female students at government and private primary schools Bahir Dar city administration, North west, Ethiopia, 2021

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5. Methods and materials

5.1 study area and period

Bahir Dar city, the capital of the Amhara Regional State, is located 565 kilometers from Addis Ababa. It is split into six sub-cities have with 40 kebele. urban (26), and 14 rural (14). The overall population of Bahir Dar is 388,177, according to the Bahir Dar administrative plan commission and the Bahir Dar health sector information office, with 50.1 percent of women and 21% of adolescents aged 10 to 19 years old. The city has 64 elementary schools of which 38 are government-owned and 26 are private schools, with a total of 35,598 students. Of the total students, 6,665 students were attending private schools while 28,933 were studying at government-owned primary schools(67).

5.2 Study Design and period

Facility-based comparative cross-sectional study design was applied from September 1 to October 30, 2021, in Bahir Dar city administration, Amhara regional State, North West, Ethiopia.

5.3 Source and study populations

5.3.1 Source populations

All-female adolescent girls whose age 10-19 yrs among primary schools at Bahir Dar city administration

5.3.2 Study populations

All selected female adolescent girls whose age 10-19 yrs in the selected primary schools in Bahir Dar city administration during the data collection period were included in the study population.

5.3.3 Sample unit

Adolescent girls whose age 10-19 yrs were chosen by simple sampling technique from selected primary schools

5.4 Eligibility Criteria

5.4.1 Inclusion criteria

Female adolescent students who’s aged 10- 19 years old were included in the study participants

5.4.2 Exclusion criteria

Adolescent girls whose age 10-19 yrs who had a history of adverse events for any vaccines, students that received human papilloma vaccine, and absentee during the data collection period were excluded from the study.

5.5 Variables

5.5.1 Outcome variables

The willingness of human papillomavirus vaccination; - was measured by asking the participants if they were willing to receive the HPV vaccine in the next 6 months ("Yes" or "No")(68)

5.5.2 Independent variables

The independent variables were the demographic variables, adolescent healthcare-related variables, knowledge, perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cues to action, and efficacy.

5.6 Operational definitions of variables

Good knowledge: -Adolescent female students about cervical cancer and human papillomavirus vaccination if the adolescent answered three more than 50%, they have good knowledge(40)

Perceived Susceptibility: - someone's subjective belief about the risk of contracting cervical cancer, and also the possibility refers to someone's risk of having a particular disease or adverse health effects. The result of the answer score < mean was categorized as low perceived susceptibility, the answer score > mean was categorized as high perceived susceptibility.

Perceived severity: - Evaluations of medical, clinical, and social consequences that may arise according to actions in preventing diseases. The result of the answer score < mean was categorized as low perceived severity, the answer score > mean was categorized as high perceived severity

Perceived benefit: the effectiveness of strategies to reduce the threat of human papillomavirus and cervical cancer that aims to improve a person's quality of life. The result of the answer score < mean was categorized as low perceived benefits, the answer score > mean was categorized as high perceived benefits.

Perceived barriers: -_ negative consequences that arise when taking action both physically, psychologically, and financially. Signal perception acts as a factor that moves people to change their behavior in health behavior. The result of the answer score < mean was categorized as low perceived barriers, the answer score > mean was categorized as high perceived barriers.

Cue to action:-_ a person's action to prevent cervical cancer by inserting human papilloma vaccine containing protein antibodies that can kill the virus that causes cervical cancer The result of the answer score < mean was categorized as low cues to action, the answer score > mean was categorized as high cues to action and efficacy (56).

5.7 Sample size and sampling technique

5.7.1 Sample size determination

The sample size was calculated by using double population proportion formulas. Considering the following assumptions: the prevalence of willingness of Human papilloma vaccination among school adolescent females was unknown and taken as Prevalence (50%), the margin of error of 5%, confidence level of 95%, 10% non-response rate, ratio 1:1, and design effect to be 2.

A). **Sample size of Objective (1**) Willingness of vaccination to against human papilloma virus n = z^2p (1-p⁄d^2) (1.96) ^{2}x0.5) (1-0.5)⁄(.005) ^{2}) =384*Design effect (2) =768 and 10% non-response rate =76.8, The final sample size to be= 844.

B). **The sample size of the objective (2)** for factors associated with willingness of vaccination against human papillomavirus determined by using a double population proportion formula using Epi-Info ^{TM} 7 software using the following assumptions: 95% CI, power of 80%, % unexposed: exposed ratio= 1, % of outcome in unexposed group= 5.3% and Odds Ratio of two significantly associated variables good knowledge about cervical cancer [AOR=5.49)(69).=184, The final sample size would be 405. accordingly, the largest sample obtained from the first objective was 768 and adding a 10% non-response rate, the final sample size for this particular study was 844.

5.7.2 Sampling techniques and procedures

Multistage sampling techniues was used to select the primary school adolescent female students.

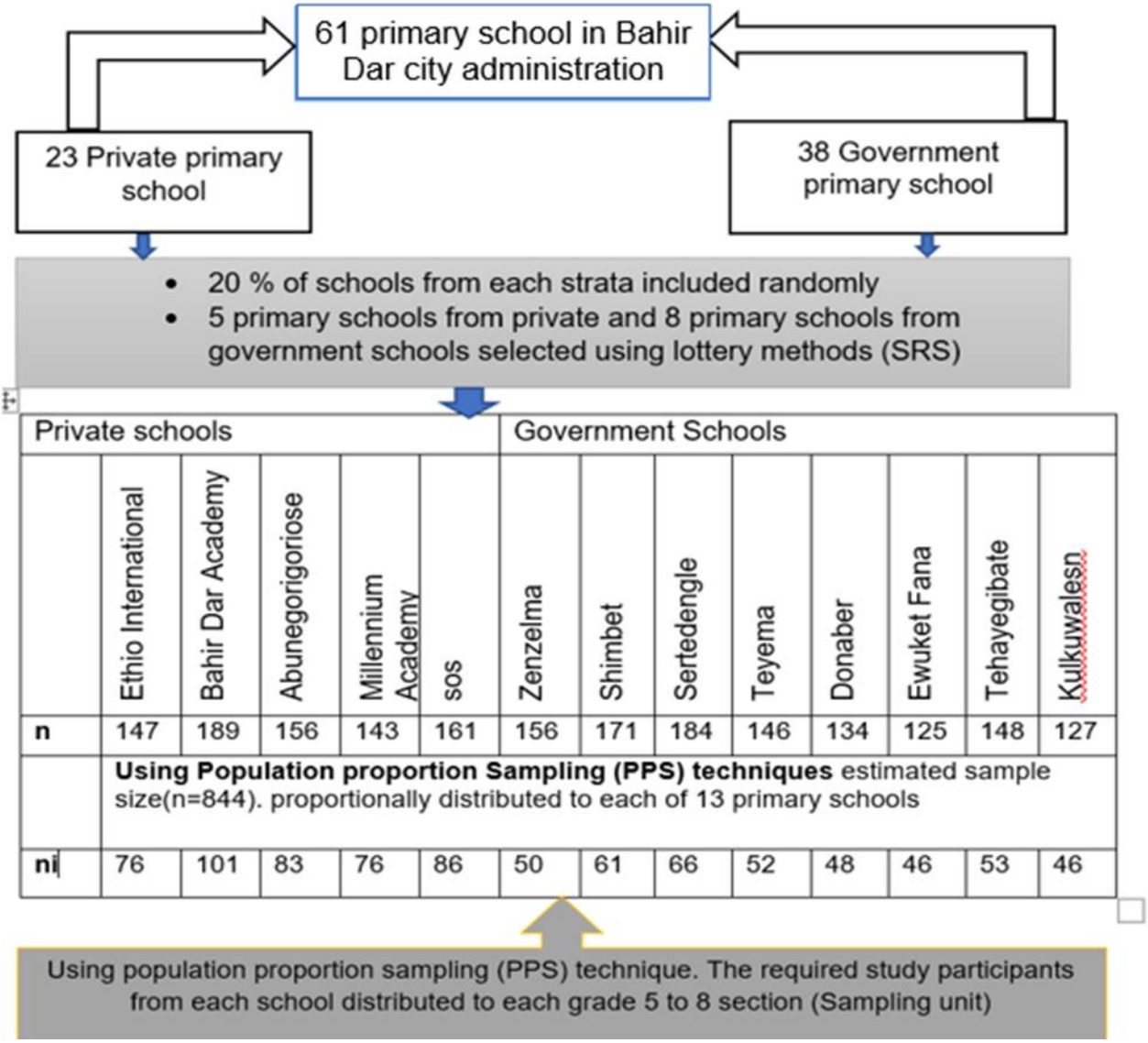

Figure 2: Schematic presentation of multistage sampling technique for the willingness of human papillomavirus vaccination and associated factors among adolescent female students at primary schools of Bahir Dar, NW, Ethiopia,2021

Government and private-owned schools were chosen using stratified sampling techniques. This research was included 20% of government eight and five private schools. The samples were distributed in proportion to the number of students. Each study participant was chosen using simple random sampling techniques, and lottery methods were used to select each adolescent female student from each grade and section, and the total number of students in each government and

private-owned school was determined, with 422 students from the private-owned primary school and 422 students from the government-owned primary school participating in the study for a total number of adolescent students were account for this particular study 844.

