Knowledge, Attitude and Practice towards Human Papillomavirus Vaccine and Associated Factors among Parents of Daughter in Nekemte town, West Ethiopia

By

Tadesse Teshome (BSc)

A Thesis Submitted to Jimma University, Institute of Health, Department of Epidemiology; in Partial Fulfillment for the Requirements of Masters of public Health in Field Epidemiology

August, 2022

Jimma, Ethiopia

Knowledge, Attitude and Practice towards Human Papillomavirus Vaccine and Associated Factors among Parents of Daughter in Nekemte town, West Ethiopia

By

Tadesse Teshome (BSc, Field Epidemiology Resident)

Advisors:

1. Dr.Sahilu Assegied (MD, MPHE, Associate Professor)

2. Mrs.Yenealem Gezaheagn (BSc, MPH in Epidemiology)

August, 2022

Jimma, Ethiopia

Abstract

Background: - In Ethiopia, the human papillomavirus (HPV) vaccine has been introduced since 2018. The vaccination program targets girls age 9-14 years; the success of vaccination depends on the parental decision to vaccinate their daughters. However most of the parents not want HPV vaccination for their daughters as they not have sufficient knowledge and unfavorable attitude towards the HPV vaccine. Therefore, this study aimed to assess the level of knowledge, attitude and practice towards HPV vaccine and associated factors among parents of daughter in Nekemte town, West Ethiopia, 2022

Method: -Community-based cross-sectional study was conducted among 561 parents of daughter and selected by simple random sampling technique from January 5-February 28, 2022. The data were collected by using face-to-face interview administration and entered into Epi data version 3.1 then, exported to SPSS version 25 for analysis. Descriptive statistics were used to describe the variable of the study. Bivariable and multivariable binary logistic regression analyses were used to examine the association. The Odds Ratio (OR), 95% CI, and p-values less than 0.05 were used to determine the statistical association.

Results: A total of 561 study participants with a response rate of 97% were included in the study. Among participants in this study, 267(47.5%) have good knowledge, 285(50.8%) have favorable attitude towards HPV vaccine and 268(47.8%) got their daughters vaccinated. Favorable attitude towards HPV vaccine (AOR=3.868, 95% CI= 2.31, 6.4) was associated with the knowledge of parents. Attitude of parents towards HPV vaccine was affected by good knowledge about HPV vaccine (AOR=2.81,95% CI1.78,4.45). Being government employee (AOR = 2.67, 95% CI=1.21, 5.89), higher monthly income (AOR = 4.93, 95% CI= 2.19, 11.08), good knowledge on HPV (AOR = 1.78, 95% CI= 1.1, 2.8) and favorable attitude towards the vaccine (AOR = 2.71, 95% CI=1.64, 4.48) were significantly associated with the practice of HPV vaccine

Conclusions: The knowledge, attitude and practice of parents towards the HPV vaccine were low. Good knowledge on HPV and positive attitude towards the vaccine were associated with practice of HPV vaccine. Therefore, it is necessary to educate the community members on HPV and HPV vaccine as HPV vaccination is the most effective way to prevent cervical cancer and its related diseases.

Key Words: Cervical cancer, parents, knowledge, attitude, HPV vaccine, Nekemte.

Acknowledgement

First my deepest gratitude and appreciation goes to my advisor, Dr.Sahilu Assegied (MD, MPHE, and Associate Professor) for his invaluable and unreserved guidance and constructive comments, suggestion and help throughout the development of this thesis. My heartfelt sincere gratitude also goes to my advisor Mrs.Yenealem Gezahagn for her irreplaceable guidance and constructive comments through development of this document.

I would also like to extend my appreciation to the study participants, supervisors, and data collectors for their active participation.

I would like to express my sincerely thanks to Jimma University, Institute of Health , Department of Epidemiology for giving me this chance.

Contents

Topic **Page number**

Abstract I

Acknowledgement II

Contents III

List of table VI

List of figures VII

Chapter One: Introduction 1

1.1. Background 1

1.2. Statement of the problem 3

Chapter Two: Literature Review 5

2.1. Burden of HPV Infection ..... **Error! Bookmark not defined.**

2.2. Awareness and source of information ..... **Error! Bookmark not defined.**

2.3. Knowledge of HPV vaccine 5

2.4. Attitude towards HPV vaccination 6

2.5. Vaccination Practice 6

2.6. Factors associated with vaccination practice 8

Conceptual framework of the study 10

Significance of the study 4

Chapter Three: Objectives 11

3.1. General objective 11

3.2. Specific objective 11

Chapter Four: Materials and Methods 12

4.1. Study Area and Period 12

4.2. Study Design 12

4.3. Population.....**Error! Bookmark not defined.**
4.4. Eligibility criteria 13
Inclusion criteria 13
Exclusion criteria 13
4.5. Sampling unit .....**Error! Bookmark not defined.**
4.6. Sample Size Determination 13
4.7. Sampling Technique.....**Error! Bookmark not defined.**
4.8. Sampling Procedure 15
4.9. Variables..... 17
4.9.1. Dependent Variables.....**Error! Bookmark not defined.**
4.9.2. Independent Variables .....**Error! Bookmark not defined.**
4.9.3. Operational definitions 17
4.10. Data Collection instrument.....**Error! Bookmark not defined.**
4.11. Personnel for data collection .....**Error! Bookmark not defined.**
4.12. Data collection procedure.....**Error! Bookmark not defined.**
4.13. Data quality management 17
4.14. Data processing and Analysis..... 18
4.15. Ethical considerations..... 18
4.16. Plan for Dissemination of the Study..... 19
Chapter Five: Result 20
5.1. Socio-Demographic Characteristics of the Respondents 20
5.2. Knowledge about Human Papilloma Virus & HPV Vaccine 21
5.3. Attitude towards HPV vaccine..... 24
5.4. Practice of HPV Vaccination for Their Daughters..... 25
5.5. Factors Associated with Practice of HPV Vaccination for Their Daughters 32

Chapter Six: Discussion 37
Chapter Seven: Conclusion and recommendation 42
6.1. Conclusion 42
6.2. Recommendation 42
References 44
Annexes 51
Annex 1: Participant information sheet 51
Annex 2: English version participant consent form 53
Annex 3: Data collection tool 53
ቅጥያ 1 59
ቅጥያ 1 የተሳታፊዎች መረጃ 59
ቅጥያ 2 ፡ የተሳታፍ ፍቃድ ቅጽ 60

List of tables

Tables Page

Table 1: Sample size for factors associated with HPV vaccination among parents of daughter in Nekemte town, Oromia Region, West Ethiopia 2022..... 14
Table 2: A table showing list of kebeles by proportionally sampled households Nekemte town, West Ethiopia, 2022.....**Error! Bookmark not defined.**
Table 3: Distribution of practice to vaccinate according to socio-demographic characteristics, knowledge and attitude of participants in Nekemte town, West Ethiopia, 2022..... 20
Table 4: Knowledge of cervical cancer and HPV and HPV vaccine among parents of daughter in Nekemte town, West Ethiopia, 2022 22
Table 5: Attitude towards HPV vaccine among parents of daughter in Nekemte town, West Ethiopia 2022..... 24
Table 6: Vaccination practice of parents of daughter in Nekemte town, West Ethiopia, 2022.... 25
Table 7: Bivariable analysis of factors associated with knowledge about HPV vaccine among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 27
Table 8: Multivariable analysis of factors associated with knowledge about HPV vaccine among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 29
Table 9: Bivariable Analysis of Factors Associated with Attitude towards HPV Vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 30
Table 10: Multivariable Analysis of Factors Associated with Attitude towards HPV Vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 32
Table 11: Bivariable analysis of factors associated with practice of HPV vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 (n=561) 33
Table 12: Multi-variable Analysis of Factors Associated with practice of HPV Vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 (n=561)..... 35

List of figures

Figures

Page

Figure 1: Schematic presentation of conceptual Framework 10
Figure 2: Administration map of East wollega zone and Nekemte town (Developed by Arc GIS) 12
Figure 3: Schematic presentation of the sampling procedure of this study 16
Figure 4: Source of information about human papillomavirus vaccine among parents of daughter aged 14 Years in Nekemte Town, 2022 22
Figure 5: Reason for vaccination against human papillomavirus among parents of daughter in Nekemte town, 2022 26
Figure 6: Reasons for not getting the human papillomavirus vaccine among parents of daughter in Nekemte town, 2022 27

Abbreviations and Acronyms

AOR	Adjusted Odd Ratio
CC	Cervical cancer
CI	Confidence Interval
COR	Crude Odd Ratio
FDA	Food and Drug Administration
GAVI	Global Alliance for Vaccine and Immunization
GC	Gregorian calendar
HH	House Hold
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
KAP	Knowledge Attitude Practice
LMICs	Low and Middle-Income Countries
NIPs	National Immunization Program
OR	Odd Ratio
SPSS	Statistical package for social studies
STD	Sexually Transmitted Disease
USA	United State of America
VIA	Visual Inspection with Acetic acid
VIF	Variance Inflation Factor
WHO	World Health Organization

Chapter One: Introduction

1.1. Background

Human papilloma virus (HPV) is a group of viruses that are very common worldwide(1). Nearly all cases of cervical cancer are caused by infection with high-risk types of HPV(2). There are more than 100 types of HPV, of which at least 14 are cancer-causing (also known as high risk type). According to the International Agency for Research on Cancer, high-risk HPV genotypes including 16, 18, 31, 33, 45, 52, and 58 are responsible for around 90% of anogenital HPV-positive cancers worldwide(3).

HPV is mainly transmitted through sexual contact and most people are infected with HPV shortly after the onset of sexual activity. Two types of HPV (16 and 18) cause 70% of cervical cancers and pre-cancerous cervical lesions. The virus also has been linked to cancers of the vagina, vulva, anus, penis, and throat(4).

Every year, about 569,847 cervical cancer cases are diagnosed with 311,365 deaths from the disease annually(5).Sub-Saharan African countries account 22% of all cases in the globe. In Eastern Africa, cervical cancer is estimated to be 42.7 cases per 100,000 women and cervical cancer causes death of 35 per 100,000 women(6).A study in Ethiopia showed that annually the number of new cases was 7619 with 6081 deaths every year. In addition, 534,000 women over age 15 living with HIV in Ethiopia are among the most vulnerable to cervical cancer(7).

Majority of the cervical cancer cases are potentially preventable(8). The World Health Organization (WHO) recognizes the prevention of cervical cancer as priority and recommends that member states introduce the HPV vaccine into their national immunization programs (NIPs). The schedule recommended by WHO is two doses of the HPV vaccine, administered 6 months apart and prioritizing adolescent girls between the ages of 9 and 14 years, prior to sexual debut(9). Ethiopia launched the HPV vaccine for the first time with the support of the Global Alliance for Vaccine and Immunization (GAVI) in 2018. The vaccine is currently being delivered primarily through a school-based approach to reach all eligible girls(10).

Currently, three types of HPV vaccines (Cervarix, Gardasil and Gardasil 9) are available for preventing HPV infections. Gardasil prevents four strains of HPV (6, 11, 16, and 18). Cervarix is effective against two strains (16 and 18) and Gardasil 9 is effective against nine strains of HPV (6, 11, 16, 18, 31, 33, 45, 52, and 58)(11).

Human papillomavirus vaccination provides an opportunity to low-resource settings to reduce the burden of CC, thus benefits of the vaccine are restricted to the minority of women who have not been infected yet(8).

Since most HPV vaccination programs target mainly young adolescents, parents have the authority to take most decisions about vaccination. Therefore, the success of HPV vaccination programs will largely depend on parental decision-making(3).

There are apparent limitations and public health challenges in attempting to implement HPV vaccination programs((12–16).Parental knowledge, attitude, intent, and practice of HPV vaccination for their daughters have become pertinent for the success of the preventive program. Parents' knowledge and attitude about HPV vaccine have been found to a strong predictor and important facilitator for adolescent uptake of the vaccine(17–19).

1.2. Statement of the problem

Globally, cervical cancer is the fourth most frequently diagnosed cancer and the fourth leading cause of cancer-related deaths in women, with an estimated 604,000 new cases and 342,000 deaths worldwide in 2020. According to the 2020 international agency for research on cancer report, 12.4 and 5.2 per 100,000 women died due to cervical cancer in developed and developing countries, respectively(20).

Efforts to prevent HPV infection, including HPV vaccination, are an important part of prevention strategies to potentially reduce the risk of cervical cancer(21).The reduction in cervical cancer that can be expected due to HPV vaccination depends largely on the level of HPV vaccine uptake(22).Uptake of the vaccine determines the success of the prophylactic vaccination programmes; 80% coverage is needed to reduce the cancer burden associated with HPV. According to WHO, the vaccine is available in 74 countries, however there is less than 50% coverage; 31% in Europe, 35.6% in North America, 1.1-1.2% in Africa and Asia(3).

Parental knowledge, attitude, intent, and acceptance of HPV vaccination for their daughters have become pertinent for the success of the preventive program(23).

Lack of parental awareness can result in vaccine refusal and as a result, adolescent girls have expressed their reluctance to vaccinate without parental consent. Parents of adolescent girls need to be aware of HPV, how it is transmitted, and the efficacy of the HPV vaccine in preventing CC(1). Though knowledge and attitude about HPV vaccination is an essential factor for the success of the vaccination program to prevent CC; most of the parents did not want HPV vaccination for their daughters as they did not have sufficient knowledge and negative attitude about the HPV vaccine(24).

Since HPV vaccination is a new program in Ethiopia, there are only few studies conducted on the knowledge and attitude of HPV vaccine. In a study conducted in Gondar (North-west Ethiopia), 81.3% accepted to vaccinate their daughters for HPV(25). Another study in Bench-Sheko zone, south-west Ethiopia, reported that 79.5% of parents have accepted to vaccinate their daughters for HPV(26). Both studies revealed that parental acceptance to vaccinate their daughters is affected by the knowledge and attitude of the parents. Adequate understanding of the level of knowledge, attitude and practice of parents who have eligible daughters for the HPV vaccine and associated factors could be considered as a prerequisite for the effective vaccination program and the implementation of a sound and accepted primary prevention program of CC.

Therefore, this study aimed to find out the level of knowledge, attitude and practice towards the human papillomavirus vaccine and associated factors among parents of daughter in Nekemte town, West Ethiopia, 2022.

Significance of the study

The result of this study will help to improve and raise parents knowledge about HPV vaccine by providing accurate information about the vaccine that helps them to have good information and attitudes about HPV vaccine as a result they allow their daughters to vaccinated.

The finding will help in identifying areas that need an emphasis on preventing cervical cancer by addressing areas that need improvement.

Besides, the study will give insight and serve as baseline data for researchers and planning of another intervention plan like; health education and promotion regarding HPV vaccine activities.

Chapter Two: Literature Review

.

2.1. Knowledge of HPV vaccine

A systematic literature review of studies conducted in European countries, revealed that 64.4% of parents (range 1.7% to 99.3%) knew about HPV infection(33).A study conducted in China showed that among parents of daughters of the 1109 respondents, 320(28.85%) had ever heard of it. Among this subgroup of 320 women who had heard of the virus, 23.75% (76/320) knew that HPV infection is asymptomatic, 49.38% (158/320) knew that HPV infection is an sexually transmitted disease(STD), 47.81% (153/320) knew that HPV causes abnormal Pap test results, and 28.75% (92/320) knew that HPV is different from HIV(22).

In another survey reported conducted in China in 2015 it was revealed that 14.75% mothers were classified as having no knowledge related to HPV/HPV vaccine,58.69% had low knowledge, and 26.56% had high knowledge(34).A cross-sectional study in Argentina showed that among parents of daughters Of the 341 respondents,307(88.9%) had knowledge about HPV virus(35). A cross sectional study conducted in Nigeria show that, 34.5% and 65.5% parents of adolescents had good and poor knowledge of HPV and its vaccination respectively(36). In another survey conducted in Nigeria in 2020 it was revealed that (54.7%) also had poor knowledge of HPV vaccine, whereas 26.7% had good knowledge(37).

A cross sectional study conducted in Ethiopia show that, 41.6%,37.3% and 21.1% parents of daughter had poor, moderate and good knowledge of HPV and its vaccination respectively(25).

Similarly, a study done among parents of daughter in Addis Ababa, the capital city of Ethiopia showed that among parents of daughter aged 9-17 years, 26.9% and 60.1% had good knowledge on HPV and its vaccine respectively(38). In another survey conducted on parental willingness to vaccinate HPV vaccine to prevent cervical cancer in Bench Sheko zone, Ethiopia show that 71.7% of parents had good knowledge on HPV and its vaccine(26). A population-based survey on Knowledge and willingness of parents towards child girl HPV vaccination in Debre Tabor Town, Ethiopia reported that 35.1% of parents had good knowledge about the human papillomavirus vaccine and cervical cancer(39).

2.2. Attitude towards HPV vaccination

A study in Poland reported, 90.2% parents of adolescents had positive attitudes towards HPV vaccination(23). A cross sectional study conducted in Indonesia show that 99.2% parents of adolescents had positive attitudes towards HPV vaccination(40).

A study in Japan(2012) by Sharon J.B et.al(41) reported 93% parents of adolescents had positive attitudes towards HPV vaccination. A study in Israel show that 62% and 38% parents of adolescents had positive and negative attitudes towards HPV vaccination respectively(42).A cross sectional study conducted in Nigeria show that, 85.5% and 14.5% parents of adolescents had positive and negative attitudes towards HPV vaccination respectively(43).A study in Kenya (2021) by Hillary Mabeya et.al reported 90.6% parents of daughter had positive attitudes towards HPV vaccination(44). A study in Ethiopia show that 9.2% ,30.9% and 59.9% parents of daughter had negative, neutral and positive attitudes towards HPV vaccination respectively(25).

A community-based study conducted among parents of daughters in Addis Ababa town, Ethiopia Showed that 63.5% had a positive attitude towards the HPV vaccine(38). In another survey conducted on parental willingness to vaccinate HPV vaccine to prevent cervical cancer in Bench Sheko zone, Ethiopia showed that 69.3% had a positive attitude towards the HPV vaccine(26).

