

WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCINCES

DEPARTEMENT OF NURSING

KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS HUMAN PAPILLOMA VIRUS VACCINATION AMONG REGULAR FEMALE STUDENTS AT WOLKITE UNIVERSITY

A RESEARCH PAPER SUBMITTED TO WELKITE UNIVERSITY, COLLEGE OF MEDICINE AND OF HEALTH SCIENCE, DEPARTMENT OF NURSING FOR PARTIAL FULFILLMENT OF BSC DEGREE IN NURSING

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JUNE, 2022

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Acknowledgement

First we would like to thank, we express our deep gratitude to Wolkite University, Faculty of Health Sciences, and Department of Nursing for giving us the opportunity to do this study.Our thanks goes to our advisors Mr. Haile Worke (MSC),Mr.WubshetTesfaye (MSC) for their invaluable time and tireless support and comment from the very beginning of our rsearch to the very end. We are thankful for our group members for their effort and courage through the accomplishment of the proposal.

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ACRONYMS

AA	Addis Ababa
CC	Cervical Cancer
CCD	Cervical Cancer Death
CCV	Cervical Cancer Vaccination
GAVI	Global Alliance for Vaccination and Immunization
HPV	Human Papilloma Virus
HPVV	Human Papilloma Virus Vaccination
NIP	National Immunization Program
STI	Sexual Transmitted Infection
WHO	World Health Organization
KAP	Knowledge,Attitude,Practice

Abstract:

Background: Cervical Cancer is the second most common cancer affecting women of reproductive age .it is sexual transmitted infection. It causes 270,000 annual deaths, of which most occur low and middle income countries. .In Ethiopia an estimated 7600 new cervical cancer cases are diagnosed annually. Cervical cancer vaccination has been consistently shown to be effective in reducing the incidence rate or the occurrence of new cervical cancer cases and mortality from the disease. However cervical cancer vaccination attendance rate are still fare from satisfactory in many country include our country Ethiopia. university student are young student with the most vulnerable age group for HPV infection, and by virtue of their discipline they are expected to have good knowledge and attitude towards HPVV as well as HPV infection and its relation to cervical cancer decrease the burden of cervical cancer. However, the knowledge and attitude on cervical cancer and cervical cancer vaccination among college student in Ethiopia has not been adequately studied

Objectives: The aim of the study is to assess knowledge, attitude and practice towards cervical cancer vaccination among undergraduate regular female students at WolkiteUniversity Ethiopia 2022.

Methods: Institution-based cross-sectional study was conducted onsystematically selected 321 female students at WolkiteUniversity from March to jun, 2022. Thedata was collected by using written questioner by trained three BSC nursing students. Data first was entered in toSPSS statistical software version 21 for analysis.

Chapter one

1. Introduction

Human papilloma virus (HPV)is the most common sexually transmissible infection (STI)in the world, with a high negative impact on individual social life. In their life time, sexually active women and men will be infected. At least once (1),without necessarily developing any pathologies. Belonging to the papilloma viride family, HPV is a small, double standard DNA virus classified in two categories: low risk HPVs (LR-HPVs) responsible for anogenital and cutaneous warts, and high-risk HPVs (HR-HPVs) responsible for oropharyngelal (oral, tonsil, and throat areas) cancer and anogenital cancer, anal vulviar,vaginal and penile cancers(2-6).cervical cancer (CC),the third most prevalent cancer in women(7),is an HPV related disease for which the burden is the most blatant, as it leads to high mortality in women of HPV after breast cancer (8). Overall,the epidemiologic distribution of HPV infection and HPV-associated burden vary significantly across the world, and the morbi-mortality-associated factors including geographic, socioeconomic,cultural, and genetic factors related to viral genome variability as well as intrinsic individual factors such as age, gender, anatomic site and health state(32).the three types of currently approved HPV vaccines, are effective in reducing HPV infection and HPV-related disease incidence, as reported in several world regions.

This effectiveness line in the fact that they target and induce immunity against LR- and HR-HPVs responsible for 70 and 90% of genital and cutaneous wart and cancers, respectively

However, despite the proven efficacy of HPV-associated cancer and disease remains high.

Epidemiological surveillance of HPV infection and related disease represents a crucial topic for monitoring and evaluation of the three currently available antiviral prophylactic vaccines (2-,4, and 9-valent vaccines) as well as their acceptance all over the world. Moreover, knowledge of HPV infection characteristics and evolution at the molecular level allows for abetter understanding of the actual distribution of the burden of HPV- related disease and their impact. This would in turn inform new therapeutic strategies for the development of next generation antiviral vaccines, to overcome the shortcomings of current prophylactic regimen including high costs, limited antiviral protection spectrum, and immunization management.