First stage: A stratified random sampling procedure was used to select private and government-owned primary schools among Bahir Dar city administration. Eight government and five private primary schools were selected by simple random sampling techniques. The sample size was determined using population proportion sampling techniques allocated to number of female adolescents in primary school.

Second stage: Using students' roaster from each Junior primary schools Section 1A up to Section 5E female students was selected by simple random sampling techniques.

5.8 Data collection methods and Tools

A structured, pre-tested, and self -administered questionnaire was used to collect data. Informed consent was sent to families or guardians to guarantee sign assent form before one day of data collection. All of the participants were self-administer interviewed outside of the classroom at school to ensure that they were responded to freely and appropriately. Four female BSc nurses were gathering data, and the data collectors were supervised by two female MPH /RH specialists. HBM constructs using a five-point Liker scale scale to measure responses (strongly disagree, disagree, neither agree nor disagree, agree and strongly agree). This section. The first of this section included a 4-item scale to test perceived susceptibility of HPV and a 12-item scale to assess perceived seriousness of HPV. 5-item scale to assess perceived benefits of receiving the HPV vaccination and 11-item scale to assess perceived barriers to receiving the HPV vaccination. The final 9-item scale to assess cues to the action of getting the HPV vaccination and a 12-item scale to assess self-efficacy for receiving the willingness of human papilloma vaccination.

5.9 Reliability of Test

Based on the results of the item-total correlation reliability test, it was found that the measurement of Perceived Susceptibility, Perceived Severity, Perceived Benefits, Perceived Barriers cue to action, and self-efficacy, i.e., correlation r calculated ≥ 0.20 and Cronbach alpha ≥ 0.87 so that all items were stated as reliable. Cronbach's alpha value on the instrument of perceived susceptibility is 0.71 and the item correlation value is ≥ 0.51. Cronbach's alpha value on

the perceived severity is 0.90 and inter Item correlation is ≥ 0. 40 Cronbach's alpha value on the perceived benefit of the tool is 0.81 and the correlation item value is ≥ 0.54. Cronbach's alpha value on the instrument of perceived barrier is 0.75 and the item correlation value is ≥0.29. Cronbach's alpha value on the Cronbach alpha cue to action instrument is 0.70 and the item correlation value is ≥0.27. Cronbach's alpha value on Cronbach's alpha self-efficacy instrument is 0.88 and item correlation value is ≥ 0.38

5.10. Data Quality assurance

To maintain data quality and consistencies the English version questionnaire was translated into Amharic for data collection. The pre-test was conducted using 5 % (42) of the final sample size in unselected primary schools that has similar characteristics with the selected primary schools by the principal investigator a week before actual data collection. After the pretest was conducted ordering, wording and missed variables of the questionnaire were corrected. The one-day training was given to the data collectors and supervisors on the objective, the relevance of the study, confidentiality of information, respondent's right, informed consent, and techniques of the interview. The supervisors & the principal investigator were made frequent checks daily on the data collection process to ensure the completeness & consistency of the gathered information.

5.11. Data Management and analysis

Data were coded and entered into Epi data version 3.5.1 statistical soft wear and exported to SPSS version 23 for cleaning and statistical analysis. Data was presented in the form of texts, tables, and graphs. Bivariable binary logistic regression was used to identify candidate variables for multiple logistic regression analysis. Variables with a p-value of <0.25 in the binary logistic regression analysis were included in the multivariable binary logistics analyses model. To check the model fit or not Hosmer-Lemeshow goodness-of-test was done since the p-value = 0.163 is greater than 0.05, which is not significant, which is an indication that the overall fitted model is good. The Chi-squared ($\chi 2$) test was performed to determine the statistical significance between the predictors and outcome variable. Predictors with a p-value <0.05 were considered statistically significant with the outcome variable. Adjusted odds ratios with 95% CI were used to determine the strength and presence of association respectively.

5.12. Ethical consideration

Ethical clearance letter (IRB 3016/2021) was obtained from the Institutional Review Board of Bahir Dar University; school of public health. Amhara puplic health institute gave the permission letter to Bahir Dar zonal health department. The support letter was written to 13 primary schools and the school director offered a permission letter to the class representative. After informing them about the purpose, benefit, risk, the confidentiality of the information, and the voluntary nature of the participation in the study. Written informed consent was a gate from a parent and adolescent age 10-18 yrs old. Then assent was obtained from the adolescent whose age <18 yrs old. Participation was voluntary basis and confidentiality was maintained to encourage accurate and honest self-disclosure.

6. Results

6.1 Socio-demographic Characteristics of the respondents

A total of 820 adolescent girls participated in the study with a 97.1 % response rate. out of this half (50 % and 50 %), respondents were from government and private -owned primary schools respectively. The mean age adolescent girls with Standard Deviation (SD) were 13.86(±1.76) and 13.76(±1.754) years for government and private primary schools, respectively. There was a statistically significant difference in age among study participants with X^2 = 13.746, P-value= 0.013. In terms of the level of maternal educations, 199 (48.5%) of the government and 14 (3.4%) private participants mothers were unable to read and write. On the other hand, 211 (51.4%) of the government and 396 (96.9%) of the private study participants mothers were able to read and write. The study participants' distribution had no statistically significant difference in distribution between type of primary schools and educational level at X^2=3.553, P-value= 0.470.

With regards to marital status, 301 (73.4%) of the government and 347 (84.6%) of private participants family were married whereas 45 (11%) of government and 25 (6.1%) patients were single. The rest of the respondents were either widowed or divorced. The study participant distribution had no statistically significant difference in distribution between type of primary school and marital status at X2 =0.263, P-value= 0.52 (Table 1)

Table 1: comparison of socio-demographic characteristics on government and private primary school of Bahir Dar city administration,2021

No_	Variables	Government (n=410) N(%)	Private (n=410 N(%)	Pearson Chisqure X^2	P value
1	**Age of adolescent girls**				
	10-14yrs	251(61.2)	318(77.6)	3.037	**0.008**

	15-19 yrs	159(38.8)	92(22.2)		
	Age mean(±SD)	13.86(±1.76)		13.745	**0.013**
2	**School grade level**				
	5-6 grades	121(29.5)	182(44.4)	0.885	0.35
	7-8 grades	289(70.5)	228(55.6)		
3	**Religion**				
	Orthodox	366(89.3)	312(76.1)	2.456	0.48
	Muslim	39(9.5)	64(15.6)		
	Protestant	3(0.7)	34(8.3)		
	Others	2(0.2)	0(0)		
4	**Family Marital status**				
	Single	45(11)	25(6.1)	2.263	0.52
	Married	301(73.4)	347(84.6		
	Windowed	31(7.6)	14 (3.4)		
	Divorced	33(8.0)	24(5.9)		
5	**Mothers' education level**				
	Unable to read and write	199(48.5)	14(3.4)	3.553	0.470.
	Primary school	113(27.6)	71(17.3)		
	secondary school	53(12.9)	101(24.6)		
	Post-secondary	18(4.4)	61(14.9)		
	University	27(6.6)	163(39.8)		
6	**Fathers education level**				

	Illiterate	128(31.2)	8(2)	1.336	0.855
	Primary school	157(38.3)	34(8.3)		
	secondary school	48(11.7)	57(13.9)		
	post-secondary	17(4.1)	59(14.4)		
	University	60(14.6)	252(61.5)		
7	**Mothersemployment status**				
	Yes(n=97/157)	97(23.7)	157(38.3)	0.365	0.5
	No	313(76.3)	253(61.7)		

6.2 Adolescent grade level in government and private schools

131(32%) of government and 162(39.5%) private (Fig 3) adolescent female students were grade eight students and on the other hand, 56(13.7%) government and 64(15.6%) of participants were grade five students.

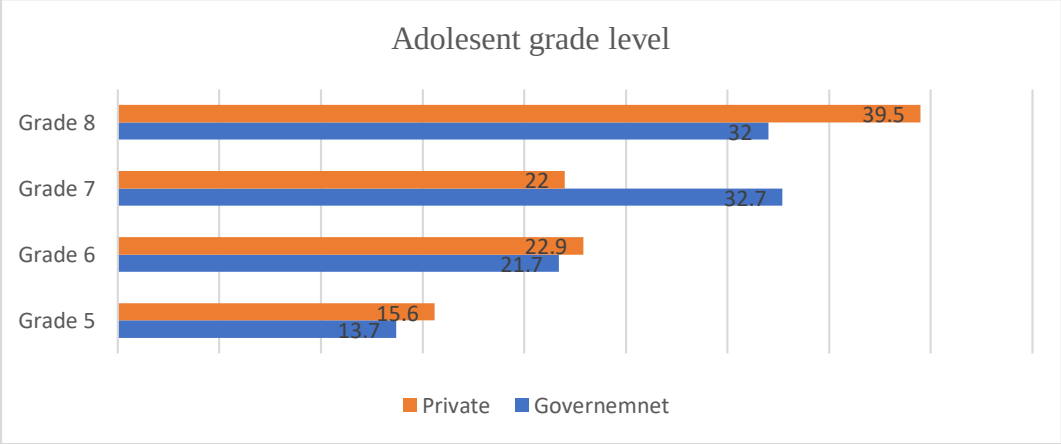

Figure 3: Adolescent female students grade level at primary school Bahir Dar, NW, Ethiopia:2021

