



Wolkite University

College of medicine and health science

Department of public health

A RESEARCH SUBMITTED TO THE COLLEGE OF MEDICINE AND HEALTH SCIENCE, DEPARTMENT OF PUBLIC HEALTH, WOLKITE UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF PUBLIC HEALTH.

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS HEPATITIS B VIRUS INFECTION PREVENTION AMONG WOLKITE UNIVERSITY HEALTH SCIENCE STUDENTS GUBRE SUBCITY , CENTRAL ETHIOPIA 2024/25 G.C.

January, 2025

WOLKITE, ETHIOPIA

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ACKNOWLEDGEMENT

First of all our deepest thanks goes to the almighty God for his strength, wisdom and protection in our journey from the beginning until now. Secondly, we would like to thank Wolkite University College of health science, department of Public health next to God for giving us this opportunity and for their initiation and encouraging to do this research proposal. Thirdly, we would like to express our deepest gratitude for our advisors Asst Professor Abate.L and Mr Hamid Z, (Mph) for their advice, timely comment, suggestion and guidance throughout the proposal developments. Finally, We would like to thanks wolkite university health science students for their active participation and all others who stand beside us, for their unreserved support, encouragement and assistance during under taking our research Report works.

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ABSTRACT

- **Background:** Hepatitis B is an infectious disease caused by the hepatitis B virus (HBV) which affects the liver. Though it can be prevented by proper knowledge, attitude and practice it is still affecting and one of the leading cause of death from infectious diseases.
- **Objective:** To assess knowledge, Attitude and Practice towards prevention of Hepatitis B viral infection among Wolkite university health science students.
- **Method** Institution based cross sectional study was conducted among Wolkite university health science students. The study population was selected among Wolkite university health science students with a sample size of 226. Data was collected by using self-administered, structured and pre tested questionnaire. Data was cleaned, coded and entered into computer and analyzed using SPSS version 27.
- **Result:** All participants (226) have responded which makes yielding response rate 100%. Regarding the overall knowledge, the study showed that the majority (67.7%) of respondents have good knowledge whereas the remaining 32.3% have poor knowledge Following this when we come to attitude 76.5% of respondents held a positive attitude, whereas the rests 23.5% have negative attitude and greater than half of the respondents (56.6%) have good practice and the rest (43.4%) have poor practice. However most of the students (75.7%) have tested for hepatitis virus in their life, only 27.9% of the respondents have received hepatitis B vaccine Among them 21.7% have completed their vaccine.
- **Key Words:** Hepatitis B, KAP, Wolkite University

- **Conclusion:** Based on this study finding more than half of students have good knowledge, positive attitude and good practice.

ACRONYMS

No	Acronym	Full words
1	CI	Confidence interval
2	HBV	Hepatitis B Virus
3	HBs Ag	Hepatitis B surface Antigen
4	HCC	Hepatocellular Carcinoma
5	HCWs	Health Care Workers
6	HIV\AIDS	Human immunodeficiency virus\Acquired immune Deficiency Syndrome
7	KAP	Knowledge, Attitude and Practice
8	SPSS	Statistical Package for Social Science
9	WHO	World Health Organization

1. INTRODUCTION

1.1 BACKGROUND

Hepatitis B virus (HBV) infection is one of the major public health problems in the world. According to the recent estimates, about one-third of the world population is infected with HBV [1,2]. Hepatitis B virus (HBV) infection is a serious global public health problem. HBV is infectious and the most common cause of chronic hepatitis, liver cirrhosis and hepatocellular carcinoma [3,4]. HBV can be easily transmitted from one infected person to another by blood to blood contact, mother to child, unsafe sexual intercourse, common use of barber shop and beauty salon materials [5]. The prevalence of chronic hepatitis B(CHB) infection widely varies across the world (0.5-20%), due to variations in age at the time of infection and mode of acquisition [1]. There is an estimated 257 million people living with CHB in the world [6]. Southeast Asia and sub-Saharan Africa bear most of the burden of CHB, accounting for more than three quarters of the people with CHB in the world [7].

Ethiopia is one part of the world where the burden of HBV infection is considered to be high [8]. A systematic review and meta-analysis conducted in Ethiopia showed that the overall pooled prevalence of HBV infection is 7.4%. In addition its pooled prevalence among subgroups also showed that 5.2% in human immunodeficiency virus (HIV) infected individuals, 8.0% in community based studies, 8.4% in blood donors, 11.0% in immigrants and 6.9% in other groups [9]. An old clinical study done in our country showed that liver disease accounted for 12% hospital admissions and 31% hospital mortality [10].

HBV infection can be prevented by adhering to universal precautions including the use of protective barriers like gloves, proper sterilization of medical equipment, proper hospital wastes management system and vaccination [11,12]. Moreover, post-exposure prophylaxis (PEP) can be used as a means of HBV prevention after accidental exposure to contaminated blood or body fluids [11,12,13]. However, studies have indicated that there is a clear gap of knowledge among trainees of health profession towards the risks of occupational exposure to HBV infection [14 15]. In Ethiopia, data is deficient regarding knowledge and practice towards the occupational exposure to HBV infection among the students of health care professions, increasing the high prevalence of the infection in the general population [5,16,17]. Therefore, the aim of this study was to assess the knowledge attitude and practices of the students of medicine and health sciences towards HBV in Wolkite university.

1.2 STATEMENT OF THE PROBLEM

Hospital acquired infections are a problem in both developed and developing countries and are important causes of death [18]. HCWs are potentially exposed to blood and body fluids containing transmissible diseases and are at increased risk to acquire these pathogens[19,20].Hepatitis B is infectious pathogens, which might be acquired occupationally. Occupational exposure to blood and body fluids occur frequently among health professionals [20,21] .Most serious occupational health hazard faced by HCWs worldwide is exposure to blood borne pathogens; these blood-borne pathogens are mainly Hepatitis B, C, and HIV infections .

Hepatitis B is by far the more infectious than the other blood-borne pathogens, it is one hundred times more contagious than HIV/AIDS, the estimated risk of a single needle stick injury indicate a risk of 300 hepatitis B virus infection (30% risk), 30 hepatitis C virus infection (3% risk) and 3 HIV infection (0.3% risk), per 1,000 respective exposures [22]. A serologic study conducted in the United States found that, health care workers had a prevalence of HBV infection approximately 10 times higher than the general population [19].