2.3. Vaccination Practice

A study conducted in Canada showed that among parents of daughters of the 774 respondents, 683(88.2%) reported their daughter having received the HPV vaccine(45). In another survey conducted in USA in September 2007 and January 2008 it was revealed that 19% had already vaccinated their daughter(s)(46).A cross sectional study conducted in Italy show that, 53.7% of the eligible parents reported that their daughters had been vaccinated against HPV(47).

A Systematic review and meta-analysis studies conducted in Canada, show that the pooled proportion of parents' uptake of HPV vaccines for their children was 41.5%(46).

A cross sectional study conducted in Brazil showed that 33.9% parents of daughter reported their daughter vaccinated against HPV, 49.2% did not have their daughter vaccinated, and 16.9% did not know whether their daughter had been vaccinated or not(48). A cross sectional study conducted in India revealed 64% of the respondents were not using the HPV vaccination because they did not know about the vaccination. 9% of the respondents said that the vaccine is too costly and there was a myth among the respondents that HPV causes cancer too late(1).

A study conducted in Nigeria reported 4.0% of the parents who were aware of HPV vaccination for cervical cancer prevention actually had their daughters vaccinated, 96.0% had not vaccinated their daughters. Of those who actually did have their daughters vaccinated, 75.0% vaccinated their daughter because they were following the doctor's request. Only 1 parent (25.0%) voluntarily had their daughter vaccinated. Not being aware of how to get their daughter vaccinated (41.7%), the vaccine not being available (11.5%), the high cost of the vaccine (17.7%) and being unsure of the safety of the vaccine (11.5%) were the reasons given for not having their daughters vaccinated. Some parents (17.7%) had no reason at all for not vaccinating their daughters(49). In another survey conducted in Nigeria revealed that 91.9% of the parents responded that their girls have not been immunized with HPV vaccine. Of the 9 respondents (1.9%) whose children have been immunized(36).A cross sectional study conducted in Kenya showed that among parents of daughters of the 300 respondents, only 28(9%) of them had actually had their daughters vaccinated(44).

A study in South Florida reported 45% of parents/caregivers had vaccinated their child with the HPV vaccine and 80% of the participants had low or no knowledge of HPV vaccination(50).In another survey conducted in Texas show that 87.1% of parents reported HPV initiation and 57.9% completion. Among respondents who received recommendations for the HPV vaccine, the highest percentage of recommendations the HPV vaccine, the highest percentage of recommendations years old (52.3%) compared to those aged ≤10 and ≥15. According to respondents who did not vaccinate their child, the two main reasons for their child not receiving the HPV vaccine were no recommendation from the child's doctor (34.8%) and their child was too young (30.4%)(51).

A cross sectional study conducted in British showed that among parents of daughters of the 2025 respondents, 1318(65%) of them had actually had their daughters vaccinated. Parents were asked to list both a main (single) reason and any reason for their vaccine choice. The main reasons for having a daughter receive the HPV vaccine were the effectiveness of the vaccine (48.0%), advice from a physician (8.7%), and concerns about their daughter's health (8.3%) The main reasons for not having a daughter receive the HPV vaccine were concerns about HPV vaccine safety (30.0%), preference to wait until the daughter is older (15.8%), and not enough information to make an informed decision (12.5%)(16).

2.4. Factors Associated with Knowledge about the HPV Vaccine

Community based survey conducted in Madrid revealed that parents age, educational status and number of daughter in the family were significantly associated with knowledge of the human papilloma virus (HPV) vaccine(52). A study was done on Knowledge and willingness of parents towards child girl HPV vaccination in Debre Tabor Town, Ethiopia show that parents' occupation was significantly associated with knowledge of the human papilloma virus (HPV) vaccine(39).In another survey conducted in Debre Markos town, Ethiopia reported that parents educational status, source of information and attitude were significantly associated with knowledge of the human papilloma virus (HPV) vaccine(53).

2.5. Factors Associated with Attitude towards HPV Vaccine

In Nigeria, a study conducted on Knowledge and attitudes of parents towards human papilloma virus (HPV) vaccines revealed that level of education, house hold income, religion and knowledge were the major factor in parent's attitude towards HPV vaccine(43).A cross sectional study conducted in Debre Markos town, Ethiopia show that source of information and knowledge of parents were significantly associated with attitude of the human papilloma virus (HPV) vaccine.

2.6. Factors associated with vaccination practice

2.6.1. Socio demographic related factors

A study was done on acceptability of HPV vaccine among parents of daughters in Valencia reported that age, marital status, being government employ and monthly household income were associated with vaccination of their daughter(54). Another study conducted on factors associated with parent's practice to vaccinate against HPV in Spain show that care giver age, educational status and house hold monthly income were significant factors to vaccinate their daughter(55).

A study conducted in Norway reported the likelihood of vaccination decreased with increasing maternal age, increased with increasing maternal income, HPV vaccine initiation was lower among girls with mothers who were outside the workforce compared to girls with mothers who were currently employed, Compared with a two-child household, mothers with four or more children, as well as mothers with a single child were somewhat less likely to have their daughters initiate HPV vaccination(56).

2.6.2. Knowledge related factor

A cross sectional study conducted in Canada revealed that parents who had good knowledge about cervical cancer and its risk factors were more likely to vaccinate their daughter than those with poor knowledge(57).A study conducted in Spain reported parents who had good knowledge on HPV and its vaccine were more likely vaccinated their daughter than those with poor knowledge(55). A study conducted on factors associated with the human papillomavirus (HPV) vaccination across three countries following vaccination introduction reported, the strongest factor associated with vaccination status across all countries was parental HPV knowledge, Parents with higher HPV vaccination knowledge more likely to have vaccinated their daughters(58).

2.6.3. Attitude related factor

A cross sectional study conducted in Italy showed that Parental positive attitude towards HPV vaccine was significantly associated with parental practice to vaccinate their daughter(47).

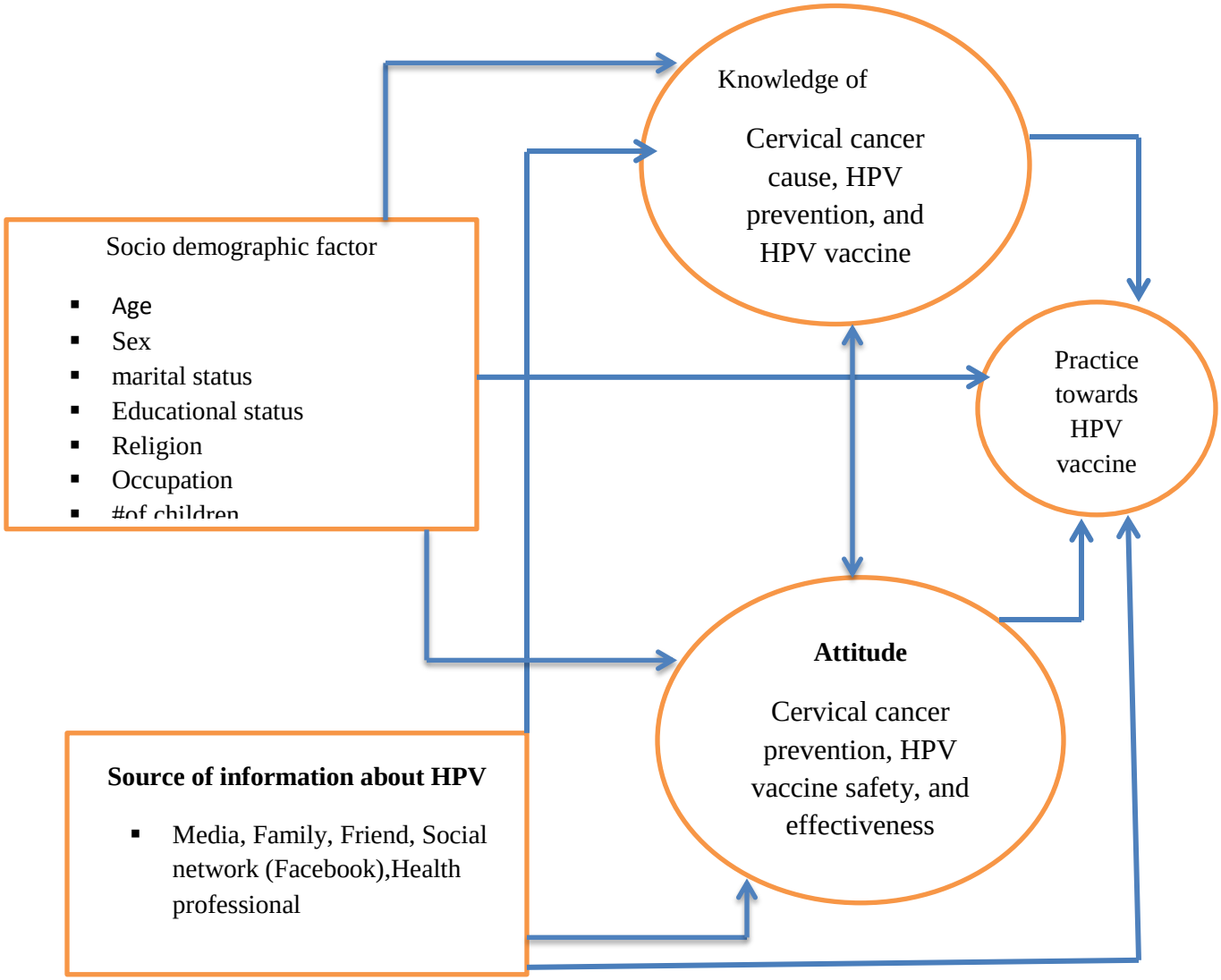
A study was done on Parents' decision-making about the human papillomavirus vaccine for their daughters in Canada reported that vaccination practice of women with positive attitudinal response to HPV vaccination was significantly higher than those with negative attitude towards HPV vaccine(57).

A cross sectional study conducted in USA revealed that mothers who perceived that their daughters were at high risk of acquiring HPV or developing genital warts were more likely to have had them vaccinated compared with mothers who perceived that their daughter's risk was low(51). A cross sectional study conducted in Kenya showed that Parental positive attitude towards HPV vaccine was significantly associated with parental practice to vaccinate their daughter(44).

2.6.4. Information source related factor

A cross sectional study conducted in USA reported strongest association with vaccination was having received a vaccine recommendation from their child's health care provider. Women who reported prior HPV infection were almost twice as likely to report their child had initiated the vaccine series compared with mothers who did not report prior HPV infection. Mothers who had received information from a health education class or seen an advertisement about the HPV vaccine or read a brochure about HPV were also more likely to report their child had initiated HPV vaccination(51).

Conceptual framework of the study



Key: → Association was assessed in this study

Figure 1: Schematic presentation of conceptual Framework on factors associated with KAP towards HPV vaccine (22,25,36,40,59–65)

Chapter Three: Objectives

3.1. General objective

To assess the level of knowledge, attitude and practice towards human papillomavirus vaccine and associated factors among parents of daughter in Nekemte town, West Ethiopia, 2022

3.2. Specific objective

3.2.1 To determine the level of knowledge towards HPV vaccine among parents of daughter in Nekemte town ,West Ethiopia, 2022

3.2.2 To determine the level of attitude towards HPV vaccine among parents of daughters in Nekemte town, West Ethiopia, 2022

3.2.3 To determine the level of practice to Vaccinate their daughter against human papillomavirus Vaccine among parents of daughter in Nekemte town ,West Ethiopia, 2022

3.2.4 To identify factors associated with knowledge, attitude and practice towards HPV vaccine among parents of daughter in Nekemte town, West Ethiopia,2022

Chapter Four: Method and Materials

4.1. Study Area and Period

The study was conducted in Nekemte town from January 5-February 28, 2022.Nekemte town is found in Oromia regional state in the western part of Ethiopia at a distance of 328km far from Addis Ababa. Administratively it is divided into seven kebeles.The town has two hospitals, two health centers, 26 small clinics, 18 medium clinics are giving service in the town. Based on the 2007 Census conducted by the Central Statistical Agency, the forecasted total population 2022 was 135,856 of whom 69286are male and 66570 female(66). Nekemte town has a total area of 5480 hectar. The altitude of the town is 1960 up to 2170 meters above sea level.

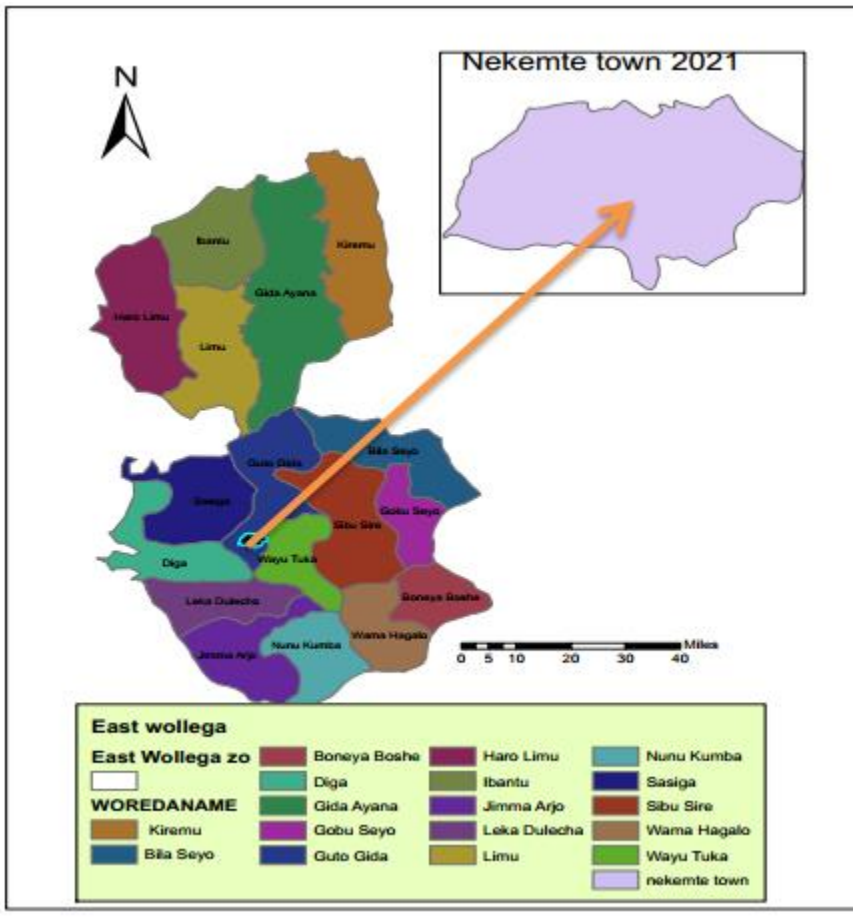


Figure 2: Administration map of East wollega zone and Nekemte town (Developed by Arc GIS)

4.2. Study Design

Community-based cross-sectional study was conducted.

4.3. Source population

All parents who had daughters aged 14 years old living in Nekemte town.

4.4. Study population

All randomly selected parents who had daughters aged 14 years old in Nekemte town during data collection time.

4.5. Eligibility criteria

Inclusion criteria

Parents who had daughters aged 14 years old and permanently residing in the study area (more than 6 months) were included in the study.

Exclusion criteria

Those participants who were severely ill and who were not around during the data collection time after three separate visits were excluded from the study.

4.6. Sample Size Determination

The sample size was calculated for each objective separately and the largest sample size was obtained to be the final sample size.

The sample size was calculated by using a single population proportion formula assuming 95% confidence level, 5% margin of error (d).

Objective 1: The study conducted in Debre Tabor town, the Northwest Ethiopia shows that 35.4% of parents had good knowledge about HPV(38).

$$\mathbf{n = \frac{\left(z_{\alpha/2}\right)^2 p(1-P)}{d^2}}$$

$$\mathbf{n = \frac{(1.96)^2 0.354(1-0.354)}{0.05^2} = 351}$$

Objective 2: The study conducted in Debre Markos town Ethiopia shows that 77.4% of parents had positive attitude towards HPV vaccine(25).

Where n is the minimum sample size, $Z_{\alpha/2}$ is the standard score value for 95 % confidence level, P is the percentage of positive attitude towards HPV vaccine ,D is a margin of error (5%)

$$\mathbf{n} = \frac{(\mathbf{1.96})^{\mathbf{2}}\mathbf{0.77}(\mathbf{1}-\mathbf{0.77})}{\mathbf{0.05^2}} = \mathbf{272}$$

Objective 3: sample size for the third objective was determined by using Epi Info 7, by taking variables that have significant association with KAP towards HPV vaccine in different studies and considering the assumptions as indicated in the following table.

Table 1: Sample size for factors associated with KAP towards HPV vaccine among parents of daughter in Nekemte town, Oromia Region, West Ethiopia 2022

s.n	variable	Assumptions					Sample size	References
		Confidence level (%)	Power (%)	Ratio (Unexposed: Exposed)	% outcome in unexposed group	AOR		
1	Parental educational level diploma was significantly associated with the knowledge of HPV vaccine	95	80	1	8.6	3.54	186	(53)
2	Parental knowledge on HPV vaccine was significantly associated with attitude toward HPV vaccine	95	80	1	17	2.7	196	(53)

The maximum sample size from the calculated for objective one to three above was 351.

On the other hand, we used at least two stages down in the sampling process to reach to the final sampling unit. As a result, we used a design effect of 1.5 to multiply our sample size to minimize the variability and detect the effect observed regarding KAP towards HPV vaccine.
Multiplied by a design effect of 1.5 and by adding a 10% for non-response , the final sample size for this particular study is 580.

4.7. Sampling technique and procedure

Firstly, all the kebeles found in the town were listed in a frame. Then three out of the seven kebeles were selected by the lottery method. Then, a census was conducted in all selected kebeles to identify parents who fulfilled the inclusion criteria (parents of girls aged 14 years). An identification number was given after a house-to-house visit. Then, sampling frame was prepared using these unique identification numbers given to the Households. Then, a proportional-to size allocation technique was employed to determine the study participants from each kebele. Finally, sample units were selected using a simple random sampling technique (using computer generated random number method) until the allocated sample size was reached (Figure 3). If there was more than one parent in a selected household, one of them was randomly selected by lottery as a study participant. Three visits were made in a case when the interviewees are unavailable in their homes during the time of visit.

