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WOLKITE UNIVERSITY
COLLEGE OF HEALTH AND MEDICAL SCIENCE
DEPARTMENT OF PUBLIC HEALTH

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS BLOOD DONATION AMONG UNDERGRADUATE HEALTH AND MEDICAL SCIENCE STUDENTS OF WOLKITE UNIVERSITY

A RESEARCH PROJECT TO BE SUBMITTED TO DEPARTMENT OF PUBLIC HEALTH, COLLEGE OF HEALTH AND MEDICAL SCIENCE, WOLKITE UNIVERSITY AS PARTIAL FULFILLMENT FOR THE REQUIREMENT OF BSC IN PUBLIC HEALTH.

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October, 2021
Wolkite, Ethiopia

ACKNOWLEDGMENTS

First of all we would like to thank Wolkite University College of Health and Medical science, department of Public health for giving us this chance. Secondly we would like to extend our deepest gratitude to our advisors Fedila Y and Tamirat M for their constructive comments, suggestion and guidance throughout the course of our work. Lastly our gratitude goes to our colleagues who provided valuable contributions and support morally throughout preparation of this research paper

TABLE OF CONTENTS

List of abbreviations and acronyms

CHMS…….college of health and medical science

ERCS……..Ethiopian Red Cross Society

ENBBS.....……...Ethiopian National Blood Bank Service

FDRE……..Federal democratic republic of Ethiopia

FMoH…….…….Federal Ministry of Health

HSDP IV…….……....Fourth Ethiopian Health Sector Development Program

IFRC …….…….....International Federation of Red Cross and Red Crescent Societies

IRB ……..…….…Institutional Review Board

KAP ……..…..…knowledge, attitude and practice

NBTS ……..…National Blood Transfusion Services

WHO……...World Health Organization

MOH…….Ministry of Health

LIST OF TABLES

SUMMARY

Background: Blood transfusion is a life-saving intervention that is the process of receiving blood and blood products and used in a variety of medical conditions to replace lost components of the blood. Recently, blood is an important concern however, in many developing countries this constitutes a problem and the gap between blood demand and supply is widening.

Objective: To assess knowledge, attitude and practice towards blood donation among undergraduate health science students of Wolkite University in 2021.

Methodology: A descriptive cross-sectional study design was conducted and stratified sampling method was carried out from Sep 28 2021 to Sep 30 2021 on total 303 health students of Wolkite University. The data collection was carried out by using pre-tested structured self-administered questionnaire. The data collected was cleaned, coded and analyzed with SPSS version 20.0.

Result: Out of 303 undergraduate health science students of Wolkite University College of health and medical science students 194(64%), 174(57.4%) them had good knowledge and positive attitude respectively. About 22.1% of them voluntary donate blood at least once in their life.

Conclusion: Even though majority of students had good knowledge and positive attitude toward blood donation, practicing voluntary blood donation was low.

Recommendation: Targeted strategies should be designed to increase awareness of health science students about blood donation. Strategies which encourage the students to donate blood voluntarily should also be

1. INTRODUCTION

1.1. Background

Blood transfusion is a life-saving intervention that is the process of receiving blood and blood products and used in a variety of medical conditions to replace lost components of the blood. Adequate and safe supply of blood and blood components such as whole blood, plasma, platelet, and red cell are essential to enable a wide range of critical care procedures to be carried out in hospitals [1]. With increase in population and development of more advanced medical and surgical procedures, the need for blood is ever increasing. There is no substitute for blood. When you donate blood, you give a second chance at life to someone unknown to you. One does not know who will need blood transfusion tomorrow, it could be you or your friend or dear one [2].
Blood transfusion is now considered as an indispensable component of medical management of many diseases [4]. Recently, blood is an important concern to the society [5]. However, in many developing countries this constitutes a problem and the gap between blood demand and supply is widening. The capacity of health care system and its coverage of the population determine the national blood requirement of a country [6].

In Ethiopia, National Blood Transfusion Services (NBTS) was established in 1969 by Ethiopian Red Cross Society (ERCS) since 2004 it has been referred to Federal Ministry of Health (FMoH). Its main center is located in Addis Ababa. In Ethiopia, the range of age to donate blood is from 18-65 years with >45 kg of body weight. The required quantity of blood to be donated in a single donation is from 350 ml to 450 ml. Greater than 12 gm/dl of hemoglobin level for female while 13 gm/dl for male is another eligibility criterion to donate blood. The last but not the least criteria are having 110-160 mmHg systolic and 70-95 mmHg diastolic blood pressures. About 5-7 minutes are enough for drawing blood from your vein [7].On October 27, 2019 a new blood bank has been inaugurated on a day Ethiopia's ministry of health launched a National Blood donation campaign launched under the theme, "Life for Life! Give Blood, Save Life! "Ethiopian National Blood Bank Service (ENBBS) says it aims to register 100,000 new blood donors and 300,000 donors in a thirty-day. Ethiopia collected 223,000 units of blood in 2012 EC, meeting only 22% of its need as per the standard of the World Health Organization [8].