6.3 Adolescent girls' knowledge on human papilloma virus

In terms of the level of information about cervical cancer , 260 (63.4%) of the government and 301 (73.4%) private participants had an information about cervical cancer. The study participant distribution had a statistically significant difference in distribution between type of school and

cervical cancer information at X^2 =6.146, P-value= 0.008. With regards to human papiloma vaccination, 128 (31.2%) of the governement and 62 (15%) of private participants were information about human papiloma virus vaccination **.**There was stastical significance different in distribution between type of primary school and human papiloma vaccination X^2 =7.015, P-value= 0.010.The cause of cervical cancer do not show stastical significance difference between governemet and private primary schools X^2 =0.394, P-value= 0.295 . Knowledge about HPV were ,154(37.4%) of governemet and 120(29.5%) private participant were poor knowledge . Knowledge had shown significant statistical difference by type of schools with X^2 =7.015, P-value= 0.010**.** (Table 2)

Table 2: comparison of knowledge on human papillomavirus among government and private primary school of Bahir Dar north west, Ethiopia:2021

No_	Variables	Gov't (n=410) N%	Private (n=410) N%	Pearson - Chi-square X^2	P value
1	**Information about the Human papillomavirus**				
	Yes	190(46.3)	73(17.8)	3.499	0.061
	No	220(53.7)	337(82.2)		
2	**Information about cervical cancer**				
	Yes	260(63.4)	301(73.4)	6.146	**0.008**
	No	150(36.6)	109(26.6)		
3	**Information about Cervical cancer is caused by HPV**				
	Yes	93(23.7)	60(14.6)	0.394	0.295
	No	317(77.3)	350(85.4)		

4	**Information about the Human papilloma vaccine**				
	Yes	128(31.2)	62(15.1)	7.015	**0.010**
	No	282(68.8)	348(84.9		
5	**HPV knowlege**				
	Poor knowlege	154(37.4)	120(29.7)	6.336	**0.007**
	Good knowlege	256(62.4)	290(70.3		

6.4 Adolescent health care access related characteristics

Of the adolescents,16.6% of the government and 6.6% in private owned primary schools had ever visited adolescent youth sexual and reproductive health service. Visiting AYSRH service do not show significant statical difference by type of primary school with X^2 =0.769, P-value= 0.222**.** of this 70.9% of adolescent female students in government and 66% in the private-owned school period for a recent visit to a health facility for sexual and reproductive health service were working hours. And also 54.4% of government-owned and 70.3% of adolescent reproductive service hours are inconvenient to clients. while 39(57.4%) of government and 19(70%) private owned schools. And also, reproductive service hours are too long 60.3% and 70.3% government and private school adolescent sexual and reproductive health service attendants. Long waiting hours do not show significant statistical difference by insurance status with X2 =1.286, P-value= 0.291 (Table 3)

Table 3: Comparison of adolescent health care access among government and private primary school Bahir Dar Northwest, Ethiopia:2021

	Variables	**Government (410) n (%)**	**Private (410) n (%)**	**Pearson Chi-square X^2**	**P value**
1	**Ever visit of Adolescent and Youth Sexual and Reproductive Health Service (n=125)**				
	Yes	68(16.6)	27(6.6)	0.769	0.222
	No	342(83.4)	383(93.4)		
2	**The Period of adolescents 'most recent visit to a health facility for SRH services (n=95)**				

	working hours	48(70.9)	17(66)	0.908	0.635
	Out of working hrs**	20(29.1)	10(34)		
3	**Youth reproductive health services hours are inconvenience (n=95)**				
	Yes	37(54.4)	19(70.3)	0.979	0.573
	No	31(45.6)	8(29.6		
4	**Fear being seen by parents or others when you visit RH service (n=95)**				
	Yes	39(57.4)	19(70.3)	0.133	0.8
	No	29(42.6)	8(29.6		
5	**Reproductive health services waiting hours are too long (n=95).**				
	Yes	41(60.3)	19(70.3)	0.583	0.291
	No	27(39.7)	8(29.6		
6	**Service providers are judgmental and unfriendly (n=95).**				
	Yes	29(42.6)	19(70.3)	3.033	**0.041**
	No	39(57.4)	8(29.6)		
7	**Feel embracement at seeking or going to RH services (n=95).**				
	Yes	23(33.8)	13(48.1)	1.286	0.178
	No	45(67.2)	14(51.9)		

Out of working hours (weakened and at night)

6.5 Willingness of human papilloma vaccination

The overall proportion of adolescent willingness for human papilloma vaccination in the study area was 50.6% (95%CI: 47.4-54). Willingness to accept human papiloma vaccination was was significantly high among government than private primary school adolesent studnets with X^2=-35.29, P=0.001.

A lower proportion of willingness of human papillomavirus vaccination was noted among adolescent girls in privately-owned primary schools 40.2% (95%CI: 35.6-44.9) than government-owned primary schools which were 61% (95%CI:56.3-65.4)(Table-4)

Table 4: Comparison willingness of human papilloma vaccination on Government and Private primary schools

No	Willingness Vacciantion	Government (N=410) N%	Private (N=410)	Pearson chi-squre X^2	P value
1	Willing to accept vacination	250(61)	165(40.2)	35.249	**<0.001**
2	Not willinge to accept vaccination	160(39)	245(59.8)		

6.6 Health Belief Model constructs and willingness of human papilloma vaccination

In the willingness of human papillomavirus vaccination and associated factor study, participants were asked to select the best match to their level of agreement with the statements related to each construct of the Health Belief Models. The mean score of percived seceptability of illnesses was 12.4±5.8 and 12.82±4.81 among among governemet and private adolesent girls respectively. Percived suseptability was significantly high among private than government primary school participants with X^2=-30.06 , P=0.018.

The mean score of percived severity disease was 12.24±4.60 and 17.03±3.67.Percived severity was significantly low among government than private scchool participants X^2=130.01 , P=0.001. The mean score of percived barrier was 14.5±4.44 and 14.98±4.16.Percived barrier was significantly low among government than private primary school adolesent girls.

The mean score of cue to action was 17.33(±4.8) and 16.28±4.51.Cue to action was significantly low among government than private primary school participants X^2=35 , P=0.001.

The mean score of self efficacy was 14.24±4.6 and 17.03±3.67.efficacy was low among governmet than private primary school participants X^2=44 , P=0.001 (Table-5).

6.7 Rotated factor analysis of Health Belief Model (HBM) constructs

The result of the factor analysis showed that the KaiserMeyer-Olkin value was 0.76, which indicates that the sample size was adequate for principal component analysis.

The results of the Bartlett test of sphericity (P < .0001) also indicated that the variables were correlated and therefore suitable for factor analysis.

Willingness of Human papilloma vaccination was explained by 0.80 [80%],0.70[70%] and 0.50[50] explained by a cue to action, self-efficacy, and perceived barriers respectively .46.26% total variance explained by Health Belief Model constructs (Table-5)

Table 5: Comparison of Health Belief Model constructs on primary school adolescent girls of Bahir Dar city administration, north west, Ethiopia:2021

Health Belief Model constructs	**Loading factor**	**Government(n=410)**		**Private(n=410)**			
		Mean	**Standard Deviation(SD)**	**Mean**	**Standard Deviation(SD)**	**Pearson chi-square**	**P value**
Percived suseptability	0.44	12.40	(±5.18)	12.82	(±4.81)	30.06	**0.018**
Percived severity	0.73	14.24	(±4.60)	17.03	(±3.67)	130.01	**<0.001**
Percived benefit		13.31	(±3.60)	20.79	(±2.08)	20	**<0.001**
Percived barrier	0.53	14.05	(±4.44)	14.98	(±4.16)	40	**<0.001**
Cue to action	0.8	13.73	(±4.80)	16.28	(±4.51)	35	**<0.001**
Self efficacy	0.76	14.24	(±4.60)	17.03	(±3.67)	44	**<0.001**

6.8 Factors associated with willingness of human papillomavirus vaccination at government and private primary school.

The overall proportion of the willingness of human papillomavirus vaccination among adolescent female students at primary school was 50.6%(95%CI: 47.4-54) .where as in government and private-owned primary school it was 58.3% (95%CI:53.2-62.9 and 39% (95%CI: 34-4-43.9), respectively. The Bivariate logistic regression analysis showed , age, grade level, family education , knowledge ,perceived susceptibility, perceived severity, perceived benefit,perceived barrier, cue to actions, and self- efficacy were the candidate's variables for multivariable binary logistics regression analysis at p-value<0.25. The result of the multivariable analysis revealed that , maternal education ,perceived barrier, cues to action, and self-efficacy were found to be statistically and independently associated with willingness of human papilloma vaccination in the study area.

Adolesents who had educated mothers were two times[AOR=2.0,95%1.29-3.05] more likely to recive human papiloma vaccine as compared with illitrate families.

Adolescents who had high cue to action were 1.9 times [AOR = 1.92, 95% CI: 1.20–3.07] more likely to have willing to take human papilloma vaccination as compared with counterparts. Adolescent girls who had high self-efficacy were two times [AOR=2.34, 95% CI: 1.20– 3.07] more likely to a willingness to accept human papilloma vaccine as compared with low self - efficacy. Adolescent students who had high perceived barriers 51% [AOR =0.49, 95% CI: 0.34–0.70] less likely willing to receive the human papilloma vaccination as compared with low perceived barriers (Table 6).