1.2. Statement of the Problem

Cervical cancer(CC) is the second most common female cancer, affecting women in reproductive age (1). It causes 270,000 annual deaths, of which most occur in low- and middle-income countries .Almost every cases of cervical cancer are caused by the Human Papilloma Virus [HPV] which is transmitted by unprotected sexual intercourse (1).oncogenic HPV infection is the necessary case of CC. According to the World Health Organization [WHO], all sexually active individuals acquire this sexually transmitted infection [STI], once or repeatedly in their lives, usually shortly after onset of sexual activity (3). The prevalence of cervical cancer in developing world is 59.4 per 100,000 (4).In Africa the estimates indicate that every year 78,897women are diagnosed and 61,671 die from the disease (5). According to the WHO estimates, in Ethiopia 7,600 women are diagnosed with cervical cancer and roughly 6,000women die of the disease each year (6). Most women present with advanced stages of cervical cancer with poor prognosis(7). Thus, in Ethiopia, only 0.6% of all women, 1.6% of urban and 0.4% of rural women aged 18-69yrs vaccinated(8).

The WHO recommend that Human Papilloma Virus vaccination(HPVV) should be introduced into national immunization programme in countries where prevention of CC is a public priorities and its pro-grammatically feasible economically sustainable and cost-effective to do so(2).The major factors associated with (CCV) and screening are inadequate knowledge and attitude about the disease,vaccination and screening program in Ethiopia(9).In Ethiopia launched the HPVV for the first time with the supports of the Global Alliance for Vaccination and Immunization(GAVI)in 2018. the vaccine is being delivered primarily through a school based approach to reach all eligible girls(10).the major challenge for low coverage of the vaccination is lack of knowledge and attitude toward the vaccination next to accessibility of vaccine (17). This study aimed to asses the knowledge, attitude and practice regarding to HPVV among female students in Wolkite university.

1.3. Significance of the study

The finding of this study is expected to contribute the following

The finding may help to assess knowledge, Attitude and Practice of female students towards human papilloma virus vaccination.

The finding of study may be important to government, policy maker and other responsible body to plan necessary training program and intervention to improve the problem

The study will help to provide baseline information on knowledge, attitude and practice human papilloma virus vaccination among female students to other researcher to work further.

Ther was a gap on knowledge, attitude and practice on human papilloma virus vaccination done study in this area.so this study was aimed at assessing the knowledge, attitude and practice on human papilloma virus vaccination in Wolkite University

Chapter 2

Literature review

2.1 .Knowledge towards HPV vaccination

A cross section study conducted in India toward knowledge attitude and practice among university students show that 200 students were participated to fill a questionnaire which covered demographic details,knowledge and practice towards HPV vaccination for CC prevention.majority of the students knew that HPV may cause cancer in humans(94%),leading to CC in females (84%),only (34%) know cause in males, and the availability of the vaccine in India was (79%).so the knowledge about significance of HPV vaccination was good(19).

Another study in Singapore ware conducted cross section at tertiary institution there 244 students were participated the age group 15-22 years.252 (98.8%) students were unmarried and 240 (94.1%) had never had sexual intercourse. 96(41.7%) lack of information for vaccination(20).

A cross sectional study conducted in Nigeria knowledge attitude and uptake of HPVV among female university student 215 students were participated 133 (61.9%) of the student were average age of 20-24 years. (31.2%)of the respondent had on overall good knowledge while 165 (35.5) had poor knowledge toward HPVV(21).

A cross sectional study conducted knowledge attitude and practice towards among college students in china 827 participants from those student show that 40% knew that the HPV can be classified as high risk HPV and law risk HPV. Nearly half of student knew HPV with CC 52.8%, 49%of the participants knew that the best period of the vaccine, 64.2%of the participant knew that HPVV can effectively prevent CC,and 65.9% of the participant knew regular screening should be performed after vaccination(29).

A cross sectional study conducted knowledge and attitude towards HPVV in Saudi show that from 996 participant students only 31% participant were that knew that the vaccine against CC,among those 30% recognized that the recommended age for HPVV, 12% students were knew genital warts can be prevented by CCV(30).