1.2. Statement of problem

Blood transfusion saves lives and improves health. Nevertheless access to equitable and safe blood is still challenging for many of those who need it most. Despite the fact that there is an increase of blood donations from voluntary unpaid donors in recent years (according to The International Federation of Red Cross and Red Crescent Societies (IFRC) 2012 report, 8 million more donations were recorded in 2011 when compared to 2004) , there is shortage of active blood donors to meet the increased demands of blood. In addition to limited supply, the safety especially with regard to the risk of transfusion transmissible infection is also an issue and one of concerns especially in the developing countries [9][10].

Blood transfusion is a fundamental and a requisite part of any nation's health care delivery system for a lifesaving interventions. The need for blood and blood products is rising in all parts of the world [34]. Evidence showed that about a quarter million maternal deaths globally. Had there been adequate and safe blood transfusion service such a significant mortality would have been averted. Globally, around 92 million unit blood donations are collected annually from all types of blood donors [11]. Ethiopia is the second most populous nation in Africa, with an estimated population of 84 million [38]; a country with high MMR of 412/100,000 [39] .and high motor vehicle accident (ranks 12th in the world) [40] and with a larger non-immune population for malaria. The Ethiopian Red Cross Society (ERCS) has been the pioneer organization in developing blood banking services in the country.

World Health Organization's (WHO) 2014 report indicated that a total of about 10 000 blood centers exist globally. 83 million donations in 168 countries reported. In the low- and middle-income countries, the median annual donation per center was 3100 compared to 15 000 in the high income countries. This shows that there is a significant access difference of blood amongst the low- and high-income countries [11].

The lowest levels of availability are found in low and middle income countries, particularly in Africa [11]. Blood donation rates in Africa is estimated to be 5/1000 populations compared with developed countries which is 47/1000 population in USA [37]. Around 15 % of child mortality in Africa were attributed to obstetric bleeding and anemia, respectively [34].

Even though the prevalence of adequate knowledge towards blood donation is estimated to be 60% in developing countries, the blood donation rate in low income countries is far less than that of the middle and high income countries; which is 3.9 donation in low income countries per 1000 population compared to 36.8 and 11.7 donations per 1000 population in high-income and middle income countries respectively [11] [12].

The need for blood is experienced by all countries across the globe but is found to be more of a challenge by most developing countries primarily because of the lack of people who are willing to donate blood, and the lack of blood donor system. Globally, the recruitment of voluntary blood donors remains as one of the major challenges most especially in developing countries. Common problem is the lack of safe and low risk voluntary blood donor because of some cultural beliefs, lack of knowledge on the benefits of donating blood as well as the lack of blood donation advocates [13].

Each year, ~25%–40% of Ethiopian mothers die due to lack of enough blood from donors, [14]. Therefore, ensuring the availability of safe blood at all health facilities could reduce maternal deaths, which makes sure that the lives of every mother will not be endangered in case of emergencies for lack of blood (WHO, 2010). Despite the fact that the country's annual demand of blood was 250,000 units, the amount of blood collected from donors by 2014 was 88,000 units [14].

The Ministry of Health (MOH) of Ethiopia recognizes the insufficiency of adequate and safe blood supply across the nation. Since the beginning of the fourth Ethiopian Health Sector Development Program (HSDP IV), the construction of 21 blood banks is ongoing. Shortage of adequate and safe blood supply was one of the challenges and implementation gaps in HSDP III and hence it was recommended to fasten the completion and functionality of the newly constructed blood banks in HSDP IV. Anemia, one of the conditions which require blood transfusion in its severe form, prevalence among children and child bearing women in Ethiopia is 44 % and 17% respectively. Of which 3% of children and 1 % of child bearing women have severe anemia. Taking into account the big demand for safe blood and blood products across the nation and understanding the role of blood centers in the prevention of transfusion transmissible diseases, the Ethiopian Ministry of Health (MOH) therefore developed national blood transfusion services strategy in 2005 [12].

Young populations are crucial segment of the population, and they are the hope of present and future source of safe blood supply [4]. Health Science university students are part of the young population who are healthy, active, dynamic, resourceful and receptive who may constitute a greater proportion to blood donation; and they have to be encouraged, inspired and motivated to donate blood voluntarily [19];[20]. If appropriate strategies are designed and implemented to improve knowledge and attitude, health science students become not only the future blood donor but also the motivators plus the role models for the community.