World health organization Report estimates that 40% of HBV infection is a result of occupational exposure, it has been estimated that 14.4% of hospital workers are infected with HBV. Nurses were most commonly exposed to infection (41%) than other health care workers.[5]. Although nurses are clearly a high-risk sub group for such events, nursing students may be at a similar or even at a greater risk due to their limited clinical experience [15].Hepatitis B infection is common due to the gap in the sterilization technique of instruments or due to the improper hospital waste management as 10% to 20% health-care waste is regarded hazardous and it may create a variety of health risks. Among the health-care personnel, HBV is transmitted by the prick of infected, contaminated needles and syringes in the skin, or through accidental inoculation of the minute quantities of blood during surgical and dental procedures. Knowledge regarding the hepatitis B virus and safety precautions is needed to minimize the health-care settings acquired infections among health personnel.[5]

Apart from the HCWs, trainees in the health care professions are also exposed to an equal magnitude of occupational risk of HBV, as they work in the same health care delivery system. In fact, the risk for accidental exposure among the trainees could be higher due to their lack of experience, insufficient training, duty overload, and fatigue.[16]

Especially many health science students have a risk for exposure during their clinical attachment. Thus to limit the risk of transmission of HBV infection, knowledge, attitude & practice towards HBV infection is extremely important. Therefore to decrease this gap this study was tried to identify the level of the knowledge, attitude & practice towards HBV infection.

1.3 SIGNIFICANCE OF THE STUDY

Prevention is the only safe strategy against high prevalence of HBV, having good knowledge positive Attitude and good practice towards this infection are the corner-stones of preventing the spread of the Virus .Since health science students are at higher risk of needle stick injury and exposed to blood and blood products, conducting a study is crucial to reduce the transmission of the virus. The significance of this study is to describe the knowledge, Attitude and Practice towards Hepatitis B viral infection among Wolkite university health science students which enable to identify the gap of KAP in the study population in order to reduce all the effects of HBV on students. The result of this study will assist the University, the Hospital manager, Wolkite town administration, the clinical facilities managers governmental and non-governmental organizations in collaboration with Ministry of Health to be aware of the extent of vaccination uptake, and develop strategies for promoting awareness creation and improving HBV immunization uptake ,also end results of this study will be used as a base line for further study.

2. LITERATURE REVIEW

Hepatitis B viral infection is a critical public health problem globally, according to the recent study estimation about one third of the world population is infected with HBV[1,2]the prevalence of chronic hepatitis B infection widely varies across the world (0.5-20%),due to the variation in age at a time of infection and mode of acquisition, there are an estimated 257 million peoples living with CHB in the world[6] The Hepatitis B Foundation (HBF) estimates that there are more than 2 billion peoples infected with HBV, of whom about 400 million people are chronically infected and approximately 10-30 million people become infected and 1 million people die from HBV induced liver disease (chronic hepatitis, cirrhosis, and hepatocellular carcinoma) per year, which equates to about 2 HBV-related deaths occur per minute worldwide [1]. And the Indian subcontinent between 10-60% of the population has evidence of infection, and 2-7% is chronic carriers. Low prevalence areas are estimated to have a prevalence of chronic infection less than (2%) which includes most of the North American countries [21].Australia and most of Western Europe including the United Kingdom (UK). Overall, approximately 45% of the global populations live in areas of high chronic HBV prevalence. In southeast Asia and sub-saharan Africa bear most of the burden of CHB accounting for more than three quarters of the peoples with CHB in the world.[8] Africa, infections with HBV play a major role in the etiology of most liver diseases. The WHO African region includes all of Sub-Saharan Africa estimated hepatitis B surface antigen (HBs Ag) Blood prevalence ranges between 5% and 19%.Between 56% and 98% of the adult population shows evidence of past exposure to and infection with HBV.[3]

A community based HBV prevalence study in the capital city of Ethiopia; Addis Ababa has shown a 7% Blood prevalence of HBs Ag, higher in males than females. The age at which 50% had evidence of infection was around 20 years [21]. The crude Blood prevalence of HBs Ag was 14.4%. One or more hepatitis B virus markers were found in 86% of chronic hepatitis, 88% cirrhosis and 78% hepatocellular carcinoma patients studied in Addis Ababa .[17]

KNOWLEDGE

Cross sectional study conducted in China in 2017, only 21% of the participants were able to answer all the general knowledge-related questions correctly [33]. Similarly, a study conducted in Ghana in 2014 revealed that less than half of the participants (46.2%) knew about hepatitis B infection and its disease [25]. Another study was conducted at the University of Kassala, Sudan to assess the non-medical profession student's knowledge and awareness about Hepatitis B and HIV. Regarding HBV, poor knowledge was found among the students. The causes of HBV, and its vaccination were known to 110 (27.8%) and 39 (09.9%) of the students respectively. Only 49 (12.4%) of the students were aware of the symptoms of the disease and 15 (3.8%) had good knowledge of the transmission route, while the prevention methods were known only by 12.7% of the students. [26]

Institutional based cross-sectional study conducted in Bahrdar in 2021G.C on 390 Private Medical/Health Sciences College Students 83.8% had good knowledge. Among the respondents, 94.4% understood that all age groups can be affected by HBV. Regarding the mode of transmission 94.1%, respondents said that contact with blood and blood products of infected patients was one of the mechanisms for the transmission of HBV and 87.7% mentioned that unsafe sex was one of the routes of transmission. In terms of prevention and control of HBV, 367(94.1%) answered that HBV is preventable.[16] A similar study conducted at Gondar University among health science students revealed the field of study was significantly associated with knowledge of HBV infection prevention [23].is study revealed that out of 200 participants, 39% of them have a good practice on hepatitis B infection prevention.[38]. Another study conducted in Woldia University revealed that out of the 200 participants, 96 (48%) have poor knowledge, whereas 104 (52%) showed good knowledge about HBV. Thirty-two percent of 65 (32.5%) of the study participants did not know about hepatitis B post exposure prophylaxis.