The knowledge about, beliefs and attitudes of medical students regarding vaccination against the HPV in South Africa: A Cross-Sectional Study. More than two-thirds (71%) of the respondents were aware of HPV and among them 81.2% mentioned vaccination against HPV. The majority (81.7%) were aware that persistent HPV infection is a cause of 10 cervical cancer. Only 14.5% of the medical students knew that between 60 – 80% of CC is caused by HPV types 16 and 18. Overall, knowledge regarding HPV infection was low among the medical students as the average score was 3.23(22).

CC and HPV Knowledge and Acceptance of Vaccination among Medical Students in Southwest Nigeria Most respondents were aware of CC(95.4%), HPV (85.4%) and HPV vaccination(69.3%) and the most common source of information was school teaching. Good knowledge of cervical cancer, HPV and HPVV was demonstrated by 51.8%, 67.1% and 21.1% respectively; only 39.6% fully accepted HPV vaccination. Costs were the obstacles identified to receiving vaccine recommending it to others. Older age and higher levels of study were significantly associated with good knowledge of HPV. Good knowledge of HPV and HPV vaccination respectively were significantly associated with full acceptance of vaccination(23).

A cross sectional study conducted in Addis Ababa(A.A) toward correlated of knowledge on CC screening among female students, 85.9% of the respondents are knew HPVV prevent the development of CC(9).

A cross sectional study was conducted in Gondar 267 females student participated more than half of the participant 59% not knew the main cause of CC ,19% identified HPV is the main cause of CC(24).

2.2 Attitude towards HPV vaccination

A cross sectional study was conducted awareness and acceptance of HPVV among student in Malaysia had a positive attitude to HPVV with mean score of 3.8,88.2% of the participant HPV infection is sever disease and HPVV is helpful to prevent CC.among those 64.8%had positive attitude toward the safety of the vaccine,25% of the participant had an attitude being they are at risk of HPV infection ,71.4% of the participant felt that there is less risky involved in being vaccinated than being infected by HPV,90% of participant would want their children to be infected with HPV and 87.5% of the participant would vaccinate their children in at future(25).

knowledge, attitude and acceptability HPVV among university students in Indonesia cross sectional study show that students had positive attitude toward the HPVV and vaccination .70% of the participated believed HPVV is safe and highly effective but among the participant only 21% of agree that the vaccination is not required for non-healthy individuals,90.3% of the students that HPVV should be integrated in national immunization program (NIP)(26).another cross study conducted in benin-city,Nigeria among female students indicates that high proportion of student (61.8%) had positive attitude(21)

A cross sectional study toward correlated knowledge on CC among university female students in AA ,89.6% of the respondent belief 9-18 age should take the vaccine to prevent CC(9)

2.3 Practice towards HPV vaccination

Practices toward and perceived barriers to HPV vaccination were also evaluated in singapor. Notably, only 9.8% of the respondents had been vaccinated. The majority (88.4%) of the 230 unvaccinated individuals perceived HPV vaccination to be effective. However, only 134 (58.3%) of them had the intention to receive HPV vaccination.(20).

Practice of human papillomavirus vaccination among primary school students in minjar-shenkora district, north shoa zone, amhara regional state, Ethiopia,2020,

A total of 591 students participated in the study with a response rate of 96.3%. of the total, 393 (66.5%) (CI 0.63- 0.7) particepants have ever received HPV vaccine, of whom 249 (42.1%,CI 0.58-0.67) them received one dose and the rest 144 (24.4% CI0.32-0.42) received two doses.

One hundred ninety-eight students (33.5%) students were not receiving the vaccine and they were responding the reasons for failure to take the vaccine were: 75 (38%) worried about the vaccine safety,72 (36.7%) students did not know where to get the vaccine, 33 (5.6%) not being informed by health-care providers and 18 (3%) believe no need for the vaccine (31).

Chapter three

Objective of the study

3.1 General objective of the study

To assess knowledge, attitude and practice towards human papilloma virus vaccination among female students in Wolkite university southern Ethiopia, 2022

3.2. Specific objectives

To assess knowledge of female students on human papilloma virus among study population.

To determine the practice of female students on human papilloma virus vaccination

To assess the practice of human papilloma virus vaccination

Chapter four

Methods and materials

4.1Study area

The study was conducted in Wolkite Universite,Wolkite university is one of the third generation federal university in Ethiopia currently rank #39 across the country.Wolkite University(WKU) is founded in 2011, currently located at SNNPR,Gurage Zone,170 km south west of Addis Ababa on the way to Jimma. Currently the university offers under Graduate 8175students Post Graduate786 students and PHD Programs.

4.2Study design

An institutional based cross-sectional study was used.

4.3 Study period

The study period was from May, 5 to May, 25 2022

4.4 Sourceof population

The source populations of study were female students at Wolkite University in 2022.