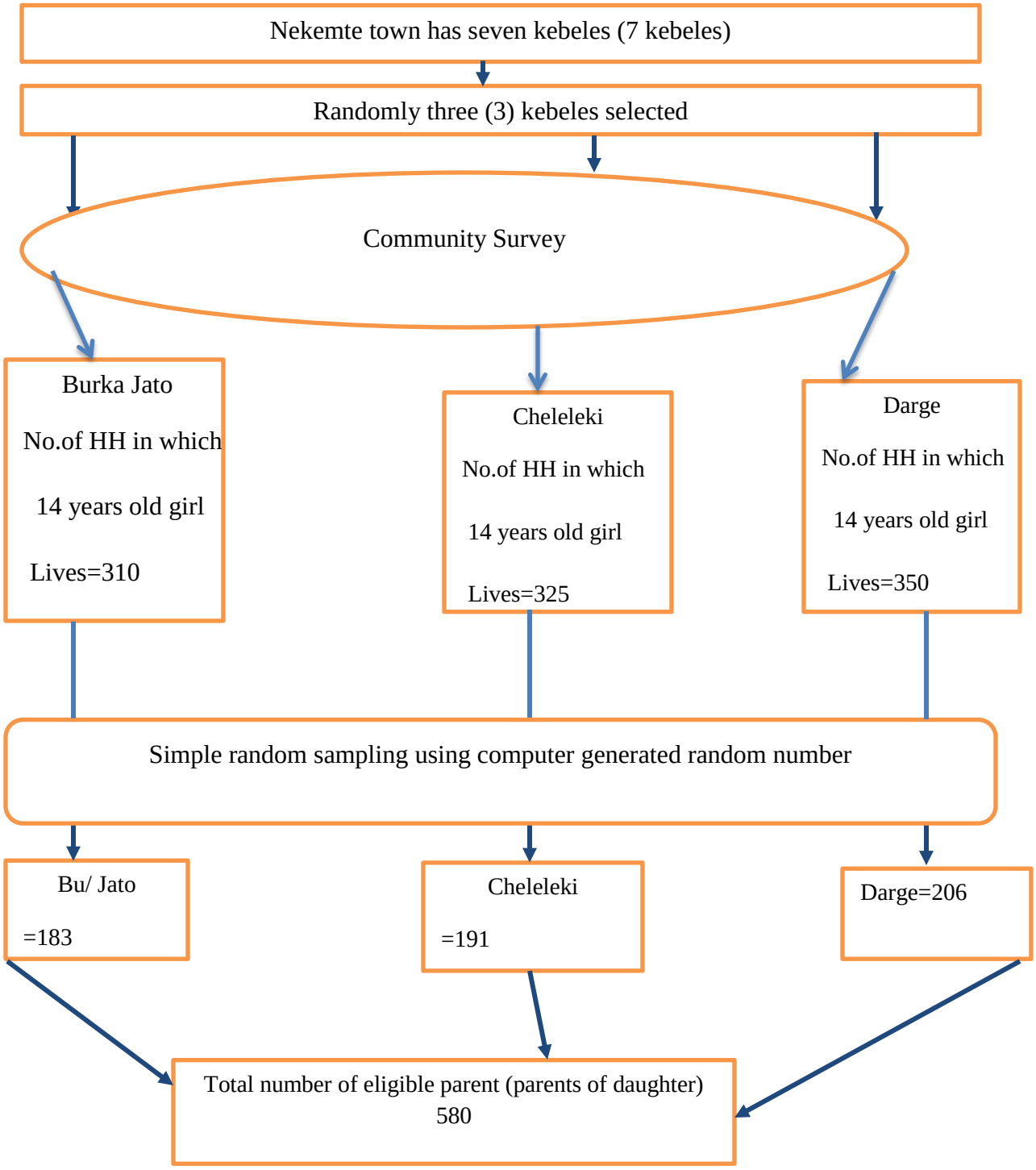


Figure 3: Schematic presentation of the sampling procedure of KAP towards HPV vaccine among parents of daughter in Nekemte town, 2022

4.8. Data collection procedure

A face-to-face interview-administered questionnaire was used to collect the data. Data was collected by seven trained diploma nurses (urban health extension worker) and two BSc nurses who were served as supervisors. The questionnaire is composed of five parts. Parts 1 assess the socio-demographic characteristics of the participants, part 2 source of information, part 3 contains knowledge assessment items, part 4 contains attitude assessment items and part 5 contains practice to HPV vaccine assessment questions. Three visits were made in a case when the interviewees are unavailable in their homes during the time of visit.

4.9. Study variables

The dependent variables were knowledge, attitude and practice towards HPV vaccine among parents of daughter.

The independent variables were socio-demographic factors (Age, sex, educational status, marital status, occupational status, and monthly income level), Source of information: Family, Neighbor, friends, Media (television, radio, internet), Brochure, leaflet, magazine, Social network (Facebook, Twitter) and Health professional (Health extension worker, nurse, doctor).

4.10. Data quality control

The data collection tool was first prepared in English and translated to the local language, Oromifa and Amharic and back translated to English by professional translators to check for any inconsistencies. Then, the tool was pre-tested on 5% of the sample size from Kesso kebele from which the actual study did not include. Seven experienced data collectors and two supervisors were recruited and trained regarding the purpose of the study, how to collect the data, confidentiality and how to protect themselves from COVID-19 during data collection as per the Ethiopian ministry of health COVID-19 prevention guidelines. The reliability of the tool was ensured by calculating the cronbaches alpha coefficient for Likert scale items (0.83) and knowledge items (0.75).

4.11. Operational definitions

Knowledge of HPV vaccine: Knowledge about HPV infection and its vaccination was assessed using 16 yes or no response items. A correct response was leveled as 1, otherwise 0. The scores for each items summed, and then those respondents who scored greater than the mean value was categorized as good knowledge, otherwise poor knowledge

Attitude towards HPV vaccine: was assessed among the participants about cervical cancer prevention, HPV vaccine safety, and effectiveness. We assessed the attitude using a Likert scale. The scoring system used was: strongly disagree =1, disagree=2, neutral=3, agree= 4, strongly agree=5.The responses were summed and a total score was obtained. Then we calculated the mean score. Those who scored greater than the mean value was categorized as having a Favorable attitude, otherwise unfavorable attitude.

Practice: the question "Have you immunized your daughter with HPV vaccine? " was used to assess the practice to HPV vaccine. If so, these daughter(s) was classified as "already vaccinated." For mothers who answered "yes" to this question was further asked reason for vaccination. A respondent whose daughter(s) had not received the vaccine were asked about reason for not vaccinated their daughter.

Parent was defined as a person who has the legal authority (and the corresponding duty) to care for the personal and property interests of a daughter.

4.12. Data management and Analysis

The collected data were entered into Epi data version 3.1 and analysis was done using the SPSS version 25 statistical package. Descriptive statistics were used to describe the variable of the study. The bivariable and multivariable binary logistic regression models were fitted to identify the association between dependent and independent variables. All independent variables with P-value < 0.25 with knowledge, attitude and practice of HPV vaccine in binary logistic regression variables were transferred to multivariable logistic regressions to adjust for the effect of confounders and to identify the factors associated with the outcome variables.

In the multivariable logistic regression model fitting, an adjusted odds ratio (AOR) with a 95% confidence interval (CI) was computed. A P-value less than 0.05 were considered to be statistically significant at 95% CI.

A Multicollinearity test between independent variables was checked using the Variance inflation factor and correlations were tolerable (VIF<10). Model goodness of fit test was cheeked using Hosmer- Lemeshow test and it was a good fitted model (P-value >0.05).

4.13. Ethical considerations

Ethical clearance was obtained from Ethical Review Board of Jimma University, Institute of Health science. Department of Epidemiology was written a letter of approval to Nekemte town

Health office. We were explained the aim of the study to the study participants. Written informed consent was taken from the study participants before gathering information and Privacy of the respondents was kept during interview. All the information gathered from the participants was kept confidential. Participation in the study was purely voluntary, with no consequences for non-participation.

4.14. Plan for Dissemination of the Study

The result will be submitted to Jimma University Institute of Health Sciences, Department of Epidemiology and disseminated to Nekemte town Health office. Furthermore, it will be presented on conferences and the manuscript will be sending to peer reviewed International/national journals for publication.

Chapter Five: Result

5.1. Socio-Demographic Characteristics of the Respondents

Five hundred sixty-one (561) parents were interviewed with a response rate of 97%. The mean age of the respondents were 39 (39 ±6.012 SD) years and the majority 434 (77.4%) were female by sex, 445 (79.9%) were married by marital status, 141 (25.1%) were able to read and write by education status, 166 (29.6%) were government employee by occupation and 264 (47.1%) were protestant by religion. The majority of the respondents 188 (35.5%) had four children. The minimum and maximum monthly income of study participants was 400 birr and 9999 birr respectively. The average (±SD) monthly income of the respondents' family was 2640(±2010.09) birr

Table 2: socio-demographic characteristics of parents of daughters in Nekemte town, West Ethiopia, 2022 (n=561)

variable	Categories	Frequency	Percent (%)
Age in years	21–29 years	38	6.77
	30–39 years	253	45.09
	≥40 years	270	48.12
Sex	Male	127	22.63
	Female	434	77.36
Marital status	Single	21	3.74
	Married	445	79.32
	Divorced	60	10.69
	Widowed	34	6.06
	Separated	1	0.17
Educational status	Unable to read and write	49	8.73
	Able to read and write	141	25.13
	Primary education	113	20.14
	Secondary education	76	13.54

	Diploma	105	18.71
	Degree and above	77	13.72
Religion	Protestant	264	47.05
	Orthodox	163	29.05
	Muslim	133	23.70
Occupation	Civil servant	116	20.67
	Daily laborer	95	16.93
	Private employee	47	8.37
	Non-governmental employee	5	0.89
	Merchant	107	19.07
	House wife	138	24.59
Number of daughters	One	550	98.03
	>1	11	1.96
Monthly income in birr	<1500	220	39.21
	1500-3000	173	30.83
	3001-4500	98	17.46
	>4500	70	12.47

5.2. Source of information

The majority of the respondents 427 (76.1%) heard about HPV vaccine and from this for 271 (63.5 %) respondents' main source of information about HPV vaccine was health workers (Figure 4).

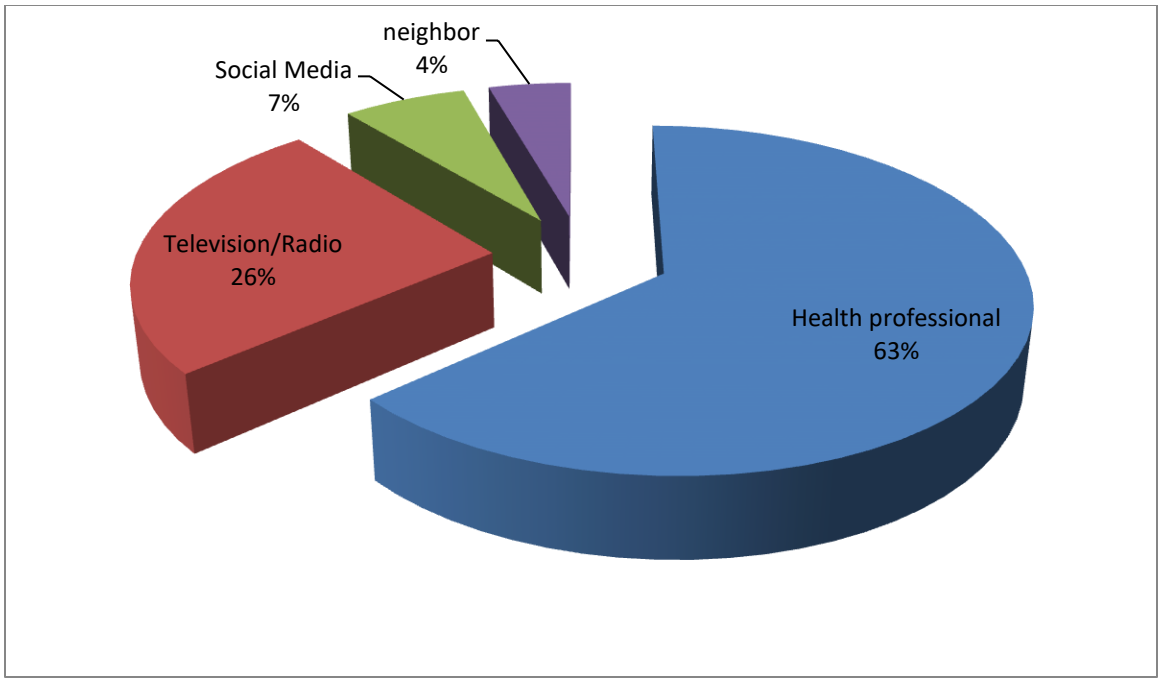


Figure 4: Source of information about human papillomavirus vaccine among parents of daughter aged 14 Years in Nekemte Town, 2022

5.3. Knowledge about Human Papilloma Virus & HPV Vaccine

Among the study participants, 318(56.7%) knew that the HPV virus can cause cervical cancer. Nearly half of them , 176 (49.2%) knew that HPV infections are preventable , HPV is sexually transmitted 271(48.3%) and condom use can prevent HPV infection 291(51.9%), below half 189(33.7%) say HPV infection heal by itself without treatment, 226(40.3%) they knew HPV vaccine prevents around 70% of cervical cancer and 309(55.1%) knew that HPV infection is asymptomatic.

According to operational definition given in methods section, 294(52.5%) of the respondents had poor knowledge. Whereas, 267 (47.5%) of respondents had good knowledge.

Table 3: Knowledge of cervical cancer and HPV and HPV vaccine among parents of daughter in Nekemte town, West Ethiopia, 2022

Knowledge items	Category	Frequency	%
HPV can cause cervical cancer	Yes	318	56.7
	No	243	43.3
HPV infections are preventable	Yes	276	49.2
	No	285	50.8

HPV is sexual transmitted disease	Yes	271	48.3
	No	290	52.7
Condom use can prevent HPV infection	Yes	291	51.9
	No	270	48.1
HPV last for years	Yes	301	53.7
	No	260	46.3
Cervical cancer is caused by persistent HPV infection	Yes	292	52
	No	269	48
HPV may infect both men and women	Yes	273	48.7
	No	288	51.3
Most HPV infection resolves spontaneously	Yes	189	33.7
	No	372	66.3
HPV can infect you without symptoms	Yes	309	55.1
	No	252	44.9
HPV can cause genital ulcer	Yes	342	61
	No	219	39
HPV can cause other anogenital cancer(penis, anus)	Yes	272	48.5
	No	289	51.5
HPV vaccine prevents around 70% cervical cancer	Yes	226	40.3
	No	335	59.7
Pap-smear can screen cervical cancer	Yes	236	42.1
	No	325	57.9
Pap-smear is very or relatively effective in screening cervical cancer	Yes	243	43.3
	No	318	56.7
Pap-smear should be done every 3 years	Yes	230	41
	No	331	59
Pap-smear can be done the age of 35and above	Yes	345	61.5
	No	216	38.5
Knowledge of the participants	Good knowledge	267	47.5

	Poor knowledge	294	52.5

5.4. Attitude towards HPV vaccine

Majority of respondents 304(54.2%) agree that cervical cancer is severe disease and 50(8.9%) of parents disagree that cervical cancer is severe disease and 68(12.1%) respondents neither agree nor disagree about severity of the cervical cancer disease. More than half (64.2%) of the respondents believed that cervical cancer is preventable disease. Two hundred twenty eight (60.9%) of the respondents believes vaccines are beneficial.

Based on operational definition stated in method section, 276 (49.2%) of participants had unfavorable attitude while 285 (50.8%) of respondents had favorable attitude towards HPV vaccine.

Table 4: Attitude towards HPV vaccine among parents of daughter in Nekemte town, West Ethiopia 2022

Attitude items	**Level of agreement, number (%)**				
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Cervical cancer is a sever disease	2(0.4)	50(8.9)	68(12.1)	304(54.2)	137(24.4)
Cervical cancer is preventable disease	8(1.4)	89(15.9)	97(17.3)	248(44.2)	119(21.2)
Your daughter is susceptible to HPV infection	14(2.5)	129(23)	137(24.4)	195(34.8)	86(15.3)
HPV vaccine is helpful to prevent cervical cancer	1(0.2)	104(18.5)	106(18.9)	269(48)	81(14.4)
HPV vaccine is safe	11(2)	120(21.4)	133(23.7)	223(39.8)	74(13.2)
There is less risk involved in being vaccinated than in having HPV infection	19(3.4)	111(19.8)	106(18.9)	246(43.9)	79(14.1)
HPV vaccine will not lead to complicated sexual activities	64(11.4)	126(22.5)	101(18)	208(37.1)	62(11.1)
Vaccinating your Daughter against	96(17.1)	122(21.)	91(16.2)	186(33.2)	66(11.8)

HPV would not encourage them to become sexual active					
I would not want my children to be infected with HPV	88(8.4)	72(12.7)	64(13)	288(54.9)	49(11.1)
I would have my children vaccinated against HPV if the vaccination is freely available	47(8.4)	71(12.7)	73(13)	308(55.9)	62(11.1)
Information on HPV helps me to decide whether my children should be vaccinated against HPV	26(4.6)	78(13.9)	75(13.4)	325(57.9)	57(10.2)

		Number	%
Attitude of the participants	Favorable attitude	285	50.8
	Unfavorable attitude	276	49.2

5.5. Practice of HPV Vaccination for Their Daughters

Among participants in this study, 293(52.2%) were not vaccinated their daughter while 268(47.8%) of respondents were vaccinated their daughter.

Table 5: Vaccination practice of parents of daughter in Nekemte town, West Ethiopia, 2022

Practice variable	Frequency	%
Vaccinated their daughter	268	47.8
Not vaccinated their daughter	293	52.2

Reason for vaccination

The most common reason for vaccinated their daughter were health professional's request (78%) (Figure5).