ATTITUDE

A study conducted in India regarding attitude towards HBV revealed that The attitude of the students was positive as (96.3%) opined that everyone should get hepatitis B vaccination and (90.1%) thought that the vaccine is certainly helpful. [18] Another study conducted in Khartoum Sudan on 110 nurses and midwives in two maternity hospitals to assess attitude towards HBV,

86.4% showed a favorable attitude towards preventive measures of HBV like instrumental sterilization, wearing gloves, HBV Vaccination and post exposure prophylaxis. 64.5% believe instrumental sterilization is important to prevent transmission, 72.7% of them believe wearing gloves is important to prevent transmission, 82.7 % believe vaccination is important protective major against HBV[24].

Similar study conducted in Bahrdar on 390 Private Medical/Health Sciences College Students questions prepared to assess the attitude of respondents, 44.6% of the study participants had a favorable attitude. To assess their attitudes toward the vaccine of HBV, 49.2% of respondents agreed that the vaccine was safest and effective. Stigma on HBV carriers, we asked whether they are comfortable in treating HBV patients and 32.6 % of the students had responded in agreement to the inquiry. On the other hand, 75.9 % of the students think that all patients need to be tested before receiving any health care services [16]. Another study conducted in Bahrdar University towards HBV among health science students revealed that Of 98 (23.2%), the study participants had no concern being infected with HBV, and of 143 (33.6%), participants had a belief that changing glove is a waste of time. In contrast of 274 (64.9%), the participants believed that HBV vaccine is safe and effective. Of 307 (72.7%), study participants believed that following infection control guideline would protect them from HBV infection, but only 31.3% of participants believed that post exposure prophylaxis could prevent from HBV infection. The average positive attitude levels of the professionals were 40.3%. [16]

PRACTICE

A cross-sectional study conducted in Khartoum Sudan on 110 nurses and midwives in two maternity hospitals to assess their practice towards HBV prevention, 65% of had a safe practice regarding HBV infection. 90% of used sterilized instruments, 90% of wore gloves. 40.9% of them completed the three doses of HBV vaccination. 27.3% never receive any dose of vaccination. [26] Another study conducted in Haramaya university on 322 medical and health sciences students to assess practice towards HBV prevention Majority of the respondents, 276 (85.7%) never screened for HB. 76.1% of the respondents were never participated in any

education program on HBV. Out of 322 participants, 43 (13.4%) were vaccinated against HBV. In the vaccinated group, 15 (4.7%) completed all 3 doses of their vaccination schedule and remaining 28 (8.7%) students were incompletely vaccinated. Reasons for not getting vaccinated were lack of information in 67 (20.8%) students, no need was felt by 9 (2.8%) students, 15 (4.7%) had fear of injection and 45 (14%) said they ignorance.[4] Similar study conducted in Woldia University regarding the practice of health science students towards revealed that Practices of Respondents on Hepatitis B Infection Prevention. Out of 200 participants, 79 (39.5%) of students have good practice, whereas 121 (59.5%) had poor practice towards HBV infection prevention. 149 (74.5%) of the respondents were never screened for HBV, and 16 (8%) of the students were vaccinated against HBV. Among the vaccinated group, 2 (12.5%) completed all 3 doses of the Vaccination schedule, and the remaining 4 (25.4%) and 10 (62.5%) students took only first and second dose.[4]

3. OBJECTIVES

3.1 General Objectives

The general objective of the study is;

- To determine knowledge, Attitude and Practice towards prevention of Hepatitis B viral infection among Wolkite university health science students

3.2 Specific Objectives

The specific objectives are;

- To evaluate the level of knowledge about Hepatitis B Viral infection among Wolkite university health science students who are in clinical attachment in Guraghe zone, central Ethiopia from 24 December -6 January 2025.
- To identify level of Attitude towards hepatitis B viral infection among Wolkite university health science students who are in clinical attachment in Guraghe zone, central Ethiopia from 24 December -6 January 2025.
- To determine the level of Practice about Hepatitis B viral infection among Wolkite university health science students who are in clinical attachment in Guraghe zone, central Ethiopia from 24 December -6 January 2025.

4. METHODS AND MATERIALS

4.1 Study area and period

The study was conducted from DEC 24 \2024 G.C to JAN 6/ 2025 G.C Wolkite university College of medicine and health science which is found gubre subcity , central Ethiopia, Ethiopia. It is located in central Ethiopia which is 168 km from the capital, Addis Ababa. Wolkite University established in 2012 G.C. The University has 7 college, including college of medicine and health sciences that has 7 departments with a total number of 871. Public health 201, medicine 257, midwifery 79, nursing 128, pharmacy 100, Anesthesia 32 & Medical Laboratory 74. Out of these students who in clinical attachment are 583

4.2 Study design

A quantitative Institution based cross-sectional study design was used to assess knowledge, Attitude and Practice towards Hepatitis B viral infection among Wolkite university health science students.

4.3 POPULAION

4.3.1 Source of population

The source population is all Wolkite university health science students.

4.3.2 Study population

The study populations are wolkite university health science students who are in clinical attachment at WKUSH, Atat Hospital , Endibir health center, Wolkite health center and Agena health center.

4.3.3. Sampling unit

The sampling unit is each wolkite university health science students who are in clinical attachment.

4.4. ELIGIBILITY CRITERIA

4.4.1. Inclusion criteria

All eligible students on clinical attachment where preferable for our study, Among these those who was attended in clinical attachment at the time of study and those who are volunteer to participate in study included in our study.

4.4.2 Exclusion criteria

Those who are not eligible for clinical attachment and those who are not volunteer to participate in the study where excluded As well as those who was not found at the study site at the time of study was excluded from our study.

4.5. SAMPLE SIZE DETERMINATION

Sample size for this study was determined by using the single population proportion formula by considering the following assumptions: the proportion of knowledge, attitude practice on hepatitis B infection prevention was taken from the result of a previous similar study conducted among Bahrdar University health science students 2021G.C ; from this study, the student who had good knowledge, good attitude and good practice about hepatitis B infection prevention 83.8%, 44.6% and 32.6% respectively, with 95% confidence interval and marginal error (d) of 5%.