4.5 Study population

Female students who were available during the time of data collection period

4.6 Eligibility criteria

4.6.1 Inclusion criteria

All regular female students in Wolkite University.

4.6.2 Exclusion criteria

Who were absent during interview

4.7 Sample size determination

The sample size was calculated by using single population proportion formula, total population is by using single population proportion 66.5% HPV vaccinated ( ) with 95% confidence interval and 0.05 margin of error =

Za /2 is the standard z score 95% confidence level

p is the proportion of student HPV vaccinated

D is the margin of error

$N = z^2 xp(1-p/d^2) = 1.96^2 x\ 0.665(1-0.665)/0.05^2)$

(3.8416 x 0.223)/0.0025 =343

Our source of population is less than 10,000 which were 2045,we used correction formula n=n/N=343/1+343/1.17=292

Non responsive rate (10%) add=29

So our final sample size was 292+29=321

4.7.1 Sampling technique procedures

There are 3045 female students who are assigned in 8 collages and 1 school of law . We were collected list or number of female students from each collage from the registrar and then we prepared sampling frame from two randomly selected collage and 13 departments from those selected collage. Number of student in 13 randomly selected department were 642. The sample size was proportionally allocated for selected 13 department of WolkiteUniversity according to the total number of students in each department. Then to obtain the representative sample we use systematic random sampling technique.While doing so, the sample frames were list ,then individual sampling fraction (skip interval) will be calculated every k^{th} interval , which was every (2 k) . The first female student was randomly selected using simple random Sampling technique taken it as starting point which was 2^{nd} student. So finally female student will be selected every 2^{nd} for example (2^{nd},4^{th},6^{th} …etc) until the total 321 female students were selected.