Hosana blood bank is the only blood bank to work in collaboration with Wolkite University. According to the last two years report of blood donation campaign prepared in collaboration with live for generation club in Wolkite University the number of voluntary blood donor students among 9073 Wolkite University students are 48 and 45 respectively.

In realizing this, it is necessary to assess the knowledge, attitudes, and practices of this target group which can be used as a basis by the health department especially in low sourced countries in developing more effective strategies to increase the number of voluntary blood donors from this age-group and sector of the population.

1.3. Significance of studies

This study will help encourage, inspire and motivate students to have awareness and actively participate on blood donation. The results of this study will be used as baseline information for the Hosana blood bank to plan effective strategy to increase and maintain safe and adequate blood supply. The results of this study will be beneficial for health personnel, planners, policy makers, Non-Governmental Organizations and others who are engaged in Blood donation activities. Hence the findings of this research will be disseminated to the relevant bodies, actors and others who are involved in improving the Knowledge, Attitude and Practice of voluntary blood donation. Therefore, the main aim of this study was to assess Knowledge, Attitude and Practice towards blood donation among undergraduate health science students of Wolkite University.

2. OBJECTIVE

2.1. General objective

- To assess knowledge, attitude and practice towards blood donation among undergraduate health science students of Wolkite University in 2021.

2.2. Specific objective

- To determine knowledge towards blood donation among under graduate health science Students of Wolkite University in 2021.
- To determine the attitude towards of blood donation among under graduate health science students of Wolkite University in 2021.
- To describe the practice of blood donation measure among under graduate health science students of Wolkite University in 2021.

3. LITERATURE REVIEW

3.1. Knowledge towards blood donation

A systematic review of literature conducted in Philippines show that all literature were conducted from developing countries. Students are knowledgeable. More specifically, students inclined to health have better knowledge as compared students in non-health related course [21].

A study conducted among Health Science students in South India revealed that only 42.7% of the respondents have acquired good knowledge on blood donation [21]. A similar study, to determine the association between knowledge level and other associated factors like gender, among Indian Medical students revealed the prevalence of blood donation rate of among students were only 13.1%.

Although this is far less compared to the estimated 60% in developing countries, the findings are much closer to the study conducted by Pravin and Keerti [21].

A cross-sectional study was conducted In Malaysia among undergraduate health sciences students, The result revealed, a total of 210 undergraduate health sciences student participated in this study. Approximately, 46.2% had adequate knowledge [26]

A cross-sectional study was conducted among 400 final year undergraduate students from three schools; school of medicine ,school of dental, school of nursing, and other one department that is department of physiotherapy disciplines in a Gravari institute of Medical Sciences University campus of central India during the period of 2011. The result describes that knowledge on blood donation was good. Knowledge level was found highest among medical students (53.1%) and lowest among physiotherapy students (20.7%) [25].

A research done on assessment of knowledge, attitude and practice (KAP) of blood donation among MBBS students of a medical college in Kollam, Kerala India in 2015 shows only 35% had adequate knowledge [27].

Study carried out in Thailand indicates that 42.7% the overall respondents acquired a good knowledge level[29] which is far less compared with the studies conducted Among Addis Ababa university students and Nigerian health care worker which indicates that, physicians have good knowledge of voluntary blood donation[30];[31].

Study done in northwestern Somalia in 2017 on Knowledge, Attitude, Practice and Associated Factors of Voluntary Blood Donation among Undergraduate Students in Hargeisa University showed that More than half of the students had inadequate knowledge [23].

Study conducted in our country in Harar, Gondar and DebreMarkos towns shows that residents of Gondar and DebreMarkos have similar knowledge toward blood donations about 58% but in Harar town knowledge of the study participants toward voluntary blood donation was 43.5%. [32]; [36]; [34]

Research conducted in our country universities on knowledge, attitude and practice towards voluntary blood donations in Samara university on health science students in 2017, university of Gondar on health science students in 2015, Ambo university in 2014 and Addis Ababa university on health science students in 2014 shows Addis Ababa university students have higher knowledge towards blood donations 83.7% while Samara, Ambo and Gondar have 54%, 40.4% and 48.2% respectively [35]; [36]; [17]; [31]

3.2. Attitude towards blood donation.

A research done on assessment of knowledge, attitude and practice (KAP) of blood donation among MBBS students of a medical college in Kollam, Kerala India in 2015 shows 90% of the respondents had a positive attitude[27].but similar study in Malaysia revealed, a total of 210 undergraduate health sciences student participated in this study. Approximately, 57.1% had a positive attitude towards blood donation [26]

A systematic review of literature conducted in Philippines show that all literature were conducted from developing countries. Students have a good attitude towards blood donation. Female students are found to have low intention to donate [21]. Similar with study conducted among Health Science students in South India revealed that (87.3%) [22]

Study done in northwestern Somalia in 2017 on Knowledge, Attitude, Practice and Associated Factors of Voluntary Blood Donation among Undergraduate Students in Hargeisa University showed that More than half of the students had unfavorable attitude towards blood donation. . The proportion of students having favorable attitude was 46.9% [23].