KNOWLEDGE

$$n = Z^2p(1-p)/d^2$$

$$n = (1.96)^2 * 0.838(0.162)/(0.0025)$$

$$n=208$$

ATTITUDE

$$n = Z^2p(1-p)/d^2$$

$$n = (1.96)^2 * 0.446(0.554)/(0.0025)$$

$$n=379$$

PRACTICE

$$n = Z^2p(1-p)/d^2$$

$$n = (1.96)^2 * 0.326(0.674)/(0.0025)$$

$$n=337$$

As the highest is $n=379$ using Correction formula $n=205$

Adding 5% non-response rate $n = 226$

4.6. SAMPLING TECHNIQUE

First the students was stratified based on their department then they were clustered based on whether they are on clinical attachment or not. Depending on their size,samples proportional was drawn from each stratum(department).After that we were drawn sample from each batch of each department those found on clinical attachment based on their size by using stratum formula then we selected students by using quota sampling method.

To be calculated the number of sample selected from each stratum (department), we can use the following formula.

$$n_j = \frac{n}{N} (N_j) \quad \text{where } n_j - \text{sample of } j\text{th stratum}$$

n- total sample size

N_j- population size of jth stratum

N- Total population size

Table 1 : Distribution of respondents by their department among wolkite university medicine and health science students, gubre subcity, central Ethiopia, DEC 2024

Department	Total Population	Sample
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Medicine	257	67
Public Health	201	52
Nursing	128	33
Midwifery	79	20
Medical Laboratory	74	19
Anesthesia	32	9
Pharmacy	100	26

4.7. METHODS AND TOOLS OF DATA COLLECTION

The data was collected from study subjects by self-administered questionnaire using structured questionnaire adopted from previous researches on the same topic. The questionnaire consisted question to assess socio demographic characteristics, knowledge of respondents, Attitude of the respondents and practices of respondents.

4.8. VARIABLES

4.8.1. Dependent variables

- Knowledge
- Attitude
- Practice of the health care attendants towards Hepatitis B

4.8.2 Independent variables

- Age
- Sex
- Religion
- Ethnicity
- Educational status

4.9 OPERATIONAL DEFINITIONS

Good Knowledge: if the respondents were able to answer 70% or more of knowledge items correctly.[16]

Poor knowledge: if the respondents answered less than 70% of knowledge item[16]

Good Attitude: if the respondents were are able to give the correct answer for 70% or more of attitude items[16]

Poor Attitude: if the respondents answered less than 70% of attitude items [16]

Good Practice: when the study participants were at least able to answer 70% or more practice items correctly[16]

Poor Practice: when the participants were unable to answer 70% of practice items correctly[16]

4.10 DATA COLLECTION PROCEDURES

Data was collected by three fourth year public health students. The questionnaire was handed out randomly to each a group of students in each selected departments, on students who are in clinical attachment. And the questionnaire was completed and checked under the supervision of the data collectors.

4.11 DATA QUALITY ASSURANCE

Data collectors were three public health students who were on their basic study and who know more about the topic issue. Information was given ahead of actual data collection time on the selection procedure of study units and objectives of the study. Again the quality was assured by using properly designed, structured, pre tested and designed by English version questionnaire again the questionnaire was assessed for the clarity and if there is any questions that are difficult to understand and responded was rephrased before data collection. The refusal to response by respondent considered as non-respondent and those percents of non respondent added on our total sample size . Before the actual data collection, the questionnaires was checked for clarity, comprehensivness, content validity and practicability.

4.12 DATA PROCESSING AND ANALYSIS

After data collection, we rechecked the correct fulfillment of Questionnaire and then data entered and analysis was done by SPSS version 27, by using different measures of central tendency and central dispersion and proportion was used to state the descriptive statistics of the study

participant .cross tabulation will be performed to see the relationship between variables by chi square.

Finally the results of the study is presented in the form of texts, tables and charts.

4.13 ETHICAL CONSIDERATIONS

Before the beginning of our study, ethical clearance was requested from the institutional review board Wolkite University, college of medicine and health sciences. .During data collection, study participants was asked for written or verbal consents, the aim or purpose of data collection was written first clearly to the responder on the first page of the questionnaire which has a choice of ‘‘agreed’’ or ‘‘disagreed’’:and was informed to interrupt the interview at any time on their desire. According to the respondent consent, the actual data was obtained.

4.15. DISSEMINATION AND UTILIZATION OF RESULTS:

The results of our study was disseminated to key stake holders in the research area, and other responsible governmental and nongovernmental organizations to create awareness on real things on the ground so that appropriate and timely action was taken. We were also disseminate our result findings to the scientific community through publications on health journals and finally the research submitted to Wolkitie University

RESULT

Sociodemographic

A total of 226 students from seven different departments were participated in the study making a response rate of 100%. The majority of the participants 176 (77.9%) were within the age group of 21–25 and 142 (62.8%) of the respondents were males., the majority of the participants 98 (43.4%) were orthodox religion followers, 134(59.3%) of the respondents came from central Ethiopia . out of 67 medicine students30 (44.8%) are female 37(55.2%) are male , out of 52 public health students 43(82.7%)are males and 9(17.3%) are females , out of 33 nursing student and 8(40%) are female. out of 9 ansthesia students7 (77.8%) are male and 2 (22.2%). Out of 19 medical laboratory students 15 (78.9%) male and4 (21.1%) are female and out of 26 pharmacy 12 (46.2%) males and 14 (53.8%) females.

Table 2: Distribution of wolkite university health science students by their socio-demographic characteristics.