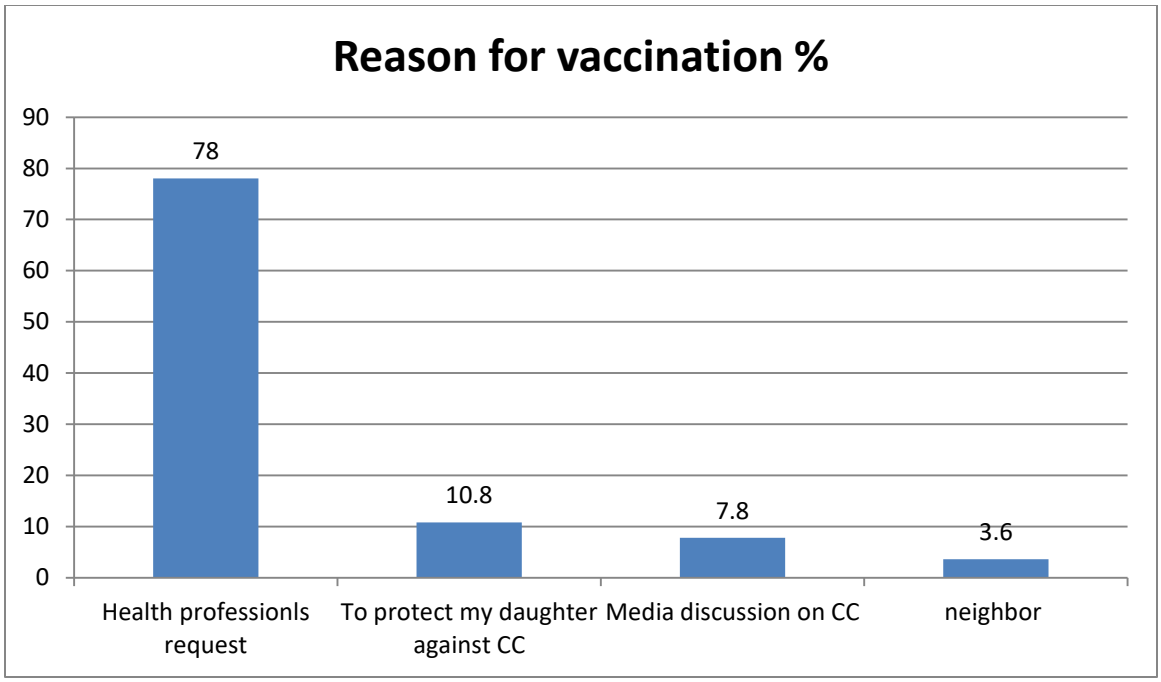


Figure 5: Reason for vaccination against human papillomavirus among parents of daughter in Nekemte town, 2022

Reason not to vaccinate their daughter

The most common reasons for not vaccinated their daughter were decision made by daughter (32.7%) (Figure6).

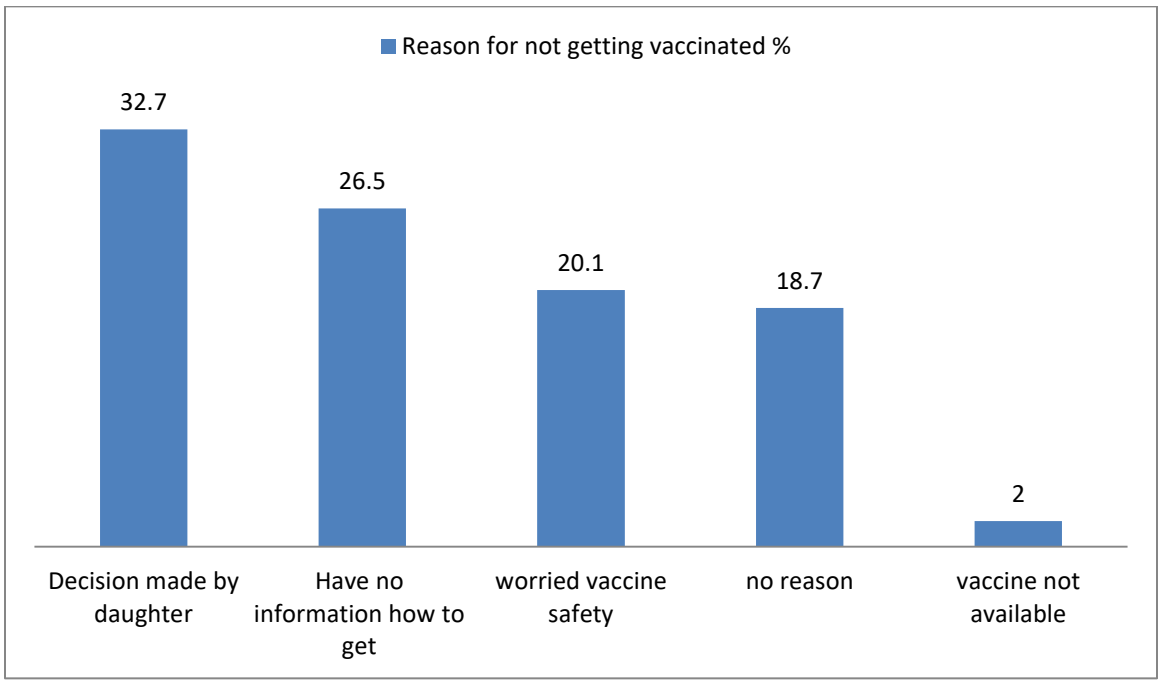


Figure 6: **Reasons for not getting the human papillomavirus vaccine among parents of daughter in Nekemte town, 2022**

5.6. Factors Associated with Knowledge about the HPV Vaccine

For bivariable logistic regression analysis, a total of twelve variables were used and among these, seven of the variables (parental educational level, parental occupation, Religion, paternal monthly income, previously heard about HPV, source of information about the HPV vaccine and attitude) were all candidate variables for multivariable analysis.

Table 6: **Bivariable analysis of factors associated with knowledge about HPV vaccine among Parents of Daughters in Nekemte Town, West Ethiopia, 2022**

Variable	Category	Knowledge		COR(95% CI)	p-value
		Poor No (%)	Good No (%)		
Age in years	21–29 years	19(50)	19(50)	1.12(0.57-2.22)	0.73
	30–39 years	132(52.17)	121(47.83)	1.10(0.73-1.45)	0.85
	≥40 years	143(52.96)	127(47.04)	1	
Sex	Male	63(49.6)	64(50.4)	1	0.47
	Female	231(53.22)	203(46.78)	0.86(0.58-1.28)	
Marital status	Single	7(33.33)	14(66.67)	1	
	Married	227(51.11)	218(48.89)	0.47(0.08-2.63)	0.39
	Divorced	36(59.42)	24(40.58)	0.34(0.05-1.99)	0.25
	Widowed	19(56.75)	15(43.25)	0.38(0.06-2.34)	0.29
Educational status	Unable to read and write	20(40.81)	29(59.19)	1	
	Able to read and write	88(61.53)	55(38.47)	0.41(0.21-0.80)	0.009*
	Primary education	68(60.17)	45(39.83)	0.45(0.23-0.9)	0.02*
	Secondary education	33(43.42)	43(56.58)	1.56(0.76-3.22)	0.22*
	Diploma	52(49.52)	53(50.48)	0.89(0.44-1.62)	0.77
	Degree and above	33(42.85)	44(57.15)	0.7(0.35-1.39)	0.31
Religion	Protestant	148(56)	116(44)	1.16(0.62-1.36)	0.67
	Orthodox	57(42.85)	76(57.15)	1.56(0.98-2.48)	0.05*
	Muslim	88(53.98)	75(46.02)	1	
Occupation	Civil servant	78(46.98)	88(53.02)	1.19(0.76-1.87)	0.43
	Daily laborer	61(64.21)	34(35.79)	0.59(0.34-1.0)	0.05*
	Private employee	19(40.42)	28(59.58)	1.56(0.79-3.05)	0.19*

	Non-governmental employee	1(20)	4(80)	4.23(0.46-38.8)	0.2*
	Merchant	64(59.81)	43(40.19)	0.71(0.42-1.18)	0.19*
	House wife	71(51.44)	67(48.56)	1	
Number of child	<5	258(51.8)	240(48.2)	1	
	>5	36(57.14)	27(42.86)	0.80(0.47-1.36)	0.42
Number of daughter	One	287(52.18)	263(47.82)	1	
	>1	7(63.63)	4(36.36)	0.62(0.18-2.15)	0.45
Monthly income in birr	<1500	129(58.63)	91(41.37)	1	
	1500-3000	89(51.44)	84(48.56)	1.33(0.89-1.99)	0.15*
	3001-4500	41(41.83)	57(58.17)	1.97(1.21-3.19)	0.00*
	>4500	35(50)	35(50)	1.41(0.82-2.43)	0.2*
Heard about HPV	Yes			17.34(6.54-36.35)	0.00*
	No			1	
Source of information	Family	2(100)	0	0.00(0.00-0.00)	0.999
	Neighbor	5(29.41)	12(70.59)	1.08(0.35-3.33)	0.88
	Health professional	115(42.43)	156(57.57)	0.61(0.38-0.98)	0.04*
	Social media	6(21.42)	22(78.58)	1.66(0.61-4.47)	0.31
	Electronics media	34(31.19)	75(68.81)	1	
Attitude of the participants	Positive attitude	96(33.68)	189(66.32)	4.99(3.49-7.15)	0.00*
	Negative attitude	198(71.73)	78(28.27)	1	

*candidate for multivariable at p<0.25

After controlling for confounders using the multivariable analysis model, source of information about the HPV vaccine, occupation, religion and attitude towards HPV vaccine was significantly associated with knowledge about HPV vaccine.

This study show that, parents who had a positive attitude towards the HPV vaccine were about 4 times more likely to have good knowledge about the HPV vaccine than parents who had a negative attitude towards the HPV vaccine (AOR=3.58, 95% CI= 2.22, 5.75). The finding of this study showed that, parents who heard about the HPV vaccine from health worker were about 45% less likely to have good knowledge than parents who heard about the HPV vaccine from electronic media (Radio, television) (AOR=0.55, 95% CI= 0.32, 0.93). Parents whose occupation was daily laborer were 76% less likely to have good knowledge than parents whose occupation were house wife. Similarly Parents whose occupation was merchant was 64% less likely to have good knowledge than parents whose occupation were house wife. Parents with the religion of

orthodox were 2 times more likely to have good knowledge about the HPV vaccine than parents with the religion of Muslim (AOR= 2.15, 95% CI= 1.12, 4.15) (Table 7).

Table 7: Multivariable analysis of factors associated with knowledge about HPV vaccine among Parents of Daughters in Nekemte Town, West Ethiopia, 2022

Variable	Category	Knowledge		AOR (95% CI)	p-value
		Poor No (%)	Good No (%)		
Educational status	Unable to read and write	15(38.4)	24(61.6)	1	
	Able to read and write	65(69.3)	33(30.7)	0.4(0.16-1.05)	0.059
	Primary education	59(73.7)	24(26.3)	0.52(0.19-1.36)	0.18
	Secondary education	21(36.8)	36(63.2)	0.9(0.3-2.7)	0.86
	Diploma	43(51.8)	40(48.2)	0.64(0.17-2.35)	0.5
	Degree and above	32(47.7)	35(52.3)	0.71(0.16-3.14)	0.65
Religion	Protestant	116(60)	77(40)	0.69(0.4-1.19)	0.18
	Orthodox	38(35.5)	69(64.5)	2.15(1.12-4.15)	0.02*
	Muslim	81(63.7)	46(36.3)	1	
Occupation	Civil servant	66(48.5)	70(51.5)	0.62(0.21-1.82)	0.38
	Daily laborer	46(63.8)	26(36.2)	0.24(0.11-0.52)	0.00*
	Private employee	16(43.2)	21(56.7)	1.24(0.46-3.35)	0.66
	Non-governmental employee	0	4(100)	0(0.000-0.00)	0.99
	Merchant	46(58.9)	32(41.1)	0.36(0.17-0.76)	0.00*
	House wife	58(59.7)	39(40.3)	1	
Monthly income in birr	<1500	90(56.9)	68(43.1)	1	
	1500-3000	78(56.9)	59(43.1)	1.01(0.52-1.93)	0.98
	3001-4500	44(55.6)	35(44.4)	1.41(0.58-3.43)	0.43
	>4500	23(43.3)	30(56.7)	0.98(0.32-3.01)	0.97
Source of information	Family	2(100)	0	0.00(0.00-.00)	0.99
	Neighbor	7(41)	10(59)	0.78(0.20-2.97)	0.71
	Health professional	163(60)	108(40)	0.55(0.32-93)	0.02*
	Social media	7(25)	21(75)	1.12(0.39-4.08)	0.69
	Electronics media	56(51)	53(49)	1	
Attitude of	Positive attitude	122(45.6)	145(54.4)	3.58(2.22-5.75)	0.00*

the participan	Negative attitude	113(70.6)	47(29.3)	1	

* Significance at p<0.05.

5.7. Factors Associated with Attitude towards HPV Vaccine

For bivariate logistic regression analysis, a total of twelve variables were used and among these, nine of the variables (parents' age, sex, marital status, parents' educational level, parents' occupation, parents monthly income, number of children in the household, source of information about the HPV vaccine and knowledge) were all candidate variables for multivariable analysis.

Table 8: Bivariable Analysis of Factors Associated with Attitude towards HPV Vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022

Variable	Category	Attitude		COR(95% CI)	p-value
		Unfavorable No (%)	Favorable No (%)		
Age in years	21–29 years	25(65.7)	13(34.3)	1	
	30–39 years	114(45)	139(55)	2.345(1.14-4.79)	0.019*
	≥40 years	137(50.7)	133(49.3)	1.867(0.91-3.80)	0.08*
Sex	Male	55(43.3)	72(56.7)	1	
	Female	221(50.9)	213(49.1)	0.73(0.49-1.09)	0.132*
Marital status	Single	4(16.6)	17(83.4)	1	
	Married	224(50.4)	221(49.6)	0.19(0.02-1.69)	0.13*
	Divorced	32(53.6)	28(46.4)	0.17(0.01-1.55)	0.11*
	Widowed	10(29.7)	24(70.3)	0.47(0.04-4.52)	0.51
Educational status	Unable to read and write	24(48.9)	25(51.1)	1	
	Able to read and write	82(58)	59(42)	0.69(0.36-1.32)	0.26
	Primary education	57(50.4)	56(49.6)	0.94(0.48-1.84)	0.86
	Secondary education	23(30)	53(70)	2.21(1.05-4.65)	0.03*
	Diploma	54(51)	51(49)	0.90(0.46-1.78)	0.77
	Degree and above	36(46.7)	41(53.3)	1.09(0.53-2.240)	0.80

Religion	Protestant	122(46)	142(54)	1.20(0.81-1.78)	0.344
	Orthodox	83(50.9)	80(49.1)	0.93(0.59-1.47)	0.769
	Muslim	70(52.6)	63(47.3)	1	
Occupation	Civil servant	81(48.7)	85(51.3)	1.249 (0.79- 1.96)	0.335
	Daily laborer	42(44)	53(56)	1.502(0.88-2.54)	0.129*
	Private employee	19(40.4)	28(59.6)	1.754(0.89-3.43)	0.101*
	Non-governmental employee	3(60)	2(40)	0.79(0.12-4.90)	0.803
	Merchant	53(49.5)	54(50.5)	1.21(0.73-2.01)	0.454
	House wife	75(54)	63(46)	1	
Number of child	<5	240(48)	258(52)		
	>5	36(57)	27(43)	0.69(0.41-1.18)	0.18*
Number of daughter	One				
	>1			0.80(0.24-2.66)	0.72
Monthly income in birr	<1500	112(50.9)	108(49.1)	1	
	1500-3000	91(52)	82(48)	0.93(0.62-1.39)	0.739
	3001-4500	43(43.8)	55(56)	1.32(0.822-2.141)	0.247*
	>4500	30(42.8)	40(57.2)	1.38(0.80-2.37)	0.241*
Source of information	Family	0	2(100)	1(0.00)	0.999
	Neighbor	2(11.7)	15(88.3)	4.70(1.02-21.60)	0.047*
	Health professional	110(40.5)	161(59.5)	0.91(0.58-1.44)	0.711
	Social media	6(21)	22(79)	2.29(0.86-6.13)	0.097*
	Electronics media	42(38.5)	67(61.4)	1	
Knowledge of the participants	Poor knowledge	113(70.6)	122(45.6)	1	
	Good knowledge	47(24)	145(76)	2.58(1.88-4.33)	0.00*

*candidate for multivariable at p<0.25

After controlling for confounders using the multivariate analysis model age, source of information, educational status and knowledge were significantly associated with attitudes towards the HPV vaccine.

This study show that participants whose age was 30–39 years old were 3.12 times (AOR = 3.12, 95% CI = 1.32, 7.38) more likely to have favorable attitude towards HPV vaccine as compared to participants whose age was 21-29 years old. Participants who had secondary education were 3.35 times (AOR = 3.35, 95% CI = 1.18, 9.48) more likely to have favorable attitude toward the HPV vaccine, as compared to those participants who had no formal education (unable to read and write). The finding of this study showed that, parents who heard about the HPV vaccine

from neighbor were about 7 time (AOR=6.74, 95% CI=1.29,35.08) more likely to have favorable attitude towards HPV vaccine as compared to parents who heard about the HPV vaccine from electronic media (Radio, television). Parents who had good knowledge about the HPV vaccine were about 3 times more likely to have a favorable attitude towards the HPV vaccine than parents who had poor knowledge about the HPV vaccine (AOR=2.81; 95% CI=1.78–4.45).