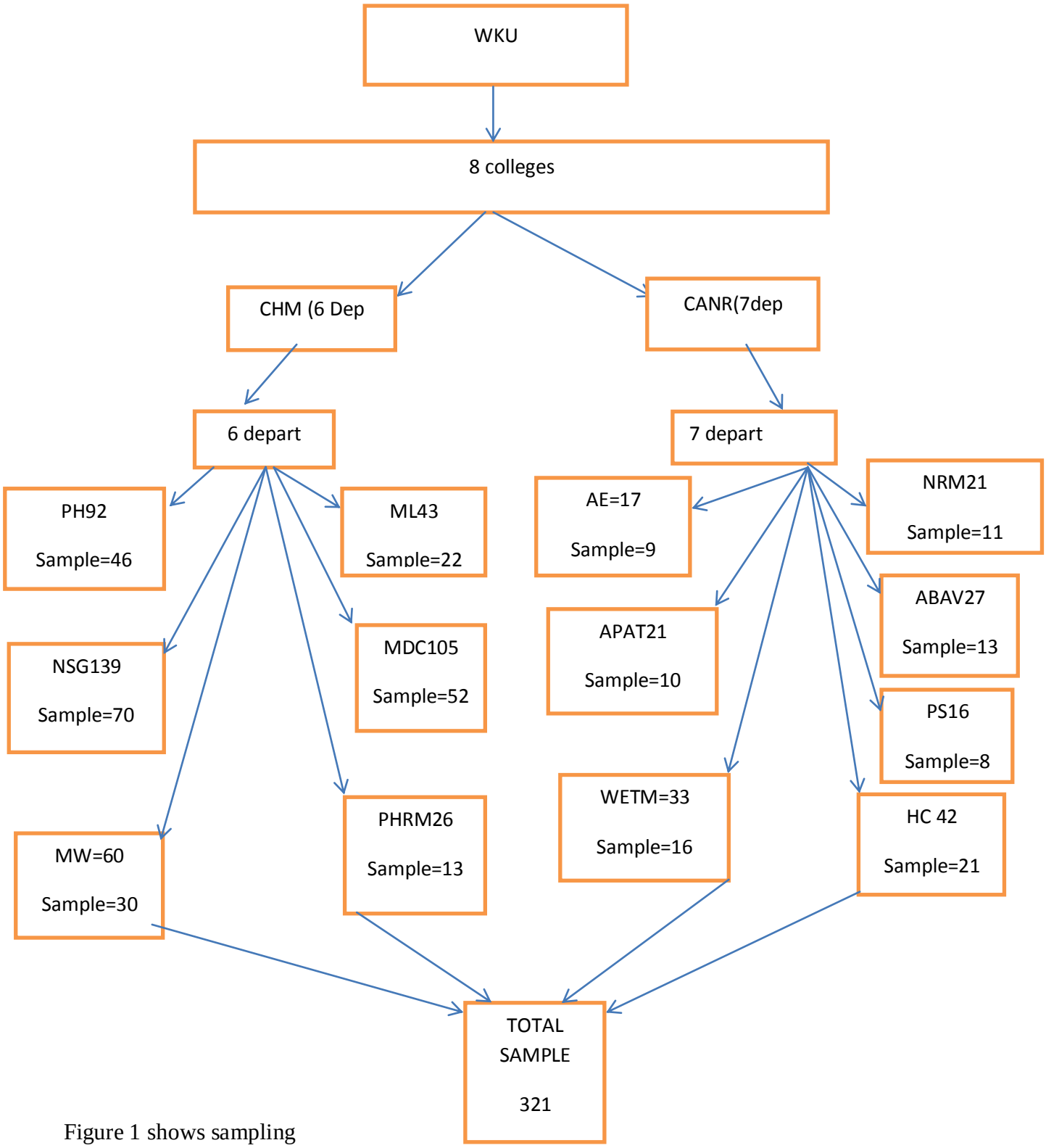


Figure 1 shows sampling

4.7.2 **Data collection tools and procedure**

4.7.2.1 **Data collection tools**

Data collection tools were adapted after review of relevant literature. The questionnaire was prepared in English language; during preparation the logical order from simple to complex strategy to maintain and put sensitive questions at the end.

4.7.3.2Data collection procedure

After explaining the purpose of the study based on their willingness to participate in the study with structured, standardized self-administered questionnaire was made which was modified contextually, distributed to respondents and collected by principal investigators.

**Data processing and analysis **

Data were entered into SPSS version 21 for analysis. Statistics such as frequency distribution, mean,and percentage was computed to describe the major variable of the study

4.8 Operational definiations

Knowledge: the knowledge part questionnaire were 10 questions, give one for correctly answer and 0 zero for incorrect answer or did`t know response, then the total knowledge score was change in to percentages and we were classified as poor knowledge that score ≤ 49 % and good knowledge who score ≥ 50.

Attitude: the attitude of the students toward HPVV will computed by asking 10 question that have 5 point liker scale ranging from strongly agree to strongly disagree then we will classified as foverabel attitude who score above the mean while un foverable attitude who score below the mean.

Practice:the practice is assessed by, a student who ever received HPV vaccination at least once and measured as binary outcome; practiced and not practiced.

4.9 Data quality assurance and control

The collected data was checked for its consistency and completeness before any attempt to enter code and analyzing.

4.**11Ethical consideration**

The study was approved by our advisors in WolkiteUniversity College of medicine and health science school of nursing ethical review board. A written letter got from Wolkite university to communicate with Wolkite university specialized teaching hospital (WKSTH) and different administrations, the objective of the study will briefly explained to the concerned body and verbal informed will be obtained during the data collection from each respondent who participated in the study. The confidentiality will be maintained during exploring of the data.

Chapter five

4.1. Socio-demographic characteristics of study participants

From three hundred and twenty one (321) administered questionnaires to WolkiteUniversity regular female students , 321 were returned completely with a respondent rate of 95.2%. Two hundred one (62.6%) of the respondent were age between 19-24 years.The mean age of the participants was 20±1.4 standard deviation. Among the participant 248(77.3%) were live in urban area. And 77 (24.0%) were orthodox, 100(31.2%). As the table reveals that the majority (49%) of respondent were fourth years students.

Variable	frequency	percent	Valid percent	Cumulative percent
Age				
19-24	201	62.6	62.6	62.6
25-29	95	29.6	29.6	92.2
>29	25	7.8	7.8	100.0
Residence				
Urban	248	77.3	77.3	77.3
Rural	73	22.7	22.7	100.0
Religion				
Orthodox	77	24.0	24.0	24.0
Muslim	100	31.2	31.2	55.1
Protestant	115	35.8	35.8	91.0
Others	29	9.0	9.0	100.0
Academic year				
First year	30	9.3	9.3	9.3
Second year	77	24.0	24.0	33.3
Third year	57	17.8	17.8	51.1
Forth year	157	48.9	48.9	100.0

4.1 Level of knowledge towards HPV vaccination

As shown below, the majority (88.5%) of respondents have poor undertstanding towards human papilloma virus vaccination while 11..5 percent of respondents have good knowledge. It is concluded that there is gap of understanding about human papilloma virus vaccination among students of WolkiteUniversity (**figure 1**)