Socio demographic variable		Frequency	Percentage (%)
Age	17-20	36	15.9%
	21-25	176	77.9%
	25+	14	6.2%
Religion	Orthodox	98	43.4%
	Muslim	68	30.1%
	Catholic	8	3.5%
	Protestant	50	22.1%
	Other	2	0.9%
Department	medicine	67	29.6%
	Public health	52	23%
	pharmacy	26	11.5%

	midwifery	20	8.8%
	nursing	33	14.6%
	Medical laboratory	19	8.4%
	anesthesia	9	4%
ethnicity	Gurage	58	25.7%
	amahara	64	28.3%
	oromo	86	38.1%
	tigray	16	7.1%
	other	2	0.9%
sex	male	142	62.8%
	female	84	37.5%

Knowledge

Out of the 226 participants, all of them (100%) have heard about hepatitis among this most of them 116 (51.3%) have heard from lectures and seminars. A majority of respondents 145 (64.2%) know the organ that directly affected by hepatitis B viral infection. All 226 (100%) of the respondents agree that as it transmitted through blood and blood product, needles and sharp injury, unsafe sexual intercourse and mother to child as well as agree as it prevented through vaccination, avoiding sharp injury and avoiding unsafe sex but only 165 (73%) of them believe on practicing standard working precaution was ways of prevention.

Table 3: knowledge of respondents in each department on HBV viral infection prevention among Wolkite university health science students

	knowledge	Total

		good	poor	
Department	Medicine	48	19	67
	public health	37	15	52
	Nursing	21	12	33
	Midwifery	12	8	20
	medical laboratory	13	6	19
	Pharmacy	16	10	26
	Ansthesia	6	3	9
Total		153	73	226

Table 4: Knowledge of respondents in each academic year on HBV viral infection prevention among Wolkite university health science students

		knowledge		Total
		Good	poor	
Academic year				
	Third year	43	36	79
	Fourth year	65	24	89
	Fifith year	30	7	37
	Sixith year	15	6	21

Total	153	73	226
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Regarding the overall knowledge the study showed that 67.7% of respondents have good knowledge whereas the remaining 32.3% have poor knowledge on HBV infection prevention.

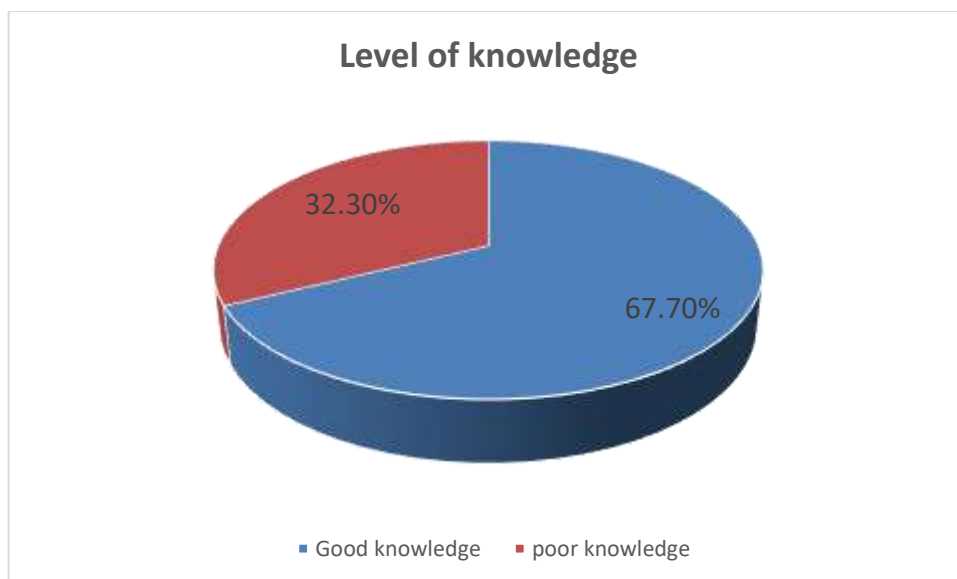


Figure 1: shown knowledge of respondents on HBV viral infection prevention among Wolkite university health science students

Attitude

Out of 226 participants all of them agree as their jobs puts them at high risk of acquiring hepatitis B viral infection and they need the protection against this viral infection. Almost all of them (98.2%) consider that it is necessary to receive hepatitis B vaccine. Among our respondent above half of them (70.8%) feel that they have good skill that need to effectively and safely care hepatitis B patients and 77% of them willing to serve people with hepatitis B in their clinical attachment. 141 (62.4%) of the respondent agree on following infection control guidelines will protect them from being infected by this virus.

Table 5: Attitude of the respondents in each department on HBV viral infection prevention among Wolkite university health science students

		attitude		Total
		positive	negative	
department	Medicine	53	14	67
	public health	41	11	52
	nursing	25	8	33
	midwifery	17	3	20
	medical laboratory	12	7	19
	Ansthesia	7	2	9
	Pharmacy	18	8	26
Total		173	53	226

Table 6: Attitude of respondents in each academic year on HBV viral infection prevention among Wolkite university health science students

		attitude		Total
		Positive	negative	
Academic year				
	third year	58	21	79
	Fourth year	72	17	89
	Fifth yea	29	8	37

Regarding the overall attitude the study showed that 76.5% of respondents have positive Attitude whereas the remaining 23.5% have negative attitude on HBV infection prevention.

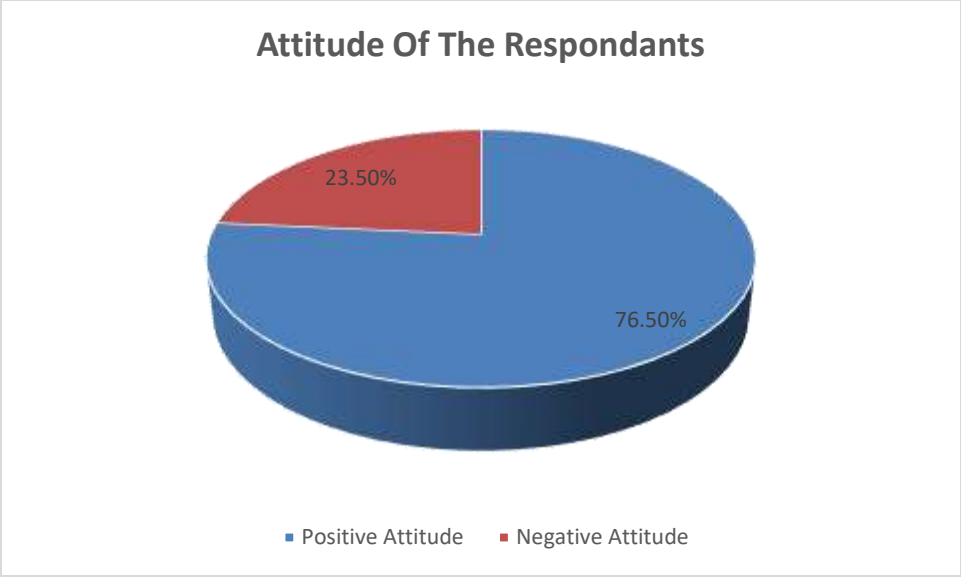


Figure 2 :show attitude of respondents on HBV viral infection prevention among Wolkite university health science students