Table 9: Multivariable Analysis of Factors Associated with Attitude towards HPV Vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022

Variable	Category	Attitude		AOR(95% CI)	p-value
		Unfavorable No (%)	Favorable No (%)		
Age in years	21–29 years	25(65.7)	13(34.3)	1	
	30–39 years	114(45)	139(55)	3.12(1.32-7.36)	0.00*
	≥40 years	137(50.7)	133(49.3)	2.26(0.94-5.39)	0.06
Marital status	Single	4(16.6)	17(83.4)	1	
	Married	224(50.4)	221(49.6)	0.25(0.02-2.86)	0.26
	Divorced	32(53.6)	28(46.4)	0.27(0.02-3.21)	0.30
	Widowed	10(29.7)	24(70.3)	1.07(0.08-14.24)	0.95
Educational status	Unable to read and write	24(48.9)	25(51.1)	1	
	Able to read and write	82(58)	59(42)	0.78(0.33-1.83)	0.57
	Primary education	57(50.4)	56(49.6)	1.71(0.70-4.18)	0.23
	Secondary education	23(30)	53(70)	3.35(1.18-9.48)	0.02*
	Diploma	54(51)	51(49)	1.28(0.53-3.10)	0.57
	Degree and above	36(46.7)	41(53.3)	1.27(0.50-3.19)	0.60
Source of information	Family	0	2(100)	0	0.99
	Neighbor	2(11.7)	15(88.3)	6.74(1.29-35.08)	0.02*
	Health professional	110(40.5)	161(59.5)	1.14(0.69-1.88)	0.59
	Social media	6(21)	22(79)	2.26(0.797-6.45)	0.12
	Electronics media	42(38.5)	67(61.4)	1	
Knowledge of the participants	Poor knowledge	113(48)	122(52)	1	
	Good knowledge	47(24)	145(76)	2.81(1.78-4.45)	0.00*

* Significance at $p<0.05$

5.8. Factors Associated with Practice of HPV Vaccination for their Daughters

Sex , Educational status, occupation, marital status, age category, monthly income, knowledge and attitude had significant association with HPV vaccination practice in binary logistic regration at p-value <0.25 from this occupation, marital status, monthly income, knowledge and attitude had significant association with HPV vaccination practice on multivariable logistic regration analysis at p-value < 0.05. But sex, age category and educational status had not significant association in multivariable logistic regration analysis.

Table 10: Result of bivariable analysis of on factors associated with practice of HPV vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 (n=561)

Variable	Category	Practice		COR(95% CI)	p-value
		Not vaccinated No (%)	Vaccinated No (%)		
Age in years	21–29 years	18(47.36)	20(52.63)	1	
	30–39 years	145(57.31)	108(42.68)	0.67(0.33-1.32)	0.225*
	≥40 years	130(48.14)	140(51.85)	0.96(0.49-1.91)	0.928
Sex	Male	53(41.73)	74(58.26)	1.727(1.15-2.57)	0.007*
	Female	240(55.29)	194(44.71)	1	
Marital status					0.068*
	Single	17(83.33)	4(16.66)	1	
	Married	218(49.1)	227(50.9)	5.182(0.60-44.70)	0.135*
	Divorced	37(62.31)	23(37.68)	3.023(0.33-27.32)	0.325
	Widowed	22(64.86)	12(35.13)	2.708(0.28-25.71)	0.386
	Separated	1(100)	0(100)	0.00	1.00
Educational status	Unable to read and write	31(63.26)	18(36.73)	1	
	Able to read and write	95(67.37)	46(32.63)	0.83(0.42-1.64)	0.600
	Primary education	76(67.25)	37(32.74)	0.83(0.41-1.69)	0.622
	Secondary education	33(43.42)	43(56.57)	2.24(1.07-4.68)	0.032*
	Diploma	35(33.33)	70(66.67)	3.44(1.69-6.99)	0.001*

	Degree and above	23(29.87)	54(70.1)	4.04(1.89-8.63)	0.00*
Religion	Protestant	137(51.89)	127(48.1)	1	
	Orthodox	91(55.82)	72(44.17)	1.16(0.76-1.76)	0.478
	Muslim	64(48.12)	69(51.87)	0.85(0.57-1.26)	0.429
Occupation	Civil servant	51(43.96)	115(56.04)	4.22(2.61-6.84)	0.00*
	Daily laborer	62(65.26)	33(34.74)	0.99(0.57-1.72)	0.99
	Private employee	20(42.55)	27(57.45)	2.53(1.28-4.97)	0.007*
	Non-governmental employee	1(20)	4(80)	7.50(0.81-68.99)	0.075*
	Merchant	69(64.48)	38(35.51)	1.03(0.60-1.75)	0.905
	House wife	90(62.21)	48(34.78)	1	
Number of daughter	One	285(51.81)	265(48.19)	1	
	>1	8(72.72)	3(27.28)	0.40(0.10-1.53)	0.18*
Monthly income in birr	<1500	163(74.09)	57(25.9)	1	
	1500-3000	73(42.19)	100(57.8)	3.91(2.55-6.00)	0.00*
	3001-4500	33(33.67)	65(66.32)	5.63(3.36-9.43)	0.00*
	>4500	24(34.28)	46(65.71)	5.48(3.07-9.77)	0.00*
	No	115(85.82)	19(14.18)	1	
Source of information	Family	2(100)	0(0)	0.00(0.00)	0.99
	Neighbor	3(17.64)	14(82.36)	3.28(0.89-12.08)	0.7
	Health professional	121(44.64)	150(55.36)	0.87(0.55-1.36)	0.55
	Social media	7(25)	21(35)	2.10(0.82-5.38)	0.3
	Electronics media	45(41.28)	64(58.72)	1	
Knowledge of the participants	Good knowledge	70(26.21)	197(73.79)	2.21(1.49-3.30)	0.00*
	Poor knowledge	223(75.85)	71(24.15)	1	
Attitude of the participants	Favorable attitude	108(37.89)	177(62.1)	3.33(2.35-4.71)	0.00*
	Unfavorable attitude	185(67.02)	91(32.97)	1	

*candidate for multivariable at p<0.25

The study showed that parents whose occupation were government employee were 2.67 times more likely to vaccinate their daughter than those whose occupation were house wife

(AOR=2.67, 95% CI= 1.21, 5.89). Similarly, parents whose occupation were private employee were 2.98 times more likely to vaccinate their daughter than those whose occupation were house wife (AOR=2.98, 95% CI=1.20, 7.43).Parents with monthly income 1500-3000 birr were 3.39 times more likely to get their girls vaccinated than those monthly income <1500 birr (AOR=3.39, 95% CI= 1.89, 6.1). Similarly, parents with monthly income 3001-4500 birr were 4.93 times more likely to get their girls vaccinated than those monthly income <1500 birr(AOR=4.93, 95% CI= 2.19, 11.08).Parents who had good knowledge about cervical cancer and its risk factors were 2 times more likely to vaccinate their daughter than those with poor knowledge (AOR=1.78, 95% CI= 1.1, 2.88). Parents who had a favorable attitude about the HPV vaccination were 2.71 times more likely to vaccinate their daughters than those who had unfavorable attitudes (AOR=2.71, 95% CI= 1.64, 4.48). Marital status was associated with a higher vaccination coverage compared to the daughters of mothers that lived alone (AOR, 12.85: 95% CI, 1.9-28).

Table 11: Result of multi-variable analysis of on factors associated with practice of HPV Vaccination among Parents of Daughters in Nekemte Town, West Ethiopia, 2022 (n=561)

Variable	Category	Practice		COR (95% CI)	AOR (95%CI)	p-value
		Not vaccinated No (%)	Vaccinated No (%)			
Age in years	21–29 years	18(47.36)	20(52.63)	1	1	
	30–39 years	145(57.31)	108(42.68)	0.67(0.33-1.32)	2.48(0.94-6.57)	0.06
	≥40 years	130(48.14)	140(51.8	0.96(0.49-1.91)	0.60(0.60-1.00)	0.05
Marital status	Single	17(83.33)	4(16.66)	1	1	
	Married	218(49.1)	227(50.9)	5.18(0.6044.70)	12.85(1.9-28.56)	0.01*
	Divorced	37(62.31)	23(37.68)	3.02(0.3327.32)	11.32(0.8-26.85)	0.06
	Widowed	22(64.86)	12(35.13)	2.70(0.2825.71)	12.32(0.9-36.27)	0.06
Occupation	Civil servant	51(43.96)	115(56.04	4.22(2.61-6.84)	2.67(1.21-5.89)	0.01*
	Daily laborer	62(65.26)	33(34.74)	0.99(0.57-1.72)	0.75(0.37-1.50)	0.42
	Private employee	20(42.55)	27(57.45)	2.53(1.28-4.97)	2.98(1.20-7.43)	0.01*
	Non-	1(20)	4(80)	7.50(0.8-68.99)		0.99

	governmental employee					
	Merchant	69(64.48)	38(35.51)	1.03(0.60-1.75)	0.51(0.25-1.02)	0.058
	House wife	90(62.21)	48(34.78)	1	1	
Monthly income in birr	<1500	163(74.09)	57(25.9)	1	1	
	1500-3000	73(42.19)	100(57.8)	3.91(2.55-6.00)	3.39(1.89-6.10)	0.00*
	3001-4500	33(33.67)	65(66.32)	5.63(3.36-9.43)	4.93(2.19-11.08)	0.00*
	>4500	24(34.28)	46(65.71)	5.48(3.07-9.77)	1.50(0.54-4.17)	0.43
Knowledge of the participants	Good knowledge	70(26.21)	197(73.79)	2.21(1.49-3.30)	1.78(1.10-2.88)	0.01*
	Poor knowledge	223(75.85)	71(24.15)	1	1	
Attitude of the participants	Positive attitude	108(37.89)	177(62.1)	3.33(2.35-4.71)	2.71(1.64-4.48)	0.00*
	Negative attitude	185(67.02)	91(32.97)	1	1	

* Significance at $p<0.05$

Chapter Six: Discussion

This study describes the knowledge, attitude, and practice towards HPV vaccine and associated factors among parents of daughter in Nekemte town.

This study reveals that more than three forth, 427 (76.1%) of the participants had heard about HPV. This finding was comparable with the research done in Addis Ababa which was 73%(38). However, this finding is higher than the studies done in Gondar town which was 55.2%(25), Debre Markos town 63.4%(53) and Debre Tabor town 48.7%(39). The possible explanation for these differences might be due to the current national campaign for HPV vaccination in Ethiopia. During the data collection for this study, school based immunization was being given in the town in a campaign basis and the parents have heard about the HPV infection and vaccine.

The findings of this study showed that 267 (47.5 %) of parents of daughter had good knowledge about the human papillomavirus and HPV vaccine. This finding was comparable with the research done in Debre Markos town , northern Ethiopia, which was 47%(53). This finding is higher than the study conducted in Debre Tabor town (35.1%)(39). This difference might be the difference in the study period as these days better attention has been given to cancer of the cervix. As compared to a study conducted in India (59%)(67) and Nigeria (69.1%)(43) the finding is low. The discrepancy of these findings might be explained by the difference in socio-demographic characteristics of the study participants. Lack of knowledge of HPV infection could lead to the spread of HPV and leave young girls at risk of contracting HPV infection.

The study found that 285(50.8%) of the respondents had a positive attitude towards HPV vaccine. This finding is comparable with a study in Addis Ababa, Ethiopia, which showed 50.3%(38), but this finding is lower than the research done in in Gondar town, Northern Ethiopia, which reported that 59.9% had positive attitude towards HPV vaccination(25). This difference might be due to the practice of community health education in the northern part of the country that takes an advantage of the University of Gondar which is a pioneer in practicing a community based education in the area. The finding of this study is also lower than that of Poland(90.2%)(23), Indonesia (99%)(40), Japan (93%)(41) and Israel (62%)(42). The discrepancy of these findings might be explained by the difference in socio-demographic characteristics of the study participants. On the other hand, it might be due to a low level of knowledge among respondents. These perceptions influenced the respondents' behavior to take

their daughters for vaccination so as to reduce the risk of cervical cancer. The respondents' attitudes towards the HPV vaccine made it difficult for them to vaccinate their daughters.

In this community based cross sectional study, parents reported that 268(47.8%) of eligible girls received HPV vaccine. The finding of this research was lower than the studies done in Canada (88%)(57), British (65%)(16) and Italy(53%)(47).The discrepancy of these findings might be explained by the difference in socio-demographic characteristics of the study participants and the availability and accessibility of the health services infrastructures. The other explanation for this might be the difference with the level of knowledge and attitude of the study population. But this finding was higher than a study conducted in Nigeria (13.5%)(43). The possible reason might be the time gap, which affects the dissemination of information about the vaccine through various media including the Internet, Facebook, Telegram, Television, and radio.

Parents cited advice from health professionals, vaccine efficacy and concerns about daughters' health as the main reasons for choosing to have daughters receive the vaccine. The finding was concordant with other similar studies from Canada(16). This study indicates that health professionals (Health extension worker, doctor, nurse) request plays the most important role in influencing the parents' decision. Parents who supported HPV vaccination for their daughter (78%) were to a large extent based on health professional's advice. These proclaim the importance of disseminating the messages through the health professionals so that HPV vaccination among parents of daughter increases.

Decision made by daughter(32.7%), being unsure of the safety of the vaccine (20.1%) and Not being aware of how to get their daughter vaccinated(26.5%) were the main reason for the non-vaccination of HPV vaccine, which was in line with the study conducted in Valencia(54). Some parents (18.7%) had no reason at all for not vaccinating their daughters, and this was supported by a study done in Western Nigeria(49). This emphasized that the government needs to give tangible and reliable information regarding the general characteristics of the vaccine including the possible side effects to rule out misconceptions and rumors concerning the vaccine.

The finding of the current study showed that parental attitude, occupation, source of information and religion have an impact on knowledge of HPV vaccine of participants. Parents who had positive attitude towards HPV vaccine were about 4 times more likely to have good knowledge about HPV vaccine than parents who had negative attitude towards HPV vaccine, which is similar to a study conducted in Debre Markos town(53). Parents who heard about HPV vaccine

from health professional before this study were about 45% less likely to have good knowledge about the HPV vaccine than parents who heard from mass media (TV/Radio). Mass media messages are considered as reliable source of information by the community in Ethiopia(38). Therefore, the findings of this study underscore the need for concerted efforts to design appropriate mass media messages pertaining to cervical cancer and HPV vaccination to address the gap in knowledge and attitudes towards HPV vaccination in the general population.

Participants whose occupations were merchant were about 64% less likely to have good knowledge about the HPV vaccine than parents whose occupation were house wife and also parents whose occupation were daily laborer were about 76% less likely to have good knowledge about the HPV vaccine than parents whose occupation were housewife. This might be because parents gain information about the vaccine from their daughter after vaccination, housewife mostly because they are home makers.

Participants who had secondary education were 3.35 times more likely to have positive attitude toward the HPV vaccine, as compared to those participants who had no formal education (unable to read and write), which is in line with the study conducted in Debre Tabor town(39).This might be because parents who have secondary educational levels are more likely to have information from school, mass media, newspapers, and the internet.

The finding of the current study show that parents who had good knowledge about the HPV vaccine were about 3 times more likely to have a positive attitude towards the HPV vaccine than parents who had poor knowledge about the HPV vaccine, which is similar to a study done in Debre Markos town, Ethiopia(53). This justifies that knowing the HPV vaccine would bring behavioral change.

We found that parents' age was significantly associated with attitude towards HPV vaccine. Parents whose age was 30-39 years were about 3 times more likely to have a positive attitude towards the HPV vaccine than parents whose age was 21-29 years (younger participants). The reason is not clear but may be the younger had less exposure about vaccination of the child than the older. This suggests that intervention should target the diverse age in the community.

Findings from the multivariable logistic regression in the study showed that parents whose occupation were government employee, marital status, Parents with monthly income 1500-3000 and 3001-4500 birr, Good knowledge and positive attitude towards HPV vaccine were associated factors with HPV vaccine practice.

The finding of the current study show, parents marital status married were 12.8 times more likely vaccinated their daughter as compared to the daughters of parents that lived alone. This finding was similar to a study conducted in Spain(54). The reason is unclear, might be married parents may have more information than parents that lived alone may have.

In this study, Being government employees, they were 2.67 times more likely to vaccinated HPV vaccine as compared to those participants whose occupation was a house wife. This finding was in line with studies conducted in Spain(54). This might be government employees are educated. Participants that are more educated may have better access to media (print, social, and mass media) exposure to HPV vaccination information.

Consistent to other study findings, monthly income was found to be associated with the practice of HPV vaccine. Parents with monthly income 1500-3000 birr were 3.39 times more likely to vaccinate their daughter as compared to those participants whose monthly income <1500 birr.

Those parents with lower monthly income were not vaccinating their daughter as compared to those with higher income. This finding is consistent with studies done in Utah(55).

This might be due to their low level of exposure to the mass media messages, low level of health literacy, and low level of exposure to the effects of globalization and urbanization. This finding of the study calls for interventions that give special considerations for addressing the gaps of knowledge on cervical cancer and HPV vaccination among the low socio-economic population.

In this study, those parents with good knowledge of HPV were more likely to vaccinate their daughter than those with poor knowledge. This is in line with studies that reported similar findings(68). This might be explained by the parents who have evidence about the route of transmission, a consequence of infection, and complications of cervical cancer that forced them to vaccinate their daughter. Therefore parental awareness raising programs is a key and need to be designed for parents.

The study found that if participants had positive attitudes toward HPV vaccination, they were 2.13 times more likely to vaccinate their daughter for HPV than those with negative attitudes. These results are consistent with the results of previous studies saying that parents' attitudes toward HPV vaccination had a strong influence on decision-making regarding vaccination(45,47). Since mothers' positive attitudes toward HPV vaccination positively affect children's HPV-vaccination rates, it is necessary to assist mothers in developing positive attitudes by providing advertisements and education concerning the vaccine's effects.

Limitations of the study

- The information collected quantitatively was not triangulated with the qualitative method.

Chapter Seven: Conclusion and recommendation

6.1. Conclusion

Although high percentage had heard about HPV, the level of knowledge and positive attitude towards HPV and HPV vaccination were found to be limited. The finding of the current study showed that parental attitude, occupation, source of information and religion have an impact on knowledge of HPV vaccine of participants. Good knowledge on HPV and the vaccine, source of information and educational status were associated with the attitude of parents towards HPV vaccine. Higher monthly income, good knowledge on HPV and the vaccine, and positive attitude towards the vaccine were associated with practice of HPV vaccination

6.2. Recommendation

To ensure a sustainable practice of HPV vaccination, it is crucial to increase the community awareness in a sustainable manner.