Table 6: Bivariate and Multivariable logistic regression for factors affecting willingness of vaccination in government and private primary school's

No_	**Variables**	**Willingness to acept HPV vaccination**		**(COR) and (AOR)**	
		Yes(%)	**No(%)**	**COR(95%CI.)**	**AOR(95% CI.)**
1	**Mother education**				
	Illiterate	125(58.7)	88(41.3)	**1**	**1**

	Primary	92(50)	92(50)	1.38(0.91,2.07)	1.20(0.78,1.85)
	Secondary	78(50.6)	76(49.4)	1.41(0.92,2.16)	1.38(0.87,2.17)
	Post secondary	40(50.6)	39(49.4)	1.41(0.38,2.38)	1.34(0.77,2.34)
	University	80(42.1)	110(57.9)	**1.95(1.31,2.90)***	**2.0(1.29,3.05)***
2	**Perceived barrier**				
	High	282(68)	310(76.5)	**0.65(0.47,0.88)***	**0.49(0.34,0.70)****
	Low	133(32)	95(23.5)	1	1
3	**Cue to action**				
	High	376(90.6)	322(79.5)	**2.48(1.72,3.70)****	**1.92(1.20,3.07)****
	Low	39(9.4)	83(20.5)	**1**	1
4	**Self-efficacy**				
	High	361(87)	284(70.1)	**2.84(1.99,4.06)****	**2.34(1.58,3.48)****
	Low	54(13)	121(29.9)	**1**	

**** P value<0.001 & * P value <0.05**

6.9 Factors associated with willingness of human papillomavirus vaccination at government primary schools

The proportion of the willingness to accept human papillomavirus vaccination among adolescent female students at government primary school it was 61% (95%CI:56.3-65.4).Willingness of human papiloma vaccination at government primary school was affected knowledge and percived barriers of human papiloma vaccination.Adolesent girls who had good knowledge were two times[AOR=2.05,95%1.33-1.61] more likely to recive human papiloma vaccine as compared with illitrate families.

Adolescent students who had high perceived barriers 65% [AOR= 0.35 ,95%CI: 0.19-0.65**]** less likely willing to receive the human papilloma vaccination as compared with low perceived barriers.(Table-7)

Table 7: Bivariate and Multivariable logistic regression for factors affecting willingness of vaccination in government primary school's

No_	Variables	Willingness to acept HPV vaccination		(COR) and (AOR)	
		Yes(%)	No(%)	COR(95%CI.)	AOR(95% CI.)
1	**Knowledge about HPV/Cxc**				
	Poor knowledge	110(71.4)	44(28.6)	**1**	1
	Good knowlege	140(54.7)	116(45.3)	**2.07(1.35-3.18)****	**2.05(1.33-1.61)****
2	**Perceived barrier**				
	High	172(56.2)	134(46.8)	**0.43(0.26-0.71)****	**0.35(0.19-0.65)****
	Low	78(75)	26(25)	1	1

**** P value<0.001 & * P value <0.05**

6.10 Factors associated with willingness of human papillomavirus vaccination at private primary school

The proportion of the willingness to accept human papillomavirus vaccination among adolescent female students at private primary school it was 40.2% (95%CI:35.6-44.9). Willingness of human papilloma vaccination in private primary school was affected by Maternal education and self-efficacy.

Those adolesent girls who had mothers eduction more than university and above 73% willing to accept human papiloma vaccination[AOR=2.73,95% CI:1.5-4.96**]**. Adolescent girls who had high efficacy were nearly two times [AOR=1.85, 95% CI: 1.12– 3.06] more likely to a willingness to accept human papilloma vaccine as compared with low efficacy (**Table 8)**

Table 8: Bivariate and Multivariable logistic regression for factors affecting willingness of vaccination in government primary school's

No_	Variables	Willingness to acept HPV vaccination		Crude and adjusted odd ratio	
		Yes(%)	No(%)	COR(95%CI.)	AOR(95% CI.)
1	**Mother education**				
	Illiterate	49947.6)	54(52.4)	**1**	**1**
	Primary	37(42)	51(58)	1.25(0.71-2.22)	1.53(0.84-2.81)
	Secondary	29(39.7)	44(61.3)	1.38(0.75-2.53)	1.59(0.84-2.99)
	Post secondary	19(47.5)	21(52.5)	1.01(0.48-2.08)	1.31(0.62-1.80)
	University	31(29.2)	75(70.8)	**2.20(1.24-3.88)***	**2.73(1.5-4.96)****
2	**Self-efficacy**				
	High	130((45.6)	155(54.4)	**2.157(1.37-3.40)****	**1.85(1.12-3.06)****
	Low	35(28)	90(72)	**1**	

7. Discussion

The overall proportion of willingness of human papillomavirus vaccination among adolescent girls aged 10-19 yrs in this study was 50.6% (95%CI: 47.4-54). while the willingness of human papilloma vaccination among government and private-owned primary schools was 61% (95%CI:56.3-65.4) and 40.2% (95%CI: 35.6-44.9), respectively. The chi-square test showed that there was a static significant difference in the willingness of human papilloma vaccination between government and private-owned primary schools(p-value=0.0001).

The proportion of willingness of human papilloma vaccination in the study area was 50.6% in line with finding in China 53.5% (70) .It was lower than the reports of study's Mozambique 91%(71), Southeast Nigeria 91%(72), Abakaliki, Nigeria 89.1%(59) and Indonesia 95.8 %(73) however our result was higher than those of studies conducted on Ethiopia 31.4% (74), Kenya 41%(75) Senegalese 28%(76), Italy 46.75% (77), Mainland China 36.9%(78).The possible reason is that difference in the in socio demographic and population (the source population Mozabique,Nigeria and Indonesia) was parents unlike adolescent in the current study .parents might have a better understanding of HPV infection due to their high awareness about HPV vaccination((was 90% in that study) which might put them for their high willingness to vaccinate their daughters than our study.

The proportion of willingness of human papilloma vaccination among adolescent girls who attended at government-owned primary school was 61% .proportion was lower than the reports of study's Mozambique 91%(71), Southeast Nigeria 91%(72) and Abakaliki Nigeria 89.1%(59) , our study result was higher than those of studies conducted in Ethiopia 31.4%(74),Kenya 41%(75),Senegal 28%(76) ,Indonesia 95.8 % (73)and Mainland China 36.9%(78).The possible reason might be lack of awareness about cervical cancer , human papilloma virus and the availability of vaccine might and also the possible poor message delivery system of the responsible body and lack of awareness in the adolescent students.

The proportion of willingness of human papilloma vaccination among adolescent girls who attended at private-owned primary school was 40.2% ,Our finding in line with finding in Kenya 41%(75).the proportion was lower than the reports of study's Mozambique 91%(71), Southeast Nigeria 91%(72) and Abakaliki Nigeria 89.1%(59) , however, our result was higher than those of studies conducted in Ethiopia 31.4%(74),Senegal 28 %(76) ,Indonesia 95.8 %(73) Mainland China 36.9%(78).

The high discrepancy be due to the difference socio-demographic characteristics, study setting, sample size and knowledge of the study participants on human papilloma virus, cervical cancer and its prevention approaches.

Maternal education had a stastically significant with adolesent girls willingness to accept human papiloma vaccination. Adolesents who had mothers education degree and above were about 2

times more likely willing to accept HPV vaccination than mothers who cannot read and write Debremarkose(79) . This might also be justified that those who have higher educational levels and who heard about the HPV vaccine may know about the HPV vaccine by reading different sources.this also supported with vaccine literacy: can be built and reinforced on the idea of health literacy China(80).This is due to the fact that sufficent health literacy would be minimize vaccination hesitancy

Cue to action had a statically significant association with the willingness of human papilloma vaccination. adolescents who had high cues to action were 1.9 times more likely willing to take human papilloma vaccination as compared with low cues**.** This finding consistent with study done in South Africa **(81)**, USA (82). Similarly, this finding is consistent with the study done East Java (56),. This is due to the reason that when an individual has high cue to action on matters of health behaviors, they might be more easily influenced by health information. It also If the students were better informed of the benefits of getting vaccinated against HPV (e.g., preventing HPV infections and reducing the likelihood of genital warts and anal, penile and cervical cancers), they would be less embarrassed to take the course of injections.

Self-efficacy was found to be statically significant in association with the willing to accept of human papilloma vaccination. The odd of willingness to human papilloma vaccination in the presence of high self -efficacy was increased by 2.34-fold hi**g**her as compared to low self - efficacy**.** This finding agrees with finding from different parts of the world(64, 83, 84). This is because it is plausible that adolescent girls in Ethiopia tend to follow health care workers and health extension workers' recommendations; Such recommendations increase willingness to vaccination among school adolescent girls. HPV vaccination decisions for adolescents are frequently parallel decisions and a strong recommendation from a healthcare provider is a key motivator for vaccination(65).

Perceived barriers were significantly associated with the willingness of human papilloma vaccination. Adolescent students who had high perceived barriers were 51% less likely to receive the human papilloma vaccination as compared with low perceived barriers. This finding agrees with finding from western Uganda (63), The result of this study was in line with a study done by Puri(85). which stated that there was an effect of perceived barrier on the completeness of

immunization status. Mothers who felt some barriers in immunizing their baby not to volunteer take preventive action, and vice versa. A study done by Wigati (86) .This is due to the fact that perceived barriers played a key negative role in young female students' willingness for HPV vaccination. The result of this study was also in accordance with the Health Belief Model theory study done in Indonesia(87) . This is due to the fact that a person in determining health actions or utilizing health services is dominated by personal constraints. Perceived barrier was a determinant of behavioral changes.