Practice

All of the respondents (226) knows the measures that used to protect against hepatitis B viral infection like, wearing gloves, wearing goggles, disposal of sharp materials, avoiding, patients those diagnosed for hepatitis B and using antibiotics after contacts. The majority of our respondents 171 (75.7%) have tested for hepatitis B before, but only 63 (27.9%) of them have received the vaccine, from this 49 (21.7%) of them complete their vaccination. The majority of those who did not vaccinated, give unavailability of the vaccine as a reason

Table 7; Practice of respondents in each department on HBV viral infection prevention among Wolkite university health science students

		practice		Total
		good	poor	
Department	Medicine	60	7	67
	public health	23	29	52
	nursing	12	21	33
	midwifery	11	9	20

	medical laboratory	4	15	19
	Pharmacy	17	9	26
	Ansthesia	1	8	9
Total		128	98	226

Table 8: Practice of respondents in each academic year on HBV viral infection prevention among Wolkite University health science students

		practice		Total
		Good	poor	
academic year	Third year	45	34	79
	Fourth year	50	39	89
	Fifth year	21	16	37
	Sixth year	17	4	21
	Total	133	93	226

Regarding the overall practice the study showed that 56.6% of respondents have Good practice whereas the remaining 43.4% have Bad practice on HBV infection prevention.



Figure 3: shown practice of respondents on HBV viral infection prevention among Wolkite university health science students

DISCUSSTION

The professional knowledge regarding HBV prevention has paramount contribution to the implementation of set strategies and planned activities. Based on the findings of this study 153(67.7%) of the participants had good knowledge. The finding of this study is higher than findings of previous studies conducted in China in 2017, in which only 21% of the participants were able to answer all the general knowledge related questions correctly [33]. Similarly, a study conducted in Ghana in 2014 revealed that less than half of the participants (46.2%) knew about hepatitis B infection and its disease [25]. The result of this study when compared with that conducted in Gondar University out of 200 participants, 39% of them have a good knowledge on hepatitis B infection prevention, which is less. This may happen because our study contains a higher sample size than that conducted in Gondar University and also unlike them we focus on those students found in clinical attachment since their knowledge may be better than those who are on preclinical.

And study conducted Woldia University revealed that out of the 200 participants, 96 (48%) have poor knowledge, whereas 104 (52%) showed good knowledge about HBV. [4].which is lower than our result. But study conducted in Bahrdar on 390 Private Medical Health Sciences College Students 83.8% had good knowledge which is higher than the results of our study.

In this study (92%) of the students answered correctly the transmission and prevention ways of HBV. But (30%) of the respondents do not know whether the HBV vaccine prevent the disease or not.

Out of 226, 173(76.5%) of the participants had positive attitude, when it compared with the study that conducted in India in which the attitude of the students was positive as(96.3%)opined that everyone should get hepatitis B vaccination and (90.1%) thought that the vaccine is certainly helpful is higher that of this study. Another study conducted Khartoum Sudan on110 nurses and midwives in two maternity hospitals to assess attitude towards HBV, 86.4% showed a positive attitude. [18].which is lower than that conducted in India and higher than the result of our research. But the study conducted in Bahardar only 44.6% of the study participants had a favorable attitude which is lower than the result of this study [16]and in this study among the health science students revealed that of 98(23.2%),the study participants had no concern being infected with HBV,but in ou study all of the study participant agree as their jobs put the in high risk of acquiring hepatitis B viral infection.As the study conducted in Bahardar on 390 private Medical Health Science the 33.6% of the participant had a belief that changing gloves is a waste of time and 64.9% of the participant believed that HBV vaccine is safe and effective ,where in this study all of the participant believe that wearing glove can prevent the transmission of the hepatitis B viral infection and believe that vaccination is the best way of preventing the transmission.

In that conducted in bahardar 307(72.7%) of the participant believe that following infection control guidelines would protect them from HBV infection,but In this study 62.4% of students consider following infection control guidelines protect them from being infect with HBV which is some how lower than that of bahardar.The only 31.35 of the participants believe that post exposure prophylaxis could prevent from HBV infection in that conducted in bahardar.but 100% the respondents consider it necessary to receive post exposure prophylaxis.

And out of 226, 128(56.6%), of the participants had good practice. But in cross sectional study conducted in Khartoum Sudan on 110 nurses and midwives in two maternity

hospitals to assess their practice towards HBV prevention 65% of them had a safe practice regarding HBV infection in where 90% of them used sterilized instruments ,90% of them also wore gloves,But in this study all of the participant 226(100%)wear gloves and goggles.And also in that of Khartoum 40.9% of the participant completed the three doses of HBV vaccination And 27.3% never receive any dose of vaccination.Unlike that of Khartoum in this study 63(27.9%) of the participant only receive the vaccination from this 49(21.7%) of them complete their vaccination,where the majority 163(72.1%) never receive any dose. reasons for not getting vaccinated were lack of vaccination 124 (75.4%) students, resource expenditure 66 (20%) students,where the left 36 (14.6%) had fear of injection and mention another reason.But in Another research conducted in Haramaya Out of 322 participants,43 (13.4%) were vaccinated against HBV. In the vaccinated group, 15 (4.7%) completed all 3 doses of their vaccination schedule and remaining 28 (8.7%) students were incompletely vaccinated. Reasons for not getting vaccinated were lack of information in 67 (20.8%) students, no need was felt by 9 (2.8%) students, 15 (4.7%) had fear of injection and 45 (14%) said they ignorance.[26]

It show that The finding of this study lower than findings of previous studies conducted in Khartoum Sudan their practice towards HBV prevention.[26] And higher than that of Haramaya.And again the study conducted in Haramaya University on 322 medical and health science students to asses practice towards HBV prevention majority of the respondent 276(85.7%) never screened for HBV,But in our study 171(75.7%) tested for hepatitis B before.which is lower than that conducted in Haramaya.But higher than study conducted in Woldia University Out of 200 participants, 79 (39.5%) of students have good practice, whereas 121 (59.5%) had poor practice.[4]

The differences in socio economic status among settings, cultural behaviours and also the time gap can contribute to this difference.