An integrated work on behavioral change communication and interferences focusing on improving the knowledge about HPV vaccine; continuous health education at different places like schools, community level and through medias to disseminate information regarding HPV vaccine may be the most effective strategies that should be considered by Nekemte town health and educational offices including other nongovernmental organizations working on health and health-related issues.

To Nekemte town health office

- It is better to arrange the educational session on HPV vaccine in collaboration with educational office and other NGOs through focusing on improving knowledge about HPV vaccine, and attitude towards HPV vaccine particularly for those parents who have eligible daughters for HPV vaccine.
- Take the responsibility to facilitate local social media as a means of disseminating information on HPV vaccine to improve the knowledge about HPV vaccine and attitude towards HPV vaccine.
- It is better to have community radio stations to mobilize education about HPV vaccine.

To Nekemte town health centers

- A health education program is prepared on HPV vaccine and its advantage to give at local community levels

- Health extension workers and other health professionals are encouraged to teach about HPV vaccine and its benefit at the community level and home to home for parents

For scientific community

- Further research be conducted using a mixed study design to explore the other socio-cultural factors that cannot be addressed by a quantitative study
- Further study other than cross-sectional study design should be conducted to explore the cause-effect relationship

References

1. Roy S, Dubey A, Saini D, Khanna M, Kamal VK. Knowledge , Attitude and Practice regarding HPV Vaccine among Parents and Caregivers of Female Child attending Pediatric OPD : Intervention for Primary Prevention. Indian J Soc Rehabil Oncol. 2017;1(2):1–7.
2. Mureş T. Human Papillomavirus vaccine – Knowledge and attitudes among parents of children aged 10 – 14 years ,Romania. Cent Eur J Public Health [Internet]. 2016;24(1):1–10. Available from: https://doi.org/10.21101/cejph.a4287
3. López N, Garcés-sánchez M, Panizo MB, Salamanca I, Cueva D, Artés MT, et al. HPV knowledge and vaccine acceptance among European adolescents and their parents : a systematic literature review. Public Health Rev. 2020;41(10):1–24.
4. Robadi IA, Pharaon M, Ducatman BS. The importance of high-risk human papillomavirus types other than 16 and 18 in cervical neoplasia. Arch Pathol Lab Med. 2018;142(6):1–3.
5. Sitaresmi MN, Rozanti NM, Simangunsong LB, Wahab A. Improvement of Parent ' s awareness , knowledge , perception , and acceptability of human papillomavirus vaccination after a structured-educational intervention. BMC Public Health. 2020;20(1836):1–9.
6. Tarekegn AA, Yismaw AE. Health professionals ' willingness to pay and associated factors for human papilloma virus vaccination to prevent cervical cancer at College of Medicine and Health Sciences University of Gondar , Northwest Ethiopia. BMC Res Notes [Internet]. 2019;12(58):1–6. Available from: https://doi.org/10.1186/s13104-019-4085-7
7. Tekle T, Wolka E, Nega B, Paulos W, Koyira MM. Knowledge , Attitude and Practice Towards Cervical Cancer Screening Among Women and Associated Factors in Hospitals of Wolaita Zone ,. Cancer Manag Res. 2020;12(1005):1–13.
8. Isabirye A, Mbonye M, Asiimwe JB, Kwagala B. Factors associated with HPV vaccination uptake in Uganda : a multi-level analysis. BMC Womens Health. 2020;20(145):1–11.
9. Amponsah-dacosta E, Olivier J, Kagina BM. Health systems constraints and facilitators of human papillomavirus immunization programmes in sub-Saharan Africa : a systematic

review. Health Policy Plan. 2020;35(6):1–17.

10. PATH Ethiopia Office. Improving access to HPV vaccines in Ethiopia. 2020;
11. Fadhilah F, Jalani M, Dzulkhairi M, Rani M, Isahak I. Knowledge , Attitude and Practice of Human Papillomavirus (HPV) Vaccination among Secondary School Students in Rural Areas of Negeri Sembilan ,. Int J Collab Res Intern Med Public Heal. 2016;8(6):1–15.
12. Vielot NA, Goldberg SK, Zimet G, Smith SB, Anne McDonald M, Ramos S, et al. Acceptability of multipurpose human papillomavirus vaccines among providers and mothers of adolescent girls. Papillomavirus Res [Internet]. 2017;3:1–8. Available from: http://dx.doi.org/10.1016/j.pvr.2017.04.001
13. Lee Mortensen G, Adam M, Idtaleb L. Parental attitudes towards male human papillomavirus vaccination: A pan-European cross-sectional survey Infectious Disease epidemiology. BMC Public Health [Internet]. 2015;15(1):1–10. Available from: http://dx.doi.org/10.1186/s12889-015-1863-6
14. Grandahl M, Oscarsson M, Stenhammar C, Nev T, Westerling R, Tyd T. Not the right time : why parents refuse to let their daughters have the human papillomavirus vaccination. 2014;436–41.
15. Lee A, Ho M, Ka C, Cheung M, Mei V, Keung W. Factors influencing adolescent girls ' decision in initiation for human papillomavirus vaccination : a cross-sectional study in Hong Kong. 2014;1–10.
16. Ogilvie G, Anderson M, Marra F, Mcneil S, Pielak K, Dawar M, et al. A Population-Based Evaluation of a Publicly Funded , School-Based HPV Vaccine Program in British Columbia , Canada : Parental Factors Associated with HPV Vaccine Receipt. PLoS Med. 2010;7(5):1–11.
17. Ebu NI, Abotsi-foli GE, Gakpo DF. Nurses ' and midwives ' knowledge , attitudes , and acceptance regarding human papillomavirus vaccination in Ghana. BMC Nurs. 2021;20(11):1–10.
18. Nyambe A, Kampen JK, Baboo SK, Van Hal G. Knowledge, attitudes and practices of cervical cancer prevention among Zambian women and men. BMC Public Health. 2019;19(1):1–15.
19. Eus E V, En YD. To Consent or Decline HPV Vaccination : A Pilot Study at the Start of

the National School-Based Vaccination Program in Sweden. Sch Heal. 2017;87(1):1–9.

20. Biyazin T, Yilma A, Yetwale A, Fenta B. Knowledge and attitude about human papillomavirus vaccine among female high school students at Jimma town , Ethiopia. Hum Vaccin Immunother [Internet]. 2022;18(1):1–10. Available from: https://doi.org/10.1080/21645515.2022.2036522
21. Schülein S, Taylor KJ, König J, Claus M, Blettner M, Klug SJ. Factors influencing uptake of HPV vaccination among girls in Germany. BMC Public Health [Internet]. 2016;16(995):1–8. Available from: http://dx.doi.org/10.1186/s12889-016-3663-z
22. He J, He L. Knowledge of HPV and acceptability of HPV vaccine among women in western China. BMC Womens Health. 2018;1–8.
23. Ganczak M, Owsianka B, Korze M. Factors that Predict Parental Willingness to Have Their Children Vaccinated against HPV in a Country with Low HPV Vaccination Coverage. Enviromental Res Heal. 2018;15(645):1–13.
24. Kose D, Erkorkmaz U, Cınar N, Altınkaynak S. Mothers ' Knowledge and Attitudes about HPV Vaccination to Prevent Cervical Cancers. Asian Pacfic J Cancer Prev. 2014;15(17):1–5.
25. Minyihun A. Acceptance of Human Papillomavirus Vaccination and Associated Factors Among Parents of Daughters in Gondar Town , Northwest Ethiopia. Cancer Manag Res. 2020;8519(8526):1–8.
26. Destaw A, Yosef T, Bogale B. Parents willingness to vaccinate their daughter against human papilloma virus and its associated factors in Bench-Sheko zone, southwest Ethiopia. Heliyon [Internet]. 2021;7(5):1–5. Available from: https://doi.org/10.1016/j.heliyon.2021.e07051
27. Napolitano F, Pelullo CP, Polla G Della, Angelillo IF. HPV Vaccination Attitudes and Behaviors among General Practitioners in Italy. Vaccines. 2021;9(63):1–10.
28. Taku O, Meiring TL, Gustavsson I, Phohlo K, Garcia- M, Mbulawa ZZA, et al. Acceptability of self- collection for human papillomavirus detection in the Eastern Cape , South Africa. PLOSE ONE [Internet]. 2020;15(11):1–16. Available from: http://dx.doi.org/10.1371/journal.pone.0241781
29. Mengesha A, Id K, Abate BB, Kassaw MW. Impact of knowledge and attitude on the utilization rate of cervical cancer screening tests among Ethiopian women : A systematic

review and meta-analysis. PLOSE ONE [Internet]. 2020;15(12):1–22. Available from: http://dx.doi.org/10.1371/journal.pone.0239927

30. Lott BE, Trejo MJ, Baum C, Mcclelland DJ, Adsul P, Madhivanan P, et al. Interventions to increase uptake of cervical screening in sub-Saharan Africa : a scoping review using the integrated behavioral model. BMC Public Health. 2020;20(654):1–18.
31. Soboka B, Id M, Bussmann H, Ba T, Muche A, Alemu K, et al. Community cervical cancer screening : Barriers to successful home-based HPV self- sampling in Dabat district , North Gondar ,. PLOSE ONE. 2020;15(12):1–18.
32. Nega AD, Woldetsadik MA, Gelagay AA. Low uptake of cervical cancer screening among HIV positive women in Gondar University referral hospital, Northwest Ethiopia: Cross-sectional study design. BMC Womens Health. 2018;18(1):1–7.
33. López N, Garcés-sánchez M, Panizo MB, Salamanca I, Cueva D, Artés MT, et al. HPV knowledge and vaccine acceptance among European adolescents and their parents : a systematic literature review. Public Health Rev. 2020;41(10):1–26.
34. Yu Y, Xu M, Sun J, Li R, Li M, Wang J, et al. Human Papillomavirus Infection and Vaccination : Awareness and Knowledge of HPV and Acceptability of HPV Vaccine among Mothers of Teenage Daughters in Weihai,Shandong,China. PLOSE ONE. 2016;11(e0146741):1–14.
35. Maza Y, Moyano D, Herna A. Factors associated with hindering the acceptance of HPV vaccination among caregivers - A cross-sectional study in. PLOSE ONE. 2020;15(3):1–13.
36. Adesina KT, Saka A, Isiaka-lawal SA, Omotayo O, Gobir A, Olarinoye AO, et al. Knowledge , Practice and Acceptability of HPV Vaccine by Mothers of Adolescent Girls in Iloriin,Nigeria. Sudan J Med Sci. 2018;13(1):1–17.
37. Rabiu KA, Alausa TG, Akinlusi FM, Davies NO, Shittu KA, Akinola OI. Parental acceptance of human papillomavirus vaccination for adolescent girls in Lagos , Nigeria. J Fam Med Prim Care. 2020;9(6):1–8.
38. Dereje N, Ashenafi A, Abera A, Melaku E, Yirgashewa K, Yitna M, et al. Knowledge and acceptance of HPV vaccination and its associated factors among parents of daughters in Addis Ababa , Ethiopia : a community - based cross - sectional study. Infect Agent Cancer [Internet]. 2021;16(58):1–7. Available from: https://doi.org/10.1186/s13027-021-00399-8

39. Mihretie GN, Liyeh TM, Ayele AD, Belay HG. Knowledge and willingness of parents towards child girl HPV vaccination in Debre Tabor Town , Ethiopia : a community - based cross - sectional study. Reprod Health [Internet]. 2022;1–12. Available from: https://doi.org/10.1186/s12978-022-01444-4
40. Jaspers L, Budiningsih S, Wolterbeek R, Henderson FC, Peters AAW. Parental acceptance of human papillomavirus (HPV) vaccination in Indonesia : A cross-sectional study. Vaccine [Internet]. 2011;29(44):1–9. Available from: http://dx.doi.org/10.1016/j.vaccine.2011.07.107
41. Hanley SJB, Yoshioka E, Ito Y, Konno R, Hayashi Y, Kishi R, et al. Acceptance of and attitudes towards human papillomavirus vaccination in Japanese mothers of adolescent girls. Vaccine [Internet]. 2012;30(39):1–8. Available from: http://dx.doi.org/10.1016/j.vaccine.2012.07.003
42. Shibli R, Rishpon S. The factors associated with maternal consent to human papillomavirus vaccination among adolescents in Israel. Hum Vaccin Immunother [Internet]. 2019;15(12):1–7. Available from: https://doi.org/10.1080/21645515.2019.1631139
43. Ogochukwu TN, Akabueze J, Ezeome IV, Aniebue UU, Oranu EO. Vaccination against Human Papilloma Virus in Adolescent Girls : Mother ' s knowledge,Attitude,Desire and Practice in Nigeria. J Infect Dis Prev Med. 2017;5(1):1–6.
44. Mabeya H, Odunga J, Broeck D Vanden. Mothers of adolescent girls and Human Papilloma Virus (HPV) vaccination in Western Kenya. Pan Afr Med J. 2021;38(126):1–11.
45. Krawczyk A, Knäuper B, Gilca V, Dubé E, Perez S, Joyal-desmarais K, et al. Parents ' decision-making about the human papillomavirus vaccine for their daughters : I . Quantitative results. Hum Vaccin Immunother. 2015;11(2):1–9.
46. Allen JD, Othus MKD, Shelton RC, Li Y, Norman N, Tom L, et al. Parental Decision Making about the HPV Vaccine. Cancer Epidemiol Prev. 2010;19(9):1–13.
47. Bianco A, Pileggi C, Iozzo F, Nobile CGA, Bianco A, Pileggi C, et al. Vaccination against Human Papilloma Virus infection in male adolescents : Knowledge , attitudes , and acceptability among parents in Italy Vaccination against Human Papilloma Virus infection in male adolescents : Knowledge , attitudes , and acceptability. Hum Vaccin Immunother.

2014;10(9):1–8.

48. Meireles A, Coutherut J, Biron C. Evaluation of the acceptability in France of the vaccine against papillomavirus (HPV) among middle and high school students and their parents. PLOSE ONE. 2020;15(10):1–16.
49. Haleemat Wuraola Akinleye1, Oluchi Joan Kanma-Okafor1,&, Ifeoma Peace Okafor1 KAO. Parental willingness to vaccinate adolescent daughters against human papilloma virus for cervical cancer prevention in Western Nigeria. Pan Afr Med J. 2020;36(112):1–10.
50. Thomas TL, Caldera M, Maurer J. SHORT REPORT A short report : parents HPV vaccine knowledge in rural South Florida. Hum Vaccin Immunother [Internet]. 2019;15(7–8):1–6. Available from: https://doi.org/10.1080/21645515.2019.1600986
51. Victory M, Quynh T, Do N, Kuo Y, Rodriguez AM. Parental knowledge gaps and barriers for children receiving human papillomavirus vaccine in the Rio Grande Valley of Texas. Hum Vaccin Immunother [Internet]. 2019;15(7–8):1–10. Available from: https://doi.org/10.1080/21645515.2019.1628551
52. López N, Salamanca de la Cueva I, Vergés E, Suárez Vicent E, Sánchez A, López AB, et al. Factors influencing HPV knowledge and vaccine acceptability in parents of adolescent children: results from a survey-based study (KAPPAS study). Hum Vaccines Immunother [Internet]. 2022;18(1):1–11. Available from: https://doi.org/10.1080/21645515.2021.2024065
53. Melkam Tesfaye Sinshaw1, Semarya Berhe2 SGA 1Debre. Knowledge and Attitude Towards Human Papillomavirus Vaccine and Associated Factors Among Mothers Who Have Eligible Daughters in. Dovepress. 2022;15:1–13.
54. Navarro-illana P, Caballero P, Tuells J, Puig-barberá J, Diez-domingo J. Acceptability of human papillomavirus vaccine in mothers from Valencia (Spain) ☪. 2015;83(5):1–10.
55. Kepka D, Sanchez-birkhead A, Villalta J, Mukundente V, Bodson J. Factors Associated with Human Papillomavirus Vaccination Among Diverse Adolescents in a Region with Low Human Papillomavirus Vaccination Rates. Heal Equity. 2018;2:1–10.
56. Terning B, Campbell S, Burger E, Nygård M. Correlates of HPV vaccine uptake in school-based routine vaccination of preadolescent girls in Norway : A register-based study of 90 , 000 girls and their parents. Prev Med (Baltim) [Internet]. 2015;77(2015):1–7.

Available from: http://dx.doi.org/10.1016/j.ypmed.2015.04.024

57. Krawczyk A, Knäuper B, Gilca V, Dubé E, Perez S, Joyal-desmarais K, et al. Parents ' decision-making about the human papillomavirus vaccine for their daughters : I . Quantitative results Parents ' decision-making about the human papillomavirus vaccine for their daughters. Hum Vaccin Immunother. 2015;11(2):1–9.
58. Nickel B, Dodd RH, Turner RM, Waller J, Marlow L, Zimet G, et al. Factors associated with the human papillomavirus (HPV) vaccination across three countries following vaccination introduction. Prev Med Reports. 2017;8(2017):1–8.
59. Lee H, Kim M, Kiang P, Shi L, Tan K, Chea P, et al. Factors Associated with HPV Vaccination among Cambodian American Teenagers. Public Health Nurs. 2016;33(6):1–9.
60. Zhang S, Pan X, Wang S, Yang C, Zheng Q, Ma W, et al. Annals of Epidemiology Knowledge of human papillomavirus vaccination and related factors among parents of young adolescents : a nationwide survey in China. Ann Epidemiol [Internet]. 2015;25(4):1–5. Available from: http://dx.doi.org/10.1016/j.annepidem.2014.12.009
61. Zhang Y, Wang Y, Liu L, Fan Y, Liu Z, Wang Y, et al. Awareness and knowledge about human papillomavirus vaccination and its acceptance in China : a meta-analysis of 58 observational studies. BMC Public Health [Internet]. 2016;1–15. Available from: http://dx.doi.org/10.1186/s12889-016-2873-8
62. Zhang S, Pan X, Wang S, Yang C, Zheng Q, Ma W, et al. Annals of Epidemiology Knowledge of human papillomavirus vaccination and related factors among parents of young adolescents : a nationwide survey in China. Ann Epidemiol [Internet]. 2015;25(4):231–5. Available from: http://dx.doi.org/10.1016/j.annepidem.2014.12.009
63. OMONDI-OGUTU JMM. PARENTAL ACCEPTANCE OF HUMAN PAPILLOMA VIRUS VACCINE FOR THEIR PRE-PUBERTAL AND TEENAGE DAUGHTERS. East Afr Med J. 2011;88(5):1–8.
64. Degarege A, Krupp K, Fennie K, Srinivas V, Li T, Stephens DP, et al. HHS Public Access. 2020;31(6):583–91.
65. Poudel, Kritika NS. Analyzing Awareness on Risk Factors , Barriers and Prevention of Cervical Cancer among Pairs of Nepali High School Students and Their Mothers. Int J Environ Res Public Health. 2019;16(4382):1–15.