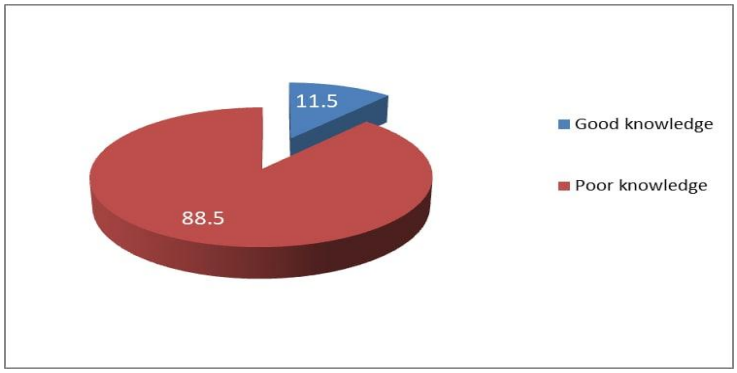


Figure 1: knowledge towards human papilloma virus vaccination

4.2. Attitude human papilloma virus vaccination

From 321 respondents, 153 (47.7%) respondent have had favorable attitude towards human papilloma virus vaccination and the rest 168 (52.3%) have had unfavorable attitude toward vaccination. Therefore there is also gab of attitude towards human papilloma virus vaccination among respondents

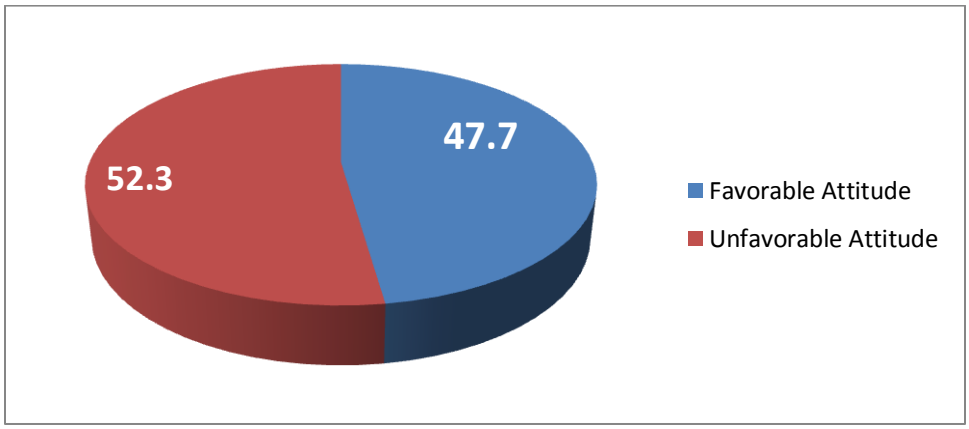


Figure 2shows attitudes of human papilloma virus vaccination among female students in WolkiteUniversity.

4.3. Practice towards human papilloma virus vaccination

It is shown in the below graph that large proportion (93.1%) was not vaccinated and insignificant proportion of respondent was vaccinated.

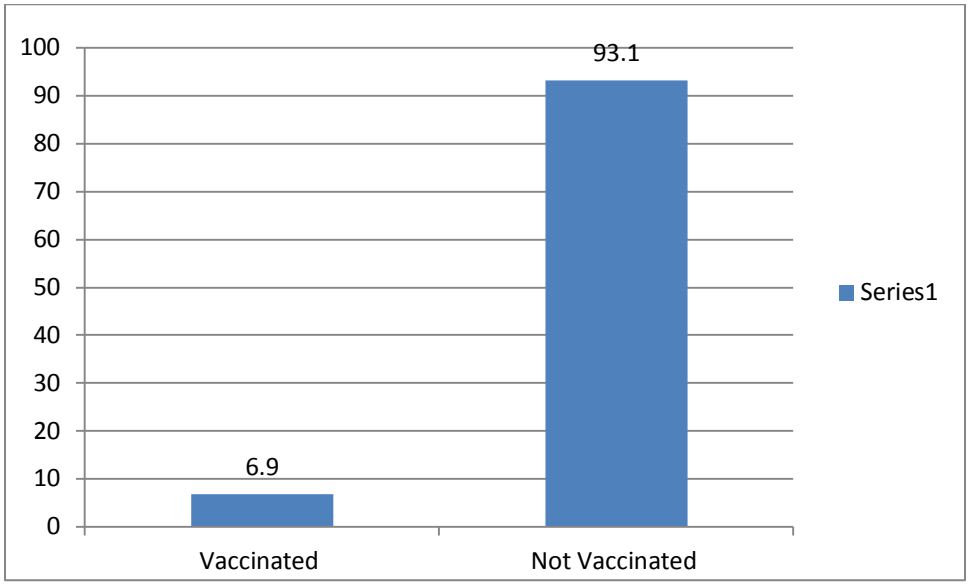


Figure 3: vaccination status of the respondents

Chapter six

Discussion

Present study found that 206(51.2%) (46.3, 56.7) CI =95% of the participant had good knowledge.