Strength and Limitation

Strength

This study has its own strengths, First It includes different departments which is used to identify gaps between different departments. It contributes significantly to the existing literature and offering a foundation for future research.

Limitation

This findings may not be fully generalize to other University health science students, as the study was conducted in small no of study participants and others University may did the work of awareness creation, prepare measures of prevention and vaccinate their students. Another limitation was social desirability bias could have occurred because participants might try to respond their knowledge towards prevention of hepatitis B infection

Conclusion

Based on the current study, greater than half of the students have good knowledge of hepatitis B infection prevention and positive attitude and good practice.

When the academic year of the participants increased also their knowledge, attitude and practice also increased.

RECOMMENDATION

Wolkite University College of Health Science should give special emphasis on HBV infection prevention training for all health science students before they start their clinical attachment (professional practice). Medical and health science colleges should have occupational or student health departments that must take responsibility for HBV testing, vaccination, monitoring vaccine response and providing post-exposure prophylaxis.

It is also recommended that the university should allocate resources for complete vaccination of all health science students before they start clinical attachment since “prevention is better than cure”

REFERENCES

1. WHO. Health. Care worker safety. http://www.who.int/occupational_health/activities/1am_hcw.pdf. [Accessed 4 December 2019].
2. World health organization. WHO hepatitis B.htm. WHO, Geneva. <http://www.whohepatitisB.htm>. Accessed on 22 June 2015. 2. Thio CL. Hepatitis B and human immunodeficiency virus coinfection. *Hepatology*. 2009;49:S138–45.

3. Sharma S, Dixit M, Mittal H, Jain J, Jain D, Khandelwal A. Assessment of knowledge, attitudes and practices toward prevention of hepatitis B virus infection among medical students in Geetanjali Medical College, Udaipur. *Int J Community Med Public Health* 2018 Mar 23;5(4):1509e13.
4. Mesfin YM, Kibret KT. Assessment of knowledge and practice towards hepatitis B among medical and health science students in Haramaya university, Ethiopia Schildgen O, editor. *PloS One* 2013 Nov 21;8(11):e79642.
5. Hang Pham TT, Le TX, Nguyen DT, Luu CM, Truong BD, Tran PD, et al. Knowledge, attitudes and medical practice regarding hepatitis B prevention and management among healthcare workers in Northern Vietnam. Tillmann H, editor. *PloS One* 2019 Oct 14;14(10):e0223733
6. WHO Hepatitis B. Fact sheet no: 204. 2011. Available: <http://www.who.int/mediacentre/factsheets/fs204/en>
7. World Health Organization. Hepatitis B factsheet. 2018. <https://www.who.int/news-room/fact-sheets/detail/hepatitis-b>.
8. World Health Organization. Global hepatitis report. 2017. <https://www.who.int/hepatitis/publications/global-hepatitis>
9. Howell J, Ladep NG, Lemoine M, Thursz MR, Taylor-Robinson SD. Hepatitis B in sub-Saharan Africa August. 2014;7(3):3
10. Belyhun Y, Maier M, Mulu A, Diro E, Liebert UG. Hepatitis viruses in Ethiopia: a systematic review and meta-analysis. *BMC Infect Dis* 2016 Dec;16(1):761
11. Tsega E. Current views on liver diseases in Ethiopia. *Ethiop Med J* 1977 Apr;15(2):75e82
12. Molinari JA. Infection control. *J Am Dent Assoc* 2003 May;134(5):569e74
13. Rachiotis G, Goritsas C, Alikakou V, Ferti A, Roumeliotou A. Vaccination against hepatitis B virus in workers of a general hospital in Athens. *Med Lav* 2005 Feb;96(1):80e6.

14. Pathoumthong K, Khampanisong P, Quet F, Latthaphasavang V, Souvong V, Buisson Y. Vaccination status, knowledge and awareness towards hepatitis B among students of health professions in Vientiane. Lao PDR. *Vaccine*. 2014 Sep;32(39):4993e9.
15. Noubiap JJN, Nansseu JRN, Kengne KK, Tchokfe Ndoula S, Agyingi LA. Occupational exposure to blood, hepatitis B vaccine knowledge and uptake among medical students in Cameroon. *BMC Med Educ* 2013 Nov 8;13:148
16. Abeje G, Azage M. Hepatitis B vaccine knowledge and vaccination status among health care workers of Bahir Dar City Administration, Northwest Ethiopia: a cross sectional study. *BMC Infect Dis* 2015 Dec;15(1):30.
17. Abebe A, Nokes DJ, Dejene A, Enquselassie F, Messele T, Cutts FT. Seroepidemiology of hepatitis B virus in Addis Ababa, Ethiopia: transmission patterns and vaccine control. *Epidemiol Infect* 2003 Aug;131(1):757e70
18. Sridhar MR, Boopathi S, Lodha R, Kabra SK. 2004. Standard precautions and post exposure prophylaxis for preventing infections. *Indian J Pediatr* vol 71: pp 617-25.
19. Catalani C, Biggeri A, Gottard A, Benvenuti M, Frati E, Cechini C. 2004. Prevalence of HCV infection among health care workers in a hospital in central Italy. *Eur J Epidemiol* vol 19: pp73-7.
20. Canini SR, Gir E, Hayashida M, Machado AA. 2002. Needle sticks injuries among nursing workers at a university hospital in the interior of the Sao Paulo state. *Rev Lat Am* 0020
21. West DJ. (1984). The Risk of Hepatitis B infection among Health Professionals in the United States: A Review. *Am J Med Sci* vol 287: pp 26-33.
22. Sarrazin U, Brodt H, Sarrazin C, and Zeuzem S. 2005. ‘ Prophylaxe gegen“uber HBV, HCV und HIV nach beruflicher Exposition’. *DeutschesArzteblatt*, vol 102, no. 33, pp 2234 – 2239.
23. A A, et al. Assessment of knowledge, attitudes, and practices toward prevention of hepatitis B virus infection among students of medicine and health sciences in Northwest Ethiopia. *BMC Res* tes. 2016;9(410):3.
24. A study of knowledge and practice regarding Hepatitis B among nursing students attending tertiary care hospitals in Agartala city *Int J Res Med Sci*. 2015;3(7):1641–9