66. Ethiopian Central Statistical Agency. Central Statistical Agency Population Projections for Ethiopia 2007-2037. 2013;188.
67. Khan SS. Parental Acceptance of the Human Papillomavirus Vaccination Among South Asian Immigrants Living in the Midwest USA. Purdue Univ. 2014;
68. Allen JD, Othus MKD, Shelton RC, Li Y, Norman N, Tom L, et al. Parental Decision Making about the HPV Vaccine. 2010;2187–99.

Annexes

Annex 1: Participant information sheet

Greeting: Good morning/afternoon!!

My name is……I am working as a data collector for the study entitled Knowledge attitude and practice towards Humanpappiloma virus(HPV) vaccine among parents of daughter in Nekemte town, East Wollega zone, Oromia regional state ,West Ethiopia, 2022. Now you are randomly selected for this study and I kindly request you to lend me your attention to explain about the study and being selected as the study participants.

The Study Title: Knowledge attitude and practice towards HPV vaccine among parents of daughter in Nekemte town , East Wollega zone, Oromia regional state ,West Ethiopia, 2022

Name of the organization: Jimma University, Institute of Health Science, Department of Epidemiology

Introduction: Information sheet and consent form is prepared for parents of daughter who will be volunteer to participate in research project, community based cross-sectional study will be conducted to assess KAP towards HPV vaccine at this community.

Purpose/aim of the study:

The finding of this study can be of a paramount importance for the town health office and other concerned bodies to plan different programs for the purpose of to ensure adequate access to vaccines and provision of qualitative preventive health-care services to the community.

Procedure and duration:

To assess parents KAP towards HPV vaccine, you are invited to take part in this project. If you are willing to participate in this project, you need to understand and say "yes" on the agreement form. Then after, I will interview you and fill using structured questionnaires. There are 43 Questionnaires it will take about 30 minute to answer it, so I kindly request you to spare me this time for the interview.

Risk/ Discomfort: The risk of being participating in this study is very minimal, but you may feel some discomfort especially on spending time about 30 Minutes. We hope you will participate in

the study for the sake of the benefit of the research result. I am sure there is no risk in participating in this research project.

Confidentiality: The information you will provide us will be confidential. There will be no information that will identify you in particular. The findings of the study will be general for the study population and will not reflect any thing particular of individual persons. The questionnaire will be coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the research.

Right to refuse or withdraw: Participation for this study is fully voluntary. You have the right to declare participate or not to participate in this study. If you decide to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits which you otherwise are entitled you do not have answer any questions that you do not want to answer.

Contact Address: If there are any questions or enquiries any time about the study or the procedure, please contact:

Mobile Phone: 0913897890 Email Address: tadessetesho@gmail.com

Annex 2: English version participant consent form

I have read/ was read to me the participant information sheet. I have clearly understood the propose of the research, the procedures, the risk and benefits, issues of confidentiality, the rights of participating and the contact address of any queries. I have been given the opportunity to ask questions for the things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any questions that I do not want. Therefore, I declare my voluntary consent to participate in this study.

Volunteer to participate: **Yes** ☐ **No** ☐

If participant does not agree to be interviewed thanks him/her and go to the next participant.

If respondent say **yes** continue.

Annex 3: Data collection tool

This is a data collection format to assess knowledge, attitude and practice towards HPV vaccine among parents of daughter in Nekemte town, East Wollega zone, West Ethiopia, 2022.

Name of Data collector: ---------- Qualification: ----------

Time Interview Started: Hour: _____ Minute: _____ Ended: Hour: _____ Minute: _____

Questionnaire No_____

Date _____/_____/____ ____E.C. signature_____

Name of kebeles _____Code _____

Checked by supervisor for completeness: Supervisor Name _____signature____

Date___/___/__E.C.

Data Collector agreement

"I certify that I have filled the questionnaire in accordance with the training that is given to me and instructions stated in it. I have confirmed that the information in it is correct."

Signature _____Date_____/_____/____ ____E.C

Checked by supervisor for completeness: Supervisor Name _____signature____

Date___/___/__E.C.

Instruction for data collectors

1. Collect data from parents who had daughters age 14 years old living in the selected Kebele
2. Attempt all question properly & encircle appropriate response of each question by pencil only
3. Clarify questions to the respondents accordingly but if the questions need to jump follow skip based accordingly
4. Check the completeness of the questionnaire before ending the interview with the respondent

Part 1 -Socio demographic data

CODE	QUESTIONS	RESPONSE	SKIP
101	Gender of parent	1.Male 2.Female	
102	Age of parent	_____years	
103	Marital status	1. Single 2 .Married 3 Divorced 4 Widowed 5.separeted	
104	Education status	1.can't read and write 2.only read and write 3.primary school 4.secondary school 5.Diploma 6.Degree and above	
105	Religion	1 protestant 2 Muslim 3 Orthodox	

		4 others ----------	
106	Occupation	1. Government employee 2 .Daily laborer 3. Private employee 4. Non-government employee 5- merchant 6.Farmer 7.House wife 8.others ---------- 88. Refuse to respond	
107	Number of children	_____	
108	Number of daughter aged 14 years old	_____	

Part 2.Socio Economic Status

CODE	QUESTION	RESPONSE	SKIP
201	How much income do your households make per month?		

Part 3. Information HPV vaccine

CODE	QUESTION	RESPONSE	Skip
301	Do you hear about HPV vaccine before this study	1. Yes 2. No	
302	Who told you about HPV? (More than one answer can be given.)	1.Family 2.Neighbor, friends 3.Health professionals(Health extension worker ,doctor, nurse) 4.Social network (Facebook, Twitter) 5.Media (television, radio, internet)	

		6.Brochure, leaflet, magazine 7.Other, namely_____
303	What is your trusted sore of information about HPV?	1.Family 2.Neighbor, friends 3.Health professionals(Health extension worker ,doctor, nurse) 4.Social network (Facebook, Twitter) 5.Media (television, radio, internet) 6.Brochure, leaflet, magazine 7.Other,

Part 4 Knowledge about cervical cancer and its risk factors

CODE	QUESTION	RESPONSE
401	HPV can cause cervical cancer?	1. Yes 2. No 3. I don't know
402	HPV infections are preventable?	1. Yes 2. No 3. I don't know
403	HPV is sexual transmitted disease?	1. Yes 2. No 3. I don't know
404	Condom use can prevent HPV infection?	1. Yes 2. No 3. I don't know
405	HPV last for years?	1. Yes 2. No 3. I don't know
406	Cervical cancer is caused by persistent HPV infection?	1. Yes 2. No 3. I don't know
407	HPV may infect both men and women?	1. Yes 2. No 3. I don't know
408	Most HPV infection resolves spontaneously?	1. Yes 2. No 3. I don't know
409	HPV can infect you without symptoms?	1. Yes 2. No 3. I don't know
410	HPV can cause genital ulcer?	1. Yes 2. No 3. I don't know
411	HPV can cause other anogenital cancer(penis, anus)	1. Yes 2. No 3. I don't know
412	HPV vaccine prevents around 70% cervical cancer	1. Yes 2. No 3. I don't know
413	Pap-smear can screen cervical cancer	1. Yes 2. No 3. I don't know
414	Pap-smear is very or relatively effective in screening cervical cancer	1. Yes 2. No 3. I don't know
415	Pap-smear should be done every 3 years	1. Yes 2. No 3. I don't know
416	Pap-smear can be done the age of 35and above	1. Yes 2. No 3. I don't know

Part 5: Attitude towards HPV infection & vaccine

CODE	QUESTION	RESPONSE				
		Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
501	Cervical cancer is a sever disease					
502	Cervical cancer is preventable disease					
503	Your daughter is susceptible to HPV infection					
504	HPV vaccine is helpful to prevent cervical cancer					
505	HPV vaccine is safe					
506	There is less risk involved in being vaccinated than in having HPV infection					
507	HPV vaccine will not lead to complicated sexual activities					
508	Vaccinating your Daughter against HPV would not encourage them to become sexual active					
509	I would not want my children to be infected with HPV					
510	I would have my children vaccinated against HPV if the vaccination is freely available					
511	Information on HPV helps me to decide whether my children should be vaccinated against HPV					

Part 6.Practice

CODE	QUESTION	RESPONSE	
601	Have you immunized your	1. Yes 2. No 3. I don't know	If yes go to q

	daughter with HPV vaccine?		602 and 603 If no go to q 604
602	Daughter vaccination card for confirmation	1. Yes 2. No	
603	Reason for vaccinated their daughter	1.Health professionals(Health extension worker ,doctor, nurse) request 2. It's a good way to protect my daughter against cervical cancer 2. Other parents in my community are getting their daughters the HPV vaccine 3.media discussion on cervical cancer 4.voluntarily 5.other(specify)_____	
604	Reason for not vaccinated their daughter	1.Not being aware of how to get their daughter vaccinated 2.the vaccine not being available 3. Worried about vaccine safety 4. The decision is made by the children themselves 5. No reason 6.other (specify)_____	

That is the end of our questionnaire. Thank you very much for taking time to answer these questions. We very much appreciate your help!!

ቅጥያ 1

I. መጠይቆች በአማርኛ

ቅጥያ 1 የተሳታፊዎች መረጃ

እንደምን አደሩ/ዋሉ !!!

ስሜ——————————————እባላለሁኝ።

በጅማ ዩኒቨርሲቲ በጤና ሳይንስ እንስቲቱት በኢፒዲሞሎጂ ት/ት ክፍል በሚጣና ጥናት ላይ መረጃ ሰብሳቢ ሆኜ እየሰራሁ ነው።እርስዎም በዚህ ጥናት ላይ እንዲሳተፉ ስለተጋበዙ የእርስዎን ታማኝ እና ቀና የሆነ ትብብር ለጥያቄዎቹ መልስ እንፈልጋለን።

የጥናቱርዕሰ:በኦሮሚያ ክልላዊ መንግስት በምስራቅ ወለጋ ነቀምት ከተማ ባሉ የሴት ልጅ ወላጅ/አሳዳጊ ዘንድ ያለውን አች.ፒ.ቪ ክትባት ያለውን እዉቀት፣ አመለካከት እና ተግባር እና ተያያዥ ምክኒያቶችን ላማወቅ ነው።

የተቋሙሰም :ጅማ ዮኒቨርስቲ, ጤና ሳይንሰ እንስቲቱት, የኢፒዲሞሎጂ ት/ት ክፍል

የሰፖንሰር ሰም :ጅማ ዮኒቨርስቲ

መግቢያ: በዚህ ጥናት ላይ ፈቃደኛ ለሆኑ ወላጅ/አሳዳጊ የመረጃ እና የፈቃደኝነት ቅጽ ተዘጋጀቷል።በዚህማህበረሰብ ውስጥ ያለውን አች.ፒ.ቪ ክትባት ነባራዊሁኔታ ለመገምገምእንዲረዳ ማህበረሰብተኮር ጥናት ይካሄዳል።

የጥናቱ አላማ:የዚህ ጥናት ውጤት የ ከተማዉ ጤና ጽ/በት እና ሌሎች የሚመለከታቸው አካላትከ ማህፀን እካንሰር ጋር የተያያዙ የእናቶች ጉዳት እና ሞትን ለሚያቅዷቸው መርሀግብሮች መሰካት ከፍተኛጠ ቀሜታ አለው።

ቅደም ተከተል እና የሚፈጀው ጊዜ፡ አች.ፒ.ቪ ክትባት ያለውን እዉቀት፣ አመለካከት እና ተግባር እና ተያያዥ ምክኒያቶችን ላማወቅ ሁኔታ ለመገምገም በሚደረገው ጥናት ላይ እንዲሳተፉ ከተጋበዙ በኋላ ፈቃደኛ ከሆኑ የስምምነት ቅፅ ላይ አዎ የሚለውን ምርጫ የወስዳሉ። በመቀጠል መጠይቁን እያካሄድን የተዘጋጁትን መጠይቆች ምርጫ ይወስዳሉ። የመጠይቆቹ ብዛት 43 ሲሆኑ ቃለ መጠየቁን ለማጠናቀቅ 30 ደቂቃ ያስፈልጋል ስለዚህ ይህን ሰዓት እንድጠቀም እንዲፈቅዱልኝ ስንል በትህትና እጠይቃለሁ።

የሚፈጠር ችግር/አለመመቸት፡ የጊዜው 30 ደቂቃ ለዚህ ጥናት መጠቀምዎ ካለተመቸዎ በቀር እዚህ ጥናት ላይ መሳተፉዎ ምንም አይነት ችግር እንደማያመጣ በእርግጠኝነት አስረግጬ መናገር እፈልጋለሁ። ለጥናቱ የተሳካ ዉጤት ሲሉ ለመሳተፍ ፈቃደኛ እንደሚሆኑ ተስፋ እና ደርጋለን።

ሚስጥራዊነት፡ የሚሰጠን መረጃ ምስጥራዊነት የተጠበቀ ከመሆኑም በላይ እርሶዎን ነጥሎ የሚጠቀም ምንም አይነት መረጃ አይኖርም የጥናቱ ውጤቶች ከጠቅላላው ህዝብጋር እንጂ ከግለሰብ ጋር ለብቻው የተያያዘ ነገር አይኖራቸውም መጠይቆቹ ስም እንዳያስፈልጋቸው ተደርገው የተዘጋጁ ከመሆናቸው በላይ ተሳታፊ ግለሰብን ከጥናቱ ጋር ሊያገናኙ የሚችሉ የቃልም ይሁን የተፃፈ ማጣቀሻዎች አይኖሩም።

የመቃወም ወይም የማቋረጥ መብት፡-ጥናቱ ላይ ለመሳተፍ የተሳታፊው ሙሉ ፍቃድ አስፈላጊ እንደመሆኑ ግለሰቡ የመሳተፍም ሆነ ያለመሳተፍ ሙሉ መብት አላቸው ከተሳተፉም ብኋላም ቢሆን በፈለጉት ሰአት የማቋረጥ እና መመለስ የማይፈልጉትን ጥያቄ ያለመመለስ ሙሉመብት አላቸው።

አድራሻ፤ ስለጥናቱ ምንም ዓይነት ጥያቄ ካለ በዚህ ያሳውቁን

ስልክ፡0913897890

ቅጥያ 2: የተሳታፍ ፍቃድ ቅጽ የተሳታፊ መረጀ ቅጹን አንብቤያለሁ ወይም ተነቦልኛል: ስለጥናቱ ዓላማ፣ ቅድም ተከተል፣ ጉዳትናጥቅሞች፣ ምስጥራዊነት፣ የተሳትፎ መብት እና የግንኙነት አድራሻዎች በግልጽ ተረድቻለው፣ግልጽ ያልሆኑልኝን ነግሮች እንድጠይቅም እድሉ ተሰቶኛል : : በፈለኩት ሠዓት ጥናቱን ማቋረጥ እና መመለስ ማልፈልጋቸውን ጥያቄዎችም አለመመለስ ዕንደምችል አሳውቀውኛል : : ስለሆነም በዚህ ጥናት ላይ ለመሳተፍ ያለኝን ፍቃደኝነት አሳውቄአለሁ::ግለሰቡ ለቃለመጠይቁ ፈቃደኛ ካልሆኑ አመስግነን ወደ ቃጣይ ተሳታፊ ይታለፋል።

ፈቀዳኛኖት አዎ አይደለሁም

ግለሰቡ እሽ ካለ ጥናቱ ይቀጥላል።

መጠይቆች በአማርኛ ይህ ይዘታ————————————————ለመገምገም ተዘጋጀ የመረጃ መሰብሰቢያ ነው።

የመረጃው ሠብሳቢው/ዎ ስም _____ልዩ ብቃት_____

ቃለመጠየቁ የጀመረበት ጊዜ፣ሠዓት _____ደቂቃ_____

ቃለመጠየቁ የተጠናቀቀበት ጊዜ፣ሠዓት_____ደቂቃ_____

መጠይቅ ቁጥር_____

የመረጃ ሠብሳቢ ስምምነት ፡ መጠይቆቹን የሞላሁት በተሰጠኝ ስልጠና እና መመሪያዎች መሠረት መሆኑ እና ያሉት መረጃዎች ትክክለኛ መሆናቸውን አረጋግጣለሁ።
ፊርማ_____ቀን____/_____/_____E.C
የተቆጣጣሪው ስም_____ፊርማ_____ቀን_____/____/___ ዓ.ም

ክፍል 1፡ ማህበራዊና የስነህዝብ ጉዳዮች			
መለያ ቁጥር	ጥያቄ	መልስ	
101	ጸታ	1.ወንድ 2.ሴት	
102	እ ድ ሜ ሽ/ህ ስን ት ነው ?	.....	
103	የትዳርሽ/ህ ሁኔታ እንዴት ነው?	1. ያላገባ/ች 2. ያገባ/ች 3. የፋታ/ች 4. ባሏ የሞተባት	
104	የ ትምህር ት ሁኔታ ?	1.ማንበብ እና መጻፍ የማይችል 2.ማንበብ እና መጻፍ የሚችል 3.የመጀመሪያ ደረጃ ትምህርት 4.ሁለተኛ ደረጃ ትምህርት 5.ዲፕሎማ 6.ዲግሪ እና ከዛ በላይ	
105	ሃይማኖትህ/ሽ ምንድን ነው?	1. ፕሮቴስታንት 2. ሙስሊም 3. ኦርቶዶክስ 4. ሌላ ካ ለ ይ ገ ለ ፅ	
106	የ ስ ራ ሁ ኔ ታ ዎ ?	1.የመንግስት ተቀጣሪ 2.ቀን ሰራተኛ 3.የግል ተቀጣሪ	

		4. መንግስታዊ ያልሆነ ሰራተኛ 5. ነጋዴ 6. የ ቤት እመቤት 7. ሌላ ካ ለ ይ ገ ለ ፅ	
107	የልጆች ብዛት		
108	ዕድሜያቸው 14 ዓመት የሆነ ሴት ልጅ ቁጥር		
109			

ክፍል 2፡ ማህበራዊ ኢኮኖሚያዊ ሁኔታ		
201	ጥያቄ	መልስ
	ጠቅላላ የወር ገቢዎ ስንት ነው?	