7.1 strength and limitation

7.1.1 strength

Study lies relatively on a large sample size with high response rate, determinant factors were identified both government and private schools

7.1.2 limitation of the study

Social (wealth, family size, buying habit) and motivational factors were not investigated. Another limitation of study was knowledge about human papilloma virus, cervical cancer and human papilloma virus with only four questions.

8. Conclusion

This study revealed that the proportion of willingness of human papilloma vaccination among adolescents aged 10-19 yrs in government-owned primary schools was higher than that of privately owned primary schools. willingness to accept was significantly associated with, Maternal education, perceived barrier, cues to action, and self -efficacy. The for more effort should be focused on the community awareness and social behavioral change communication in primary school to decrease potential human papilloma vaccination barriers.

9. Recommendation

- **Primary Health care unit and Primary schools**

- Improve communication and coordination beteween teeachers,health extenssion workers and health care workers who adiministor vaccination
- Conduct health care providers initiative and survilance with schools and with in community to increase vaccination uptake
- Improve upon HPV vaccine and vaccination messaging by translating in to local language
- Deploy corrective messaging stratagies including tele/media consultative to adress HPV vaccination misinformation.

- **Bahir Dar adiministrative zonal Health office and Education Office**

- Equip and invest in health care providers,health extenssion workers and teachers to become advocate for vaccine confidence and access HPV vaccine
- Earn the trust of faith leaders and empower them with knowledge on HPV vaccination benefits so they might be come vaccine champion
- Provide additional training for both community and facility based health workers to ensure understanding of the safety,efficacy and the importance of HPV vaccine

- **Researchers**

  Further mixed method research in community experience of human papiloma vaccination is crucial.

- **Policy makers**

  - Prioritizing primary health care system strengthining efforts and equtable HPV vaccination services provission
  - Monitor and adress misleading Human papiloma vaccination misinformation circulating in the community members by engaging local authorities.

- Build community trust through supporting,investing in and engaging community members as participants and leaders in sustainable solution to increase vaccine confidence ,acceptance and vaccine deployement .

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Appendices

Information sheet

The willingness of human papilloma vaccination and associated factors

Name of the organization: Bahir Dar University College of Medicine and Health science school of public Health

Name of the Sponsor: self- sponsor

Name of the Principal Investigator: Mr. Birhanu Feleke

Introduction

You are invited to participate in a research study named willingness to be vaccinated against Human Papilloma Vaccination and associated factors among adolescent female students. The overall objectives of the study are to compare willingness of human papilloma vaccination and associated factors among primary schools. We believe that Adolescent willingness to utilize the Human papilloma vaccination will result in better health for the adolescent in cervical cancer prevention, control, and premature death

We are asking you to participate in this study so that we can better understand the willingness to be vaccinated against the Human papillomavirus vaccination among adolescent female students and identify factors associated with the school community. We plan to compare willingness to be vaccinated against Human papilloma vaccination and associated factors. Your responses are very important and will be crucial in planning and developing strategies and, will help improve cervical cancer prevention and control in Bahir dar and Ethiopia

Procedures

We invite you to take part in our study. If you are willing to participate in the study, you need to give assent and your caregiver/family will sign the consent form. The questioner would last 30-45 minute

Risks and/or Discomforts

Participating in this study there is no risk

Benefits

If you participate in this research, you may not get direct benefits, but your participation is likely to benefit me find out more about willingness to be vaccinated against the Human papillomavirus and associated factors in Adolescent female students

Confidentiality and Anonymity

The information that we will collect in this research project will be kept confidential. All of your answers to questions and information will not be accessed by anyone except the study team and it will only be used for this research purpose. No individual identities will be used in any reports or publications resulting from the study.

Right to Refuse or Withdraw: You do not have to take part in this research if you do not wish to do so, and choosing to participate will not affect you at all. You may stop participating in the interview at any time that you wish.

If you have any questions, you can ask me now or later. If you wish to ask questions later, you may contact me at the following address.

Person to contact: If you have any questions you can contact:

Birhanu Feleke

Bahir Dar University college of medicine and health science school of Public Health

Tel: +251918125220 (mobile)

E-mail: birhanufaciph@gmail.com

Assent Form

I have read the information sheet and decided to my adolescent will participate in the research project. Its general purposes, all the study procedures, confidentialities, risks, and benefits are explained by data collectors. I understand that I can withdraw at any time. I will be part of the study when my parent/guardian permit

_____ _____

Adolescent female student's signature and name Date

_____ _____

Research Assistant's signature and name Date

Consent Form

I have read the information sheet and decided to participate in your female adolescent research project. Its general purposes, all the study procedures, confidentialities, risks, and benefits are explained by data my daughter. I understand that My daughter can withdraw at any time.

_____ _____

Mother/caregiver signature and name Date

_____ _____

Data collectors' signature and name Date

Eligibility Assessment form

Have you been vaccinated for the Human papillomavirus in the past two years?

1 yes not eligible stop her the Question

2 No if No continue to the rest Question

Annex I) English Version Questions

Part 1 Socio-demographic characteristics of Adolescent female student private and public-school Bahir dar city administration, NW, Ethiopia

101	What is your school type	
102	What is your religion	----------yrs
103		1. orthodox 2. Muslim 3. protestants 4. others ----------
104	What is your school grade	----------grade
105	Did you have been gating any chance of participation in any Sexual reproductive health program in your school?	1. Yes 2.No
106	Family Marital status	1. single 2. Married 3. windowed 4. divorced
107	Mothers' education level	1. illiterate 2. Primary school 3. secondary school 4. Post-secondary 5. University or above
108	Fathers' education level	1. illiterate 2. Primary school

		3. secondary school 4.post-secondary 5. University or above
109	Is your mother an employee	1. yes 2. No if "No" skip to Q Mothers occupation
110	what are her professions	1. Health worker 2. Teacher 3. media worker 4.others_____
111	Mothers' occupation	1. Housewife 2. entrepreneur 3. private employee
112	Father's employment status	1.farmer /religious leader 2. entrepreneur 3. private employee 4. Civil servant
113	What is your father's profession	1. Health worker 2. Teacher 3. media worker 4.others_____
114	Did your family members who have been diagnosed with cervical cancer?	1. yes 2.No
115	Have you ever heard about the Human papillomavirus	1. yes 2.No
116	Have you ever heard about cervical cancer	1. yes 2.No
117	Have you ever heard about Cervical cancer is caused by the Human papillomavirus	1. yes 2.No

118	Have you Heard about the Human papilloma vaccine	1. yes 2.No

Part II Adolescent health care access related among adolescent female students at private and Public-School Bahir dar Northwest, Ethiopia

201	Ever visit of Adolescent and Youth Sexual and Reproductive Health Service	1. yes 2.No
202	The Period of adolescents 'most recent visit to a health facility for SRH services,	1. working hours 2. weakened 3. night
203	Youth reproductive health services hours are an inconvenience	1.yes 2.No
204	Fear being seen by parents or others when you visiting RH service	1.yes 2.No
205	Reproductive health services waiting hours are too long.	1.yes 2.No
206	Service providers are judgmental and unfriendly.	1.yes 2.No
207	Feel embracement at seeking or going to RH services.	1.yes 2.No

Part III Perceived Susceptibility of Getting Human papilloma virus (#3) among Adolescent female student private and puplic school Bahir dar city administration, NW, Ethiopia

	Items	**Strongly dis agree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
301	It is likely that I will susceptible Human papilloma Virus					

302	My chances of getting Human HPV the next few years are great.					
303	I feel I will get Human papilloma virus n sometime during my life					
304	Presence of Cervical cancer patient in the family might risk for cancer in future					

Part IV Perceived Severity of Getting Genital Warts or Developing Cervical Cancer (#12) among Adolescent female student private and puplic school Bahir dar city administration, NW, Ethiopia

	Items	**Strong dis agree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strong agree (5)**
401	The thought of genital warts or cervical cancer scares me.					
402	When I think about genital warts or cervical cancer, I feel nauseous.					
403	If I had genital warts or cervical cancer my academics and career would be endangered.					
404	Having cervical cancer would make a adolescent's life difficult					
405	Cervical cancer reduces adolescent girls' life span					

406	Cervical cancer is a cure less disease					
407	My feelings about myself would change if I got cervical cancer					
408	I am afraid to even think about cervical cancer.					
409	My financial security would be endangered if I got cervical cancer.					
410	Problems I would experience from cervical cancer would last a long time.					
411	If I got cervical cancer, it would be more serious than other diseases.					
412	If I had cervical cancer, my whole life would change.					

Part V Perceived *Benefits* of Getting *of Human papilloma virus vaccination (#5)* among Adolescent female student private and puplic school Bahir dar city administration, NW, Ethiopia

	Items	**Strong dis agree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strong agree (5)**
501	If I receive the Human papiloma virus vaccination I would not worry as much about cervical cancer.					
502	Receiving vaccinations will help me to prevent diseases					

503	If I receive the Human papilloma virus vaccination, my treatment for Human papilloma virus vaccination may not be as bad.					
504	Having the Human papilloma virus vaccination is the best way for me to prevent Human papilloma virus vaccination and cervical cancer.					
505	Having the Human papilloma virus vaccination will decrease my chances of dying from cervical cancer					

Part VI Perceived Barriers to Receiving the Human papilloma virus vaccination (#12) among Adolescent female student private and puplic school Bahir dar city administration, NW, Ethiopia

	Items	**Strong dis agree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strong agree (5)**
601	I am afraid to receive the Human papilloma virus vaccination because I might be exposed to virus.					
602	I am afraid to receive the Human papilloma virus vaccination because I don't understand the two-dose procedure.					