25.] M. Y. Afihene, B. M. Duduyemi, A. Hannah-Lisa, and M. Khatib, “Knowledge, attitude and practices concerning hepatitis B infection, among healthcare workers in Bantama, Ghana: a cross sectional study,” *International Journal of Community Medicine and Public Health*, vol.2,no.3,pp.244–253, 2017.
26. M. SM-eM and M. Soo, “Knowledge, attitude, and practice towards hepatitis B infection among nurses and midwives in two maternity hospitals in Khartoum, Sudan,” *BMC Public Health*, vol. 19, no. 1, p. 1597, 2019.

ANNEX

Annex 1; QUESTIONNAIRE

WOLKITE UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCE

**STUDENT RESEARCH FOR THE FULFILLMENT OF BSc. DEGREE PROGRAM IN
PUBLIC HEALTH**

INFORMATION AND CONSENT FORM

We are comprehensive public health students from Wolkite university main Campus. As a part of our academic requirements; we are doing research among regular undergraduate students of Wolkite University main Campus.

This questionnaire is developed to get appropriate information about the level of the knowledge, attitude & practice towards HBV infection among health science students in Wolkite university.

The information obtained will be used only for research purpose and we need to assure your confidentiality and privacy issues will be ensured.

We politely request your cooperation in responding these questions.

You are kindly requested to fill the questionnaires alone, and discussion is not allowed. If there is only problem in understanding the questionnaires, you can ask data collectors for any clarification.

Answer the question by marking “X” in the space provided writing the name or ID number is not important and you can unmark more than one if possible.

You do have the right not to respond at all or to withdraw in the meantime, but your participation has great value for the success of the objectives of this study.

Do you agree to participate in this study? Yes----- No-----

Thank you for your cooperation!!!

Section A: Socio-demographic characteristics of the respondent

1. code_____
2. what is your department
1. medicine 2. Pharmacy 3. Public health 4. Anesthesia 5. Medical laboratory 6. Nursing
7. Midwifery
3. what is your academic year_____
4. What is your age? _____
5. Sex 1. Male 2. Female
6. Religion 1. Muslim 2. Orthodox. 3. Protestant 4. Catholic 5. Otherspecify.....
7. From which part of Ethiopia do you came from?
1. Central Ethiopia 2. North Ethiopia 3. South Ethiopia
4. East Ethiopia. 5. West Ethiopia 6. From abroad, specify _____
8. Ethnicity ____A.Oromo B. Amhara C. Tigray D. Gurge E.
Other(Specify).....

Section B: Respondents Knowledge about Hepatitis B infection

9. Do you know or have you heard about Hepatitis B? 1. Yes 2. No
10. If you hear, from where did you hear
1. Books and journal articles 2. Lectures and seminars 3. Media
4. Family and friends. 5. Other specify_____
11. Which part of our organ does Hepatitis B affects?
1. Liver 2. Heart 3. Kidneys 4. Brain 5. Not sure
12. Route of transmission of Hepatitis B infection (answer each of the following choices)
1. Blood and blood products yes No 2. Needles and sharps injury yes No
3. Sexual intercourse yes No 4. from mother to child yes No 5. Other specify.....

13. Ways of preventing Hepatitis B infection can be through (answer each of the following choices)

1. Vaccination yes No 2. Practicing standard working precaution yes No
3. Avoid sharp injury yes No 4. Avoid unsafe sex yes No 7. Other
specify _____

14. Can Hepatitis B vaccine prevent the disease? 1. Yes 2. No

15. How many doses of hepatitis vaccine are there?

1. One dose 2. Two doses 3. Three doses 4. Four doses

16. Is there specific pharmaceutical treatment to cure hepatitis B? 1. Yes 2. No 3. I don't know

Section C: Respondents Attitude Regarding Hepatitis B viral infection

17. Do you think job puts you at a high risk of acquiring Hepatitis B virus?

1. Yes 2. No 3. I don't know

18. Are you in need of protection against Hepatitis B viral infection

1. Agree 2. Disagree 3. I don't have idea

19. Do you consider it necessary to receive vaccine? 1. Yes 2. No

20. Do you feel that you do not have the skills needed to effectively and safely care patients with Hepatitis B? 1. Yes 2. No

21. Do you want not serve people with Hepatitis B in your clinical attachment? 1. Yes 2. No

22. Following infection control guidelines will protect you from being infected with Hepatitis B

1. Agree 2. Disagree 3. Don't have idea

Section D: Respondents Practice Regarding Hepatitis B viral infection

23. Measures taken to protect against hepatitis B infection

1. Wearing of gloves yes No 2. Wearing of goggles yes No
3. Disposal of sharp materials yes No 4. Avoid patients diagnosed with hepatitis B yes
No 5. Use antibiotics after contact yes No 7. Other Specify _____

24. Have you ever tested for hepatitis B virus? 1. Yes 2. No

25. Have you ever received hepatitis B Vaccine? 1. Yes 2. No

26. If "yes" for question number 21, Number of doses of vaccine you received

1, 1 dose 2, 2 dose 3, ≥ 3 dose

27. Do you complete vaccination schedule? 1 yes 2. No

28. If "No" for question number 23,, reason for not being Vaccinated

1. No reason. 2. Negligence. 3. I can't be infected with hepatitis B

4. Unavailability of the vaccine 5. Unwilling to spend time and money for the vaccine

6. Fear of the side effects