This is higher than studies done in north India, Nigeria and India 42%, 31.2% 44.9% respectively. The possible explanation for this difference may be due to difference in year of study which currently increases the use of technology to get information(19, 21, 30).

This study has found that 336(83.3%) of the participant had heard about cervical cancer , it is in line with the research done in turkey 87.2%(27), but less than when compare with research done in southwest Nigeria 95.4%. This may be participants in Nigeria were medical students(23).

Even though most participants heard about CC, only 144 (35. %) of them Knew that the major cause of CC HPV. It was less compared to finding done on Hong Kong, china (28). This variation may due to that the sample size was high in Hong Kong. HPV infection is sexually transmitted, but only 26.3% of the respondents in our study knew that it's sexually transmitted. It is very less compared to the same research done on china (46.8%), Hong Kong (76.9%) and turkey 37.5% these may it be due to health policy as well as emphasis given for HPV infection in the nation .(29)(28)(27)

Although 284(70.5%) of the participants heard about vaccination, only 255(63.3%) were aware of it is a preventive method. This is in line with study finding done in china (64.2%)(19) but slightly less than the finding done in India. Only 58(14.%) of respondent knew that the correct type of vaccine in Ethiopia.

In our study we found that under half of 186(46,2%) participants knew the total dose, 185(45.9%) recommended age and 112(39.6%) gape of each dose of vaccine in Ethiopia, it's very good compare to the same paper in Nigeria 18.1% and less compare study done on china (49%) this might be due to high coverage and availability of vaccine and health education in china.(21)(29).

Over all this study has found that 216 (53.7%) participants with a 95 % CI (41.5, 51.4) had favorable attitude towards HPV vaccination. This is less as compared to the studies done in Malaysiaand India (88.2%,61.8%) respectively (21) (25). This discrepancy might be due to study participate of Malaysia and India were medical,dental and health science students.

The proportion of students that had favorable attitude towards severity of CC were 84.8%it's in with study done in china 89.7(28). Among the participants, around 63.3% had favorable attitude towards safety and effectiveness of the vaccine. Our study has also found that 255(63.3%) of participants were volunteer to take vaccination if vaccine have no any side effect and effective. This value also good compare to the study in hone Kong china 10.2%(28).

The proportion of students that agree with the idea that 9-14 age of girls should take the complete vaccine to prevent HPV infection were 69.6% .

The proportion of respondent that agree, getting vaccination center is difficult were 50% this is less compare to Hong Kongchina (28).

Practices toward and perceived barriers to HPV vaccination were also evaluated in singapor. Notably, only 9.8% of the respondents had been vaccinated. The majority (88.4%) of the 230 unvaccinated individuals perceived HPV vaccination to be effective. However, only 134 (58.3%) of them had the intention to receive HPV vaccination.(20).

Practice of human papilloma virus vaccination among primary school students in minjar-shenkora district, north shoa zone, amhara regional state, Ethiopia, 2020,

Chapter seven
Conclusion and recommendation

4.4. Conclusion

On the basis of information collect from the 321 respondents, this study has come up with the following conclusions.

- The study found that the majority of respondents have poor understanding about human papilloma virus vaccination
- Ther is also documented that there gap of attitudes about human papilloma virus Vaccination
- The study has found that the majority(93.1%) of respondents were not vaccinated

4.5. Recommendation

On the basis of information collect from the 321 respondents, this study has come up with the following recommendation

- Ministry of health and ministry of education should work cooperatively for sustainable education and training programme towards human papilloma virus and its vaccination.
- Wolkite universities work for behavioral change about knowledge, attitude and practices towards human papilloma vaccination.
- Focus needed from ministry of health and mass media mobilization and education about cervical cancer and its vaccination.
- researchers do further study at schools, community and national level to all target females

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Questioner

Hello! Dear participants, this questionnaire was prepared by three bachelor of science students at Wolkite university in the field of BSc in nursing to assess the knowledge, attitude and practice of cervical cancer vaccination among undergraduate female student from 2022, Wolkite Ethiopia.