603	I don’t know how to go about receiving the Human papilloma virus vaccination.					
604	Receiving the Human papilloma virus vaccination is too embarrassing because it is sexual transmitted disease related.					
605	Receiving the Human papilloma virus vaccination takes too much time.					
606	Receiving the Human papilloma virus vaccination is too painful.					
607	Receiving the Human papilloma virus vaccination can cause adverse reactions/side effects					
608	I cannot remember to schedule the Human papilloma virus vaccination.					
609	I am afraid to receive the Human papilloma virus vaccination because I don’t think Human papilloma virus vaccination is effective.					
610	I am afraid to receive the Human papilloma virus vaccination because I don’t					

	think Human papilloma virus vaccination is safe					
611	I do not know if I already had gate the Human papilloma virus vaccination					

Part VII Cues to Action for Getting the Human papilloma virus vaccination (#9) among Adolescent female student private and puplic school Bahir dar city administration, NW, Ethiopia

	Items	**Strong dis agree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strong agree (5)**
701	I have visited a Health worker					
702	I make sure a condom is used each time someone has sex with me					
703	I frequently do to participate Adolescent health programs					
704	I received Human papilloma virus related information.					
705	I received Human papilloma virus vaccination related information					
706	My friends have suggested I get the Human papilloma virus vaccination					
707	My parents have suggested I get the Human papilloma virus vaccination					

708	Health workers suggested I get the Human papilloma virus vaccination					
709	Mass media Has been informed that I will be vaccinated to HPV					

Part VIII Self-Efficacy of Getting the Human papilloma virus vaccination (#12) among Adolescent female student private and puplic school Bahir dar city administration, NW, Ethiopia

	Items	**Strong dis agree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strong agree (5)**
801	I can arrange transportation to receive the Human papilloma virus vaccination					
802	I can arrange other things in my life to receive the Human papilloma virus vaccination.					
803	I can talk to a health worker about my concerns.					
804	I can receive the Human papilloma virus vaccination even if I am worried.					
805	I can receive the Human papilloma virus vaccination even if I don't know what to expect					

806	I can find a way to pay for the Human papilloma virus vaccination.					
807	I can make an appointment for the Human papilloma vaccination.					
808	I know for sure I can get the Human papilloma virus vaccination if I really want to					
809	I know how to go about getting the Human papilloma virus vaccination					
810	I can find a place to get the Human papilloma virus vaccination					
811	I can get the Human papilloma virus vaccination even if I did not get all of it when I4 yrs old					
812	I can get the Human papilloma virus vaccination if I am 14 years old or under.					

Part IX Outcome variable

901 Are you willing to vaccinate against Human papilloma virus vaccine for the next 12 months period?

1. Yes
2. . No if" No" what is the reason not taking vaccine_____

አባሪ 1

መረጃ

አፍላ ወጣት ሴቶች የሂዉማን ፓፒሎማ ቫይረስ መከላከያ ክትባት ለመዉሰድ ያላቸዉን ፈቃደኝነት እና ተያያዥ ጉዳዮች ላይ የተመለከቱ መጠይቆች ይመለከታል።

የድርጅቱ ስም - ባህር ዳር ዩኒቨርሲቲ የህክም ፣ ጤና ሳይንስ ኮሌጅ እና የህብረተሰብ ት/ቤት

የስፖንሰር አድራጊው ስም- በራስ ስፖንሰር

የዋና ተመራማሪው ስም - አቶ ብርሃኑ ፈለቀ

መግቢያ

በአፍላ ዕድሜ ላይ ባሉ ሴት ተማሪዎች ለሂዉማን ፓፒሎማ ቫይረስ ክትባት ለመከተብ ያላቸዉን ፍላጎት እና ተዛማጅ ምክንያቶች በግል እና በመንግስት የመጀመሪያ ደረጃ ተማሪዎች ላይ በሚል የሚሰራ ሲሆን ። የጥናቱ አጠቃላይ ዓላማ በመንግስት እና በግል የመጀመሪያ ደረጃ ትምህርት ቤቶች መካከል ለሂዉማን ፓፒሎማ ቫይረስ ክትባት ለመከተብ ያላቸዉን ፈቃደኝነትን ለማነፃፀር። በጉርምስና ዕድሜ ያሉ ሴት ተማሪዎች የማኅጸን በር ካንሰር ለቀሪ ህይወታቸዉ ለመከላከል ፣ ለመቆጣር እና ሞትነ ያስቀራል ብለን እናምናለን።

በአፍላ ወጣት ዕድሜ ክልል ላይ ባሉ ሴት ተማሪዎች መካከል በሂዉማን ፓፒሎማ ቫይረስ ክትባት ለመውሰድ ፈቃደኝነትን በተሻለ ሁኔታ ለመረዳት እና ከት / ቤት ማህበረሰብ ጋር የተዛመዱ ጉዳዮችን ለማወቅ በዚህ ጥናት ውስጥ እንዲሳተፉ እንጠይቃለን። በሂዉማን ፓፒሎማ ቫይረስ እና ተጓዳኝ ላይ ክትባት ለመውሰድ ያላቸዉን ፈቃደኝነትን ለማወዳደር አቅደናል። የተማሪዎች ምላሾች በጣም አስፈላጊ እቅድ እና ስት ነቀርሳ መከላከል እና ቁጥጥርን ለማሻሻል ይረዳል።

ሂደቶች

በጥናቱ ውስጥ እንዲሳተፉ በአክብሮት እየቅን። በጥናቱ ውስጥ ለመሳተፍ ፈቃደኛ ከሆኑ ማረጋገጫ እንዲሰጡ ይጠበቃል እና እንክብካቤ ሰጪዎ/ወላጅ የስምምነት ቅጹን ይፈርማሉ። ተጠያቂው ከ30-45 ደቂቃዎች መጠይቆች ያልቃሉ።

ጥቅሞች

በዚህ ጥናት ውስጥ መሳተፍ ፣ ቀጥተኛ ጥቅም ላያገኙ ይችላሉ ፣ ነገር ግን የእርስዎ ተሳትፎ በሂዉማን ፓፒሎማ ቫይረስ ለመከተብ ያለ ፍላጎት እና በአፍላ ሴት ተማሪዎች ዕድሜ ላይ ባሉ ሴት ተማሪዎች ውስጥ ስለ ተዛማጅ ምክንያቶች ለመረዳት ይጠቅመኛል።

ሚስጥራዊነት

በዚህ ጥናት ውስጥ የምንሰበስበው መረጃ በሚስጥር ይቀመጣል። ለጥያቄዎች እና ለመረጃዎች ሁሉም መልሶችዎ ከጥናት ቡድኑ በስተቀር ለማንም አይሰጡም እና ለዚህ የምርምር ዓላማ ብቻ ጥቅም ላይ ይውላል። በጥናቱ ምክንያት በማንኛውም ሪፖርቶች ወይም ህትመቶች ውስጥ የግለሰብ ማንነቶች ጥቅም ላይ አይውሉም።

በጥናቱ ያለመሳተፍ መብት - በዚህ ጥናት ለመሳተፍ ካልፈለጉ አይገደዱም ወይም በሚፈልጉት በማንኛውም ጊዜ በቃለ መጠይቁን ማቋረጥ/ወይም ጥያቄዎችን መዝለል ይችላሉ።

ማናቸውም ጥያቄዎች ካሉዎት ጥያቄዎች መጀመሪያ ላይ ወይም መጨረሻ ላይ ሊጠይቁኝ ይችላሉ። መጠይቁ ከተጠናቀቀ በሁዋላ ጥያቄዎችን መጠየቅ ከፈለጉ በሚከተለው አድራሻ የጥናቱን አጥኝ ማግኘት ይችላሉ። ማንኛውም ጥያቄ ካለዎት የሚከተለዉን አድራሻ መጠቀም ይችላሉ።

ስም ፡- ብርሃኑ ፈለቀ

የባህር ዳር ዩኒቨርሲቲ የህክምና፤ጤና ሳይንስ እና የማህበረሰብ ጤና ት/ቤት

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ኢሜል birhanufaciph@gmail.com

የፈቃድ የስምምነት ቅፅ(የአፍላ ወጣት)

የመረጃ ወረቀትን አንብቤ በአፍላ ወጣት ዕድሜ ላይ የምገኝ ወጣት በምርምር ፕሮጀክቱ ውስጥ መሳተፍ እፈልጋለሁ። አጠቃላይ ዓላማዎቹ ፣ ሁሉም የጥናት ሂደቶች ፣ ምስጢሮች ፣ አደጋዎች እና ጥቅሞች በመረጃ ሰብሳቢዎች ተብራርተዉልኛል። በማንኛውም ጊዜ መውጣት እንደምችል ተረድቻለሁ።

_____ _____

አፍላ ወጣት ሴት ተማሪ ስም ፡ ፊርማ እና ቀን

የስምምነት ቅፅ(የወላጅ)