ክፍል 3፡መረጃ የ HPV ክትባት			
መለያ ቁጥር	ጥያቄ	መልስ	ዝለል
301	ከዚህ ጥናት በፊት ስለ ኤች.ፒ.ቪ ኢንፌክሽን ይሰማሉ?	1.አዎ 2.አይ	አይ ከሆነ ወደ ጥያቄ ክፍል 4
302	ስለ ኤች.ፒ.አይ.ቪ ማን ነግሮዎታል? (ከአንድ በላይ መልስ	1.ቤተሰብ 2. ጎረቤት ፣ ጓደኞች 3. የጤና ባለሙያዎች (የጤና ኤክስቴንሽን ሰራተኛ	

	ሊሰጥ ይችላል ።)	፣ ዶክተር ፣ ነርስ) 4. ማህበራዊ አውታረመረብ (ፌስቡክ ፣ ትዊተር) 5. ሚዲያ (ቴሌቪዥን ፣ ሬዲዮ ፣ በይነመረብ) 6. ብሮሹር ፣ በራሪ ጽሑፍ ፣ መጽሔት 7. ሌላ ካለ	
303	ስለ HPV መረጃዎ ታማኝ ምንጭ የቱ ነዉ	.ቤተሰብ 2. ጎረቤት ፣ ጓደኞች 3. የጤና ባለሙያዎች (የጤና ኤክስቴንሽን ሰራተኛ ፣ ዶክተር ፣ ነርስ) 4. ማህበራዊ አውታረመረብ (ፌስቡክ ፣ ትዊተር) 5. ሚዲያ (ቴሌቪዥን ፣ ሬዲዮ ፣ በይነመረብ) 6. ብሮሹር ፣ በራሪ ጽሑፍ ፣ መጽሔት 7. ሌላ ካለ	

ክፍል 4: ስለ የማህፀን በር ካንሰር እና ለአደጋ ተጋላጭ ምክንያቶች ያለው እውቀት		
መለያ ቁጥር	ጥያቄ	መልስ
401	ኤች.ፒ.ቪ የማህጸን በር ካንሰር ሊያስከትል ይችላል?	1.አዎ 2.አይ 3.አላዉቅም
402	የ HPV ኢንፌክሽኖች መከላከል ይቻላል?	1.አዎ 2.አይ 3.አላዉቅም

403	ኤች.ፒ.ቪ በግብረ ሥጋ ግንኙነት የሚተላለፍ በሽታ ነው?	1.አዎ 2.አይ 3.አላዉቅም
404	በኮንዶም መጠቀም የ HPV በሽታን ይከላከላል?	1.አዎ 2.አይ 3.አላዉቅም
405	ኤች.ፒ.ቪ ለዓመታት መቆየት ይችላል?	1.አዎ 2.አይ 3.አላዉቅም
406	የማኅጸን ጫፍ ካንሰር በተከታታይ በ HPV በሽታ ምክንያት ይከሰታል?	1.አዎ 2.አይ 3.አላዉቅም
407	ኤች.ፒ.ቪ ወንድ እና ሴትን ሊበከል ይችላል	1.አዎ 2.አይ 3.አላዉቅም
408	አብዛኛው የ HPV በሽታ በራሱ ሊጠፋ ይችላል?	1.አዎ 2.አይ 3.አላዉቅም
409	ኤች.ፒ.ቪ (HPV) ያለ ምልክቶች ሊበክሎትዎት ይችላል?	1.አዎ 2.አይ 3.አላዉቅም
410	ኤች.ፒ.ቪ የብልት ቁስለት ሊያስከትል ይችላል?	1.አዎ 2.አይ 3.አላዉቅም
411	ኤች.ፒ.ቪ ሌሎች የወሊድ ካንሰር (ብልት ፣ ፊንጢጣ) ሊያስከትል ይችላል	1.አዎ 2.አይ 3.አላዉቅም
412	የኤች.ቪ.ቪ ክትባት ወደ 70% ገደማ የማህፀን በር ካንሰርን ይከላከላል	1.አዎ 2.አይ 3.አላዉቅም
413	ፓፕ-ስሚር የማህፀን በር ካንሰርን ሊያጣራ ይችላል	1.አዎ 2.አይ 3.አላዉቅም
414	የማህጸን ጫፍ ካንሰርን ለማጣራት ፓፕ-ስሚር በጣም ወይም በአንፃራዊነት ውጤታማ ነው	1.አዎ 2.አይ 3.አላዉቅም
415	ፓፕ-ስሚር በየ 3 ዓመቱ መከናወን አለበት	1.አዎ 2.አይ 3.አላዉቅም
416	የፓፕ ስሚር ለመጠቀም ዕድሜ 35 እና ከዚያ በላይ ሊሆን ይገባል	1.አዎ 2.አይ 3.አላዉቅም

ክፍል 5 ስለ ኤች.አይ.ቪ ቫይረስ ክትባት አመለካከት

መለያ ቁጥር	ጥያቄ					
		በጣም	አልስማማም			

		አልስማማም				

Kutaa odeeffannoo fi waliigaltee (Participant information sheet and consent form)

Nagaa bultanii/ooltanii

Maqaan koo_____jedhama.

Yuuniversiitii Jimmaa,Inistituutii fayyaa, muummee barnotaa ipidiyimooloojitiin(Epidemiology)qorannoo gaggeefamuun miseensa taheen hojjedha.Qorannoo kana irratti hirmaachuuf waan affeeramtaniif gaaffii isin gaafannuuf amanamummaa fi haqummaan deebii akka nuuf kennitan kabajaan isin gaafanna.

Mata duree qorannoo:Mootummaa naannoo Oromiyaa,godina Wallagga Bahaa magaalaa Naqamteetti maatii ijoollee durbaa qaban biratti beekumsa,ilaalchaa fi itti fayyadamaa talaallii HPV.

Kaayyoo qorannoo kanaa:Bu'aan qorannoo kanaa Waajjira Eegumsa Fayyaa Magaalaa Naqamtee fi dhaabbilee deegartootaa hojiilee ittisaa fi to'annoo kaanserii fiixee gadameessaa irratti hojjetaniif faayidaa guddaa qaba.Hirmaannaan atii qorannoo kana irratti gootu fedhii irratti kan hundaa'e fi yeroo kamittiyyu addaan kutuu yoo barbaadee kan dandeessu dha. Oddeeffannoon atii qorannoo kana irratti kennittu kamiyyuu iccittiin isaa kan eegameedha. Odeeffannoo ati nuuf laattu qorannoo kana xumuruu qofaaf utuu hin ta'iin kaanserii balbala gadameessaa ittisuufi to'achuuf ga'ee guddaa qaba.

Guca waliigaltee:unka odeefannoo dubbifadheera/naaf dubbifameera.Kaayyoo qorannoo kanaa,iccitiin koo kan eegamu tahuu ,mirga hirmaachuu ,gaaffii gaafacuu,yeroon barbaadetti qorannoo kana addaan kutuu fi qabxiilee naaf hin galle irratti ibsii akka naaf kennamu gaafachuu akkan dandahu hubadheera.Kanaafuu fedhii kootiin qorannoo kana irratti hirmaachuuf irratti waliigaleera.

Qorannoo kana irratti hirmaachuuf fedhii qabdaa?

Eeyyee_____ Mallattoo_____ Lakki_____

Deebiin isaanii eeyyee yoo tahe qorannoon itti fufa.Lakki yoo jedhan galateefadhuu maatii itti aanutti darbi.

Maqaa nama ragaa funaanuu_____Mallattoo_____

Maqaa gandaa_____koodii_____

Maqaa suupervaayizeraa_____Mallattoo_____

Hub:Qorannoo kana irratti gaaffii fi yaada yoo qabaattan lakkoofsa bilbilaa 0913897890 fi Email:tadessetesho@gmail.com tiin nu argachuu dandeessu.

Kutaa 1ffaa: Gaaffii haala Hawaasummaa(Socio demographic data)

Lakkoofsa koodii	Gaaffii	Deebii
101	Saala	1.Dhiira 2.Dubartii
102	Umurii kan kee waggaa meeqa?	_____
103	Haalli fudhaaf heerumaa kan kee maal fakkaata?	1.Kan hin heerumiin/fuune 2.Kan heerumtee/fuudhe 3.Kan hiikamtee/hiike 4. Kan irraa du'e/duute
104	Sadarkaa barumsaa	1.dubbisuu fi bareessuu kan hin dandeenye 2. dubbisuu fi bareessuu kan dandahu/dandeessu 3.barnoota sadarkaa tokkoffaa/elemenatrii 4.barnoota sadarkaa 2ffaa /high school 5.dippiloomaa 6.Digirii fi isaa ol
105	Amantiin kee maalii?	1.prootestaanti 2.muslima 3.ortoodoksii 4.kan biroo
106	Hojiin keessan maali?	1.Hojjetaa mootummaa 2.Hojjetaa guyyaa 3.Qaxaramaa dhuunfaa

		4.Hojjetaa miti mootummaa 5.Daldalaa 6.Qonnaan bulaa 7.Haadha manaa 8.kan biro
107	Ijoollee meeqa qabdu	_____
108	Baay'ina ijoollee durbaa waggaa 14	_____

Kutaa 2ffaa: Haala galii maatii(Socio Economic Status)

Lakkoofsa koodii	Gaaffii	Deebii
201	Galiin ji'aan matiin keessan argatu qarshii meeqa?	_____

Kutaa 3ffaa: Gaaffii waa'ee odeefannoo dhibee Humaan paappiloomaa vaayirasii(Information about HPV vaccine)

Lakkoofsa koodii	Gaaffii	Deebii	Darbi
301	Kana dura waayee dhibee HPV dhageessee beektaa?	1.eeyyee 2.lakki	Yoo lakki tahe gara kutaa 5ffaatti darbi
302	Yoo deebiin kee gaaffii 301 Eeyyee tahe eessaa dhageesse?	1.maatii 2.ollaa 3.ogeessa fayyaa irraa(hojjetoota ek.fayyaa,narsi ,doktarii) 4.Miidiyaalee hawaasaa(facebook,tiwitarii) 5.Miidiyaa (televizhinii,raadiyoo) 6.biroosherii,barreefamoota raabsaman,barruulee 7.kan biroo	
303	Waayee HPV maddi odeeffannoo amanamaan	1.maatii 2.ollaa 3.ogeessa fayyaa irraa(hojjetoota	

	isiniif isa kami?	ek.fayyaa,narsi ,doktarii) 4.Miidiyaalee hawaasaa(facebook,tiwitarii) 5.Miidiyaa (televizhinii,raadiyoo) 6.biroosherii,barreefamoota raabsaman,barruulee 7.kan biroo	

Kutaa 4ffaa: Gaaffii waa'ee beekumsa kaansarii fiixee **Gadammeesaa fi wantoota dhibee kanaaf nama saaxilan (**Knowledge about cervical cancer and its risk factors)

Lakkoofsa koodii	Gaaffii	Deebii
401	Vaayirasiin HPV dhiibee kaansarii fiixee gadaammeessaa fiduu ni danda'a?	1.Eeyyee 2.Lakki 3.Hin beeku
402	Faalama vaayirasii HPV'n dhufu iitisuun ni dandahama	1.Eeyyee 2.Lakki 3.Hin beeku
403	HPV'n vaayrasii walqunnamtii qaama saalaatiin dadarbuun dhufa	1.Eeyyee 2.Lakki 3.Hin beeku
404	Koondamii fayyadamuun faalama vaayirasii HPV'n dhufu ittisuun ni danda'ama	1.Eeyyee 2.Lakki 3.Hin beeku
405	Vaayirasiin HPV qaama keessa waggaa dheeraaf turuu ni danda'a	1.Eeyyee 2.Lakki 3.Hin beeku
406	Kaansariin fiixee gadaammeessaa faalama vaayirasii HPV yeroo dheeraa qaama keessa turuun dhufa	1.Eeyyee 2.Lakki 3.Hin beeku
407	Vaayirasiin HPV dhiiraa fi dubartii faaluu ni danda'aa?	1.Eeyyee 2.Lakki 3.Hin beeku
408	Baay'inaan dhibeen faalama vaayirasii HPV ofiin baduu danda'a?	1.Eeyyee 2.Lakki 3.Hin beeku
409	Vaayirasiin HPV mallattoo osoo hin	1.Eeyyee 2.Lakki 3.Hin beeku

	agarsiisiin faalama fiduu danda'a	
410	Vaayirasiin HPV qaamolee saalaa irratti madaa fiduu ni danda'a	1.Eeyyee 2.Lakki 3.Hin beeku
411	Vaayirasiin HPV kaansarii qaamolee saalaa kan biroo (qaama saalaa dhiiraa,munnee) fiduu ni danda'a	1.Eeyyee 2.Lakki 3.Hin beeku
412	Talaalliin HPV kaansarii fiixee gadaammeessaa 70% ittisuu ni danda'a	1.Eeyyee 2.Lakki 3.Hin beeku
413	Pap smiriin kaansarii balbala gadaammeessaa dursanii ittiin sakata'uuf ni fayyada	1.Eeyyee 2.Lakki 3.Hin beeku
414	Pap smiriin kaansarii fiixee gadaammeessaa dursanii ittiin sakta'uuf baay'eetti ykn gidduugaleessatti ni fayyada	1.Eeyyee 2.Lakki 3.Hin beeku
415	Dubartiin tokkoo al tokkoo qoratamtee Dhiibee kaansarii balbaba gaddaammeessaa irraa bilisaa yoo taatee garaagarummaa waggaa 3'n sakata'insa gaggeessuu qabdi	1.Eeyyee 2.Lakki 3.Hin beeku
416	Sakata'insa kaansarii fiixee gadaammeessaa fayyadamuuf waggaa 35 fi isaa ol tahuu qaba	1.Eeyyee 2.Lakki 3.Hin beeku

Kutaa 5ffaa: Gaaffii ilaalchaa waa'ee talaallii HPV (Attitude towards HPV infection & vaccine)

Lakkoofsa koodii	Gaaffii	Deebii				
		Tasuma a irratti walii hin galu	Irratt walii hin galu	Bilisa (neutra l)	Irratti waliigala	Baay'ise en irratti waliigala
501	Dhibeen kaansarii fiixee gadaammeessa dhibee baay'ee cimaa tahedha					
502	Kaansarii fiixee					

	Gadaameessaa ittisuun ni danda'ama					
503	Intalli /mucaan keessan dhibee HPV'f saaxilamuu ni dandeessi					
504	Talaalliin HPV kaansarii fiixee gadaammeessa ittisuuf ni fayyada					
505	Talaalliin HPV nageenyi isaa kan mirkanaahedha					
506	Rakkoo talaallii fudhachuun dhufu irra faalama HPV'n dhufutu caala					
507	Talaallii HPV fudhachuun rakkoo walqunamtii saalaaf nama hin saaxilu					
508	Mucaa/intala keessan talaallii HPV talaalchisuun walqunamtii saalaaf hin si'eessuu/hin jajjabeessuu					
509	Intalli /mucaan koo vaayirasii HPV'n akka faalamtu hin barbaadu					
510	Talaalliin HPV bilisaan yoo jiraate intala/mucaa koo talaalchisuuf fedhii qaba					
511	Odeefannoon waayee talaallii HPV murtoo intala/mucaa koo akkan talaalchisuuf na fayyada					

Kutaa 6ffaa: Gaaffii itti fayyadama talaallii HPV (Practice)

Lakkoofsa koodii	Gaaffii	Deebii	Darbi
601	Intala/mucaa keessan talaallii HPV talaalchistaniituu?	1.Eeyyee 2.Lakki 3.Hin beeku	Lakki yoo tahe gara gaaffii 604 darbi
602	Deebiin gaaffii 601 eeyyee yoo tahe kaardiin talaallii jiraa?mirkaneessi	1.Eyyee 2.Lakki 3.Hin beeku	
603	Sababa maaliin intala/mucaa keessan talaalchiftan	1.Gaaffii/gorsa ogeessa fayyaatiin 2.intala/mucaa koo dhibee kaansarii balbala gadaammeessaa irraa ittisuuf mala/tooftaa filatamaa waan taheef 3.Hawaasa keessaa intala/mucaa isaanii waan talaalchisaniif 4.Talaalliin HPV barbaachisaa akka tahe waanan amaneef 5.Miidiyaan waayee dhibee kaansarii balbala gadaammeessaa irratti odeefannoo waan kenneef 6.Fedhii kootiin 7.kan biroo	
604	Intala /mucaa keessan maaliif talaallii HPV hin talaalchiifne	1.intalli/mucaan koo akkamitti talaallii HPV akka fudhattu hin beeku 2.Talaalliin HPV waan hin argamineef 3.Waayee nageenyummaa talaallii	

		waanan sodadheef 4.Akka aadaa keenyaatti walqunmtiin saalaa gaa'eela dura waan hin eeyyamamineef ,kanaafuu talaalliin kun hin barbaachisu 5.murtoon talaallii fudhachuu intala/mucaa kootiin taha 6.sababa hin qabu 7.kan biroo	