Study conducted in our country in Harar, Gondar and DebreMarkos towns shows that residents of Gondar towns have higher positive attitude towards blood donations 82%.But in Harar town total of 278 (32.9%) study participants had positive attitude toward voluntary blood donation [32];[33]; [34]

Research conducted in our country universities on knowledge, attitude and practice towards voluntary blood donations in Samara University on health science students in 2017, university of Gondar on health science students in 2015, Ambo University in 2014 and Addis Ababa University on health science students in 2014. A research done on Ambo University Regular Students shows low attitude towards blood donations (40.3%) than health science students of Samara, Gondar and Addis Ababa 65.8%, 79.2% and 68% respectively[35];[33];[17]; [31]

3.3. Practice towards blood donation.

A cross-sectional study was conducted among 400 final year undergraduate students from three schools; school of medicine ,school of dental, school of nursing, and other one department that is department of physiotherapy disciplines in a Gravari institute of Medical Sciences University campus of central India during the period of 2011shows that 52.5% of students never donated blood[25].

A study conducted among Health Science students in South India revealed larger proportion of respondents (62%) never donated blood in their entire [22]. A similar study, among Indian Medical students revealed the prevalence of blood donation rate of among students were only 13.1%. Although this is far less compared to the estimated 60% in developing countries, the findings are much closer to the study conducted by Pravin and Keerti[21];[22]

A systematic review of literature conducted in Philippines show that all literature were conducted from developing countries; there is a low turnout on the actual practice and volunteerism in donating[21].The same finding with Malaysia among undergraduate health sciences students which revealed less than 50% of the respondents had ever donated blood[26]

A research done on assessment of knowledge, attitude and practice (KAP) of blood donation among MBBS students of a medical college in Kollam, Kerala India in 2015 shows only 10% actually donated blood [27]. Three years later the same study was done in India in 2018 showed that Out of the 350 students, only 69 students were new to blood donation/ never donated blood in their life time due to various reasons, 46 participants donated only once, 77 participants donated twice, 75 participants donated thrice, 48 participants donated four times, 21 participants donated blood 5 times and only 14 participants donated blood more than 5 times. [24]

Study carried out in Thailand indicates that 89% of respondents never donated blood in their entire life [28] this result is in agreement with a study conducted among youngsters in Sikkim by Shenga which indicates 87.3% had never donated blood [29]. According to the study done on Nigerian health care worker, 41.4% of physicians had donated blood in the past which is a bit higher compared to the previous studies in India. 8.6% of respondents practiced blood donation more than three times a year [30].

Study done in northwestern Somalia in 2017 on Knowledge, Attitude, Practice and Associated Factors of Voluntary Blood Donation among Undergraduate Students in Hargeisa University showed that More than half of them had never donated blood. The proportion of students who have ever donated blood was 11.3% [23]

Study conducted in our country in Harar, Gondar and DebreMarkos towns shows that residents of Gondar and DebreMarkos have similar practice toward blood donations which is 18% but in Harar town Only 191 (22.6%) subjects had ever donated blood[32];[33]; [34]

Research conducted in our country universities on knowledge, attitude and practice towards voluntary blood donations in Samara university on health science students in 2017, university of Gondar on health science students in 2015, Ambo university in 2014 and Addis Ababa university on health science students in 2014; the practice of blood donations among university students of Ambo, Gondar, Samara and Addis Ababa was 23.6%, 12.5% 24. 5% and 23% respectively[35];[33];[17]; [31] A research conducted in Madawalabu University Students Southeast Ethiopian 2015, showed practice of students toward blood donation is 18.4 %[15]

4. METHODOLOGY

4.1. Study area and period

The study was conducted at Wolkite University which is located in southern Ethiopia, found in Wolkite town Gubre district, 150kms from Addis Ababa.

Wolkite University has medical and health Science College. In this college there are 6 departments. Those are medicine, public health, nursing, midwifery, pharmacy, medical laboratory. Among the total 9093 of Gubre campus student 5973 are males and 3120 are females. Among those 963 are medical students.

The study was conducted from Sep 28 2021to Sep 30 2021.

4.2. Study design

A descriptive cross-section study design was conducted.

4.3. Source population

All undergraduate health and medical science students of Wolkite University in 2021 was the source population of this study.

4.4. Study population

All selected undergraduate health and medical science students of Wolkite University in 2021was the study population of this study.

4.5. Inclusion and exclusion criteria

4.5.1. Inclusion criteria