እኔ አፍላ ወጣት ሴት ተማረ እናት/አባት የመረጃ ወረቀት አንብቤ የሴት ልጄ የጥናቱ አጠቃላይ ዓላማዎች ፣ የጥናት ሂደቶች ፣ ምስጢራዊነቶች ፣ አደጋዎች እና ጥቅሞች በሴት ልጄ ተብራርተዉልኛል። ልጄ በማንኛውም ጊዜ ከጥናቱ መውጣት/ቋራጥ/ እንደምትችል ተረድቻለሁ። ልጄ እንድትሳተፍ ፈቃዴን ሰጥቻለሁ

_____ _____

የእናት/ተንከባካቢ ስም ፊርማ እና ቀን

_____ _____

የመረጃ ሰብሳቢ ስም፡ ፊርማ እና ቀን

የመጠይቁ የልየታ ቅጽ

ባለፉት ሁለት ዓመታት ውስጥ የፓፒሎማ ቫይረስ ክትባት ተከትበዋል

1 አዎ ከሆነ አናመሰግናለን ለትትብብረዎ መጠይቁ ከዚህ ላይ ይቆማል

2 አይደለም መልስዎ አይደለም ከሆነ ቀጥለዉ ያሉ መጠይቆችን ይቀጥሉ

Annex ii) Amharic version Questioner

ማህበራዊ እና የስነ-ህዝብ መረጃን የተመለከቱ መጠይቆች ለሴት ጎልማሳ ተማሪዎች በግል እና በመንግስት ባሉ የመጀመሪያ ደረጃ ት/ቤት ፣ባህር ዳር ፣ኢትዮጵያ ፣2014 ዓ.ም

001	**እድሜ**	**----------በአመት**
002	**ሀይማኖት**	**1.ኦርቶዶክስ** **2. ሙስሊም** **3. ፕሮቴስታንት** **4. ሌሎች ----------**
003	**የትምህርት የክፍል ደረጃ**	**----------ክፍል**
004	**በትምህርት ቤትዎ ውስጥ በማንኛውም የስነ-ተዋልዶ ጤና መርሃ ግብር ውስጥ የመሳተፍ እድልን አግኝተዉ ያዉቃሉ?**	**1.አዎ** **2.አይደለም**
005	**የቤተሰብ የጋብቻ ሁኔታ**	**1. አንድ** **2.በጋብቻ ላይ ያሉ** **3.የተለያዩ** **4.የተፋቱ**
006	**የእናት ትምህርት ደረጃ**	**1.ያልተማሩ** **2.የመጀመሪያ ደረጃ** **3.ሁለተኛ ደረጃ** **4.መሰናዶ/ትክኒክ /ዲፕሎማ/** **5.ዩኒቨርሲቲ እና በላይ**
007	**የአባት ትምህርት ደረጃ**	**1.ያልተማሩ** **2.የመጀመሪያ ደረጃ** **3.ሁለተኛ ደረጃ** **4.መሰናዶ/ትክኒክ /ዲፕሎማ** **5.ዩኒቨርሲቲ እና በላይ**
008	**አናትሽ የመንግስት/የግል /ተቀጣሪ ናቸዉ?**	**1.አዎ**

		2.አይደለም መልስዎ አይደለም ከሆነ ወደ
009	የእናት(ሽ) ሙያቸዉ ምንድን ነዉ?	1. የጤና ባለሙያ 2. መምህር 3. የሚዲያ ሠራተኛ 4. ሌሎች _
010	እናት(ሽ) ተቀጣሪ ከሆነች ስራቸዉ ምንድ ነዉ?	1. የቤት እመቤት 2.ስራ ፈጠራ ላይ የተሰማራ 3. የግል ሰራተኛ 4 የመንግስት ሰራተኞች
011	የአባት(ሽ) የስራ ሁኔታ ምንድን ነዉ	1.አርሶ አደር/የሀይማኖት አባት 2. ስራ ፈጠራ ላይ የተሰማራ 3. የግል ሰራተኛ 4 የመንግስት ሰራተኞች
012	አባት(ሽ) ተቀጣሪ ከሆነች ሙያዉ ምንድ ነዉ?	1. የጤና ባለሙያ 2. መምህር 3. የሚዲያ ሠራተኛ 4. ሌሎች _
013	በማህጸን በር ጫፍ ካንሰር የተጠረጠሩ የቤተሰብ አባላት በቤተሰብ ዉስጥ አለ	1.አዎ 2.አይደለም
014	ስለ ሂዉማን ፓፒሎማ ቫይረስ ሰምተው ያውቃሉ?	1.አዎ 2.አይደለም
015	ስለ ማህጸን በር ካንሰር ሰምተው ያውቃሉ?	1.አዎ 2.አይደለም
016	የማህጸን ጫፍ ካንሰር በ ፓፒሎማ ቫይረስ ምክንያትእንደሚመጣ ሰምተው ያውቃሉ?	1.አዎ 2.አይደለም
017	ስለ ሂዉማን ፓፒሎማ ክትባት ሰምተዉ ያዉቃሉ	1.አዎ

		2.አይደለም

የአፍላ ወጣት ጤና ተደራሽነት ለመጀመሪያ ደረጃ የግል እና የመንግስት ት/ቤት በባህር ዳር ከተማ አስተዳድር ፣2014

018	የወጣቶች ስነ-ተዋልዶ ጤና አገልግሎት በጤና ተቋም አግኝተዉ ያዉቃሉ	1.አዎ 2.አይደለም
019	በቅርብ የስነ-ተዋልዶ ጤና አገልግሎት ካገኙ በየትኛዉ ሰዓት አገልግሎቱን አገኙ	1.በስራ ሰዓት 2.ከስራ ሰዓት ዉጭ 3.ማታ
020	የአፍላ ወጣቶች የስነ-ተዋልዶ ጤና በቂም የሚሰጥበት ሰዓት ምቾት አይመችም	1.አዎ 2.አይደለም
021	የአፍላ ወጣቶች የስነ-ተዋልዶ ጤና ለመጠቀም ወላጆቻችን እና የምናቃቸዉ ሰዎች ያዩናል ብለን እንሰጋናል፡፡	1.አዎ 2.አይደለም
022	የስነ-ተዋልዶ ጤና አገልግሎት በጤና ተቋም የቆይታ ጊዜ ረጅም ጊዜ ይወስዳል፡፡	1.አዎ 2.አይደለም
023	አገልግሎት ሰጭዎች በራሳቸዎ የሚወስኑ/እንደ አቻ ጉዋደኛ አያቀርቡንም	1.አዎ 2.አይደለም
024	የስነ-ተዋልዶ ጤና አገልግሎት ለመጠቀም ምቾት አይሰማኝም	1.አዎ 2.አይደለም

በጉልምስና እድሜ ክልል የሚገኙ ሴት ተማሪዎች ለ ሂዉማን ፓፒሎማ ቫይረስ ተጋላጭነት በሚመለከት በመጅመሪያ ደረጃ የግል እና የመንግስት ት/ቤት በባህር ዳር ከተማ አስተዳደር ፣ኤትዮጵያ 2014

	መጠይቆች	በ ፍ ፀ ዎ እ	አልስማማም (2)	አልወሰንኩም (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)

		ፊስመግ (1)				
025	ምናልባት ለሂዉማን ፓሊሎማ ቫይረስ ተጋላጭ የመሆን እድል ይኖረኛል					
026	በሚቀጥሉት ጥቂት ዓመታት ውስጥ ሂዉማን ፓፒሎማ ቫይረስ የመያዝ እድሌ ከፍተኛ ነው።					
027	በሕይወቴ ውስጥ የሂዉማን ፓፒሎማ ቫይረስ የመያዝ እድል ሊኖር ይችላል					
028	በቤተሰብ ዉሥጥ የማህፀን በር ጫፍ ካንስር መኖር ለወደፊት አፍላ ወጣት ሴቶችን ተጋላጭ ያደርጋል					

በጉልምስና እድሜ ክልል የሚገኙ ሴት ተማሪዎች ለ ብልት ላይ ኪንታሮት(የማህጸን በር ካንስር) ክብዳት በሚመለከት በመጅመሪያ ደረጃ የግል እና የመንግስት ት/ቤት በባህር ዳር ከተማ አስተዳደር ፣ኤትዮጵያ 2014

	መጠይቆች	በፍፁም አልስማማም (1)	አልስማማም (2)	አልወሰንኩም (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
029	የብልት ኪንታሮት ወይም የማህጸን ጫፍ ካንሰር ያስፈራኛል					
030	ስለ ብልት ኪንታሮት ወይም የማኅጸን ነቀርሳ ሳስብ የመንፈስ መረበሽ ይሰማኛል.					
031	የብልት ኪንታሮት ወይም የማኅጸን ነቀርሳ ቢኖርብኝ ትምህርቴ					

	ለአደጋ ይጋለጣል።					
032	የማኅጸን በር ካንሰር የጎልማሶችን የወደፊት ሕይወት አስቸጋሪ ያደርገዋል					
033	የማኅጸን በር ካንሰር የሴቶችን ሕበይወት የመኖር ዘመን ይቀንሳል					
034	የማኅጸን በር ካንሰር ገዳይ በሽታ ነው					
035	በማኅጸን በር ካንሰር ብያዝ ስሜት ይጎዳል					
036	ስለ ማህጸን በር ካንሰር ለማሰብ እንካን እፈራለሁ።					