The aim of this study is to assess the knowledge, attitude and practice of cervical cancer vaccination in undergraduate female students. The study will identify the magnitude and provide baseline data to find possible solutions. During the study, your honesty will help us to get accurate information which is a cornerstone for accurate results and accurate possible solutions. All your information will be kept confidential, code is used instead of name or anonymity will be secured. There will no payment for your participation to the study, but we greatly thank you for your participation and you have the right to refuse or withdraw from participation at any time.

Are you voluntary to participate?

A. Yes, I have to understood the above information and I am volunteer to participate in a study

Participants Signature ---------- Date ----------

Data Collector's Signature ---------- Date -------

B. No, if not voluntary please stop here.

If you are voluntary to participate in the study; we kindly request you to provide your genuine response for the questionnaire. Thank you for your volunteer participation!

Part I: Socio demographic characteristics

1.	Age (in years)	_____
2.	Residence?	1. urban 2. Rural
3.	What is your religion?	1. Orthodox 2. Muslim 3. Protestant 4. Others
4.	Academic year	1. First 2. Second 3. Third 4. Fourth 5. Fifth and above

Part II: Knowledge assessment tool on cervical cancer vaccination

Instruction: please, encircle the number listed before the option to indicate your response and fill the blank spaces for theses without option

1.	Have you ever heard about cervical cancer	1. Yes 2. No
2.	If yes, what is your source of information? (more than one answer is possible)	1. News Media 2. Brochures, posters, books and other printed 3. Health workers 4. Family 5. Religious leaders 6. Teachers 7. from hospital 8. Other (specify)----------
3.	Do you think that cervical cancer is sexually transmitted?	1. Yes 2. No
4.	Is cervical cancer caused by human papilloma virus?	1. yes 2. No
5.	Do you think that cervical cancer is major health problem in Ethiopia?	1. Yes 2. No
6.	Is sexual active women are susceptible cervical cancer in their lives?	1. Yes 2. No
7.	Is that unprotected sexual intercourse is risk for cervical cancer?	1. Yes 2. No
8.	People who have multiple sexual partners are at risk for cervical cancer?	1. Yes 2. No
9.	Do you think that avoid multiple sexual partner, Use of condom,Vaccination of human papilloma virus and avoid unprotected sexual intercourse are used to prevent cervical cancer?	1. yes 2. No
10.	Have you heard about cervical cancer vaccination	1. 1 Yes 2. No
11.	If yes where did you get the information? (more than one answer is possible)	1. News Media 2. Brochures, posters, books and other printed 3. Health workers 4. Family 5. Religious leaders 6. Teachers 7. from hospital 8. Other (specify)----------
12.	Cervical cancer vaccination is amethod to prevent	1. Yes

	cervical cancer?	2. No
13.	If Yes, Which human papilloma virus vaccinationdo you Know in Ethiopia?	1. Cervarix 2. Gardasil® 3. I don't know
14.	At what year of age a women is recommended to take cervical cancer vaccination in Ethiopia?	1. <9 2. 9-14 3. 15-30 4. >30
15.	How much total dose of cervical cancer vaccination is needed to prevent Human Papilloma Virus?	1. One dose 2. Two doses 3. Three doses 4. I don't know
16.	What is the gap between each dose?	1. 3 months 2. 6months 3. 9 month
17.	Do you believe that the vaccine is not 100% prevent cervical cancer?	1. Yes 2. No

Part III: Attitude of cervical cancer and vaccination

22	Do you believe that cervical cancer is a sever disease?	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
23	Do you believe Cervical cancer can be cured if detected and treated early?	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
24	Do you believe that Cervical cancer vaccination is necessary for prevention of cervical Cancer?	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
25	All females between 9-14years should take human papilloma virus vaccine against to prevent cervical cancer.	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
26	Do you believe that cervical cancer vaccination is expensive?	1. Strongly agree 2. Agree

		3. Neutral 4. Disagree 5. Strongly disagree
27	Is not easy to get the place to receive cervical cancer vaccination?	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
28	If cervical cancer vaccination is free and no side effect will you be received	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
29	Do you believe that receive cervical cancer is shamed activity?	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
30	Do you agree that your parent change your decision to receive cervical vaccination?	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
31	Do you agree that doctor recommendation affect your decision to receive cervical cancer vaccination?	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree

Part III: Practice of taking vaccination against cervical virus

32.	Have you ever vaccinated to prevent cervical cancer?	1. Yes 2. No
33.	If yes how many doses did you take?	1. One 2. Two 3. Three