037	የማኅጸን በር ካንሰር ከተያዘሁ የገንዘብ ደህንነቴ አደጋ ላይ ይወድቃል።					
038	ከማኅጸን በር ካንሰር ጋር የተያያዙ ችግሮች ለረዥም ጊዜ ይቆያሉ።					
039	በማኅጸን በር ካንሰር ከተያዚሁ ለሌሎች በሽታዎች የበለጠ ከባድ ይሆናል					
040	የማኅጸን በር ካንሰር ሕይወቴን በሙሉ አደጋ ላይ ይወድቃል					

በጉልምስና እድሜ ክልል የሚገኙ ሴት ተማሪዎች ሂዉማን ፓፒሎማ ቫይረስ ክትትባት ጠቀሜታዎች በሚመለከት በመጅመሪያ ደረጃ የግል እና የመንግስት ት/ቤት በባህር ዳር ከተማ አስተዳደር ፣ኤትዮጵያ 2014

	መጠይቅ	በፍፁም አልስማማም (1)	አልስማማም (2)	አልወሰንኩም (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
041	የሂማን ፓፒሎማ ክትባት ከተከተብሁ ስለ ማህጸን በር ካንስር ብዙም አልጨነቅም					
042	ክትባቶችን መከተብ የማኅጸን በር ካንስር በሽታ ለመከላከል ይረዳኛል					
043	የ ሂማን ፓፒሎማ ቫይረስ ክትባት ከተከተብሁ የማኅጸን በር ሕክምና ያን ያህል					

	ላያሰጋኝ ይችላል።					
044	የ ፓፒሎማ ቫይረስ ክትባት መከተብ ሂዉማን ፓፒሎማ ቫይረስ እና የማኅጸን በር ካንስር ለመከላከል ከሁሉ የተሻለው ዘዴ ነዉ።					
045	የ ሂዉማን ፓፒሎማ ክትባት መከተብ በማኅጸን በር ነቀርሳ የመሞት እድልን ያስቀራል።					

በጉልምስና እድሜ ክልል የሚገኙ ሴት ተማሪዎች ሂዉማን ፓፒሎማ ቫይረስ ክተትባት እንዳይከተቡ የሚያደርጉ ምክንያቶችን በሚመለከት በመጅመሪያ ደረጃ የግል እና የመንግስት ት/ቤት በባህር ዳር ከተማ አስተዳደር ፣ኤትዮጵያ 2014

	መጠይቅ	በፍፁም አልስማማም (1)	አልስማማም (2)	አልወሰንኩም (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
046	የ ሂዉማን ፓፒሎማ ቫይረስ ክትባቱን ለመከተብ ያስፈራል ምክንያቱም ቫይረሱ በሴቶች ሊኖር ይችላል					
047	የ ሂማን ፓፒሎማ ቫይረስ ክትባቱን ለመከተብ ሳስብ ሁለቱ መከተብ እፈራለሁ					
048	የሂዉማን ፓፒሎማ ክትባትን ለመከተብ የት መሄድ እንዳለብኝ አላውቅም					
049	የ ሂዉማን ፓፒሎማ ቫይረስ በግብረ-ስጋ ግንኙነት					

	የሚተላለፍ በመሆኑ ክትባቱን ለመከተብ እፈራለሁ፡፡					
050	የ የሂዉማን ፓፒሎማ ክትባትን ለመከተብ ረጅም የቀጠሮ ጊዜ ይወስዳል					
051	የ ሂዉማን ፓፒሎማ ክትባት ለመከተብ መረፊ መወጋት የ ህመም ስሜት አለዉ.					
052	የ ሂዉማን ፓፒሎማ ክትባት ለመከተብ ገንዘብ ያስከፍላል.					
053	የሂዉማን ፓፒሎማ ቫይረስ ለመከተብ ከባድ የጎንዮሽ ጉዳት					

	ሊያስከትል ይችላል					
054	የ ሂዉማን ፓፒሎማ ክትባትን በየትኛዉ የእድሜ ክልል እንደሚሰጥ አላዉቅም					
055	የ ሂዉማን ፓፒሎማ ክትባቱን ለመከተብ እፈራለሁ ምክንያቱም ስለ ክትባት ውጤታማነት እጠራጠራለሁ					
056	የፓፒሎማ ክትባቱን ለመከተብ እፈራለሁ ምክንያቱም የክትባቱ ደህንነት ያሰጋኛል					
057	የፓፒሎማ ክትባት ቀደም					

	ብዬ መከተቤን አላስታወስም					

በጉልምስና እድሜ ክልል የሚገኙ ሴት ተማሪዎች ሂወማን ፓፒሎማ ቫይረስ ክተትባትን ለመከተብ ምልክቶች በሚመለከት በመጅመሪያ ደረጃ የግል እና የመንግስት ት/ቤት በባህር ዳር ከተማ አስተዳደር ፣ኤትዮጵያ 2014

	ዝርዝር መጠይቆች	በፍፁም አልስማማም (1)	አልስማማም (2)	አልወሰንኩም (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
058	የፓፒሎማ ክትባት ለመከተብ የጤና ባለሙያ አማክራለሁ					
059	አንድ ሰው ከእኔ ጋር የግብረ ሥጋ ግንኙነት በፈጸመ ሰዓት ኮንዶም ጥቅም ላይ መዋሉን አረጋግጣለሁ					
060	በጉርምስና ዕድሜ ላይ የሚገኙ የጤና ፕሮግራሞችን ለመሳተፍ ብዙ ጊዜ ጥረት አደርጋለሁ					
061	የፓፒሎማ ቫይረስ ተዛማጅ መረጃ እከታተላለሁ።					
062	ፓፒሎማ ቫይረስ ክትባት ጋር የተያያዘ መረጃዎችን እከታተላለሁ					

063	ጓደኞቼ የፓፒሎማ ክትባት እንድወስድ ሐሳብ አጋርተውኛል።					
064	ወላጆቼ የፓፒሎማ ክትባት እንድወስድ ሐሳብ አቅርበውልኛል					
065	የጤና ባለሙያዎች የሂዉማን ፓፒሎማ ክትባት እንድወስድ መክረዉኛል					
066	በመገናኛ ብዙሀን ክትባቱ እንደሚሰጥ ሰምቻለሁ					

በጉልምስና እድሜ ክልል የሚገኙ ሴት ተማሪዎች ሂዉማን ፓፒሎማ ቫይረስ ክተትባትን ለመከተብ ዉጤታማነት በመጅመሪያ ደረጃ የግል እና የመንግስት ት/ቤት በባህር ዳር ከተማ አስተዳደር ፣ኤትዮጵያ 2014

	ዝርዝር መጠይቆች	በፍፁም አልስማማም (1)	አልስማማም (2)	አልወሰንኩም (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
067	የ ሂዉማን ፓፒሎማ ክትባትን ለመከተብ መንገዣ መጠቀም እችላለሁ					
068	የ ሂዉማን ፓፒሎማ ቫይረስ ክትባት ለመከተብ ሁኔታዎችን ማመቻቸት እችላለሁ።					
069	ስጋቶቼን በተመለከተ የጤና ባለሙያ ማነጋገር እችላለሁ					

070	ጭንቀቱ ክትባት ለመከተብ አያግደኝም					
071	ምን እንደሚፈጠር መተንበይ ባልችልም የሂዉማን ፓፒሎማ ክትባቱን ለመከተብ አያዳግተኝም					
072	ለየሂዉማን ፓፒሎማ ክትባትን ክፍያ ቢጠይቅ እንኳ መከተብ እችላለሁ።					
073	ለ የሂዉማን ፓፒሎማ ክትባት በቀጠሮ መከተብ እችላለሁ.					
074	እኔ በእርግጥ ከፈለግኩ የሂዉማን ፓፒሎማ ክትባትን መከተብ እንደምችል አውቃለሁ					
075	የ የሂዉማን ፓፒሎማ ክትባትን እንዴት መከተብ እንዳለብኝ አውቃለሁ።					
076	የሂዉምን ፓፒሎማ ቫይረስ ክትባት የት ማግኘት እንዳለብኝ አዉቃለሁ					
077	እኔ 14 ዓመት ሲሞላ ሁሉንም ባላገኝም እንኳ የየሂዉማን ፓፒሎማ ክትባትን ክትባቱን መከተብ እችላለሁ					
078	ዕድሜዬ 14 ወይም ከዚያ በታች ከሆነ የሂዉማን ፓፒሎማ ክትባትን ክትባቱን ማግኘት እችላለሁ					

079 በሚቀጥሉት 12 ወራት ጊዜ ውስጥ የፓፒሎማ ቫይረስ ክትባትን ለመከተብ ፈቃደኛ ነሽ?

1. አዎ
2. አይደለም መልስዎ አይደለም ከሆነ ምክንያቱን ይግለፀ----------

Declaration form

Declaration

I, the under signed, declared that this is my original work, has never been presented in this or any other University, and that all the resources and materials used for the research, have been fully acknowledged.

Principal investigator

Name: Birhanu Feleke_____

Signature: _____

APPROVAL SHEET

Submitted by:

Birhanu Feleke _____ 26/08/2014

Name of student Signature Date

Approved by:

1. _____ _____ _____
   Name of Advisor Signature Date
2. Desta Dessalegne _____ 26/08/2014
   Name of Advisor Signature Date

3. _____ _____ _____
   Name of Evaluator Signature Date

4. Gebeyehu Tsegaw _____ April 04/2022
   Name of Evaluator Signature Date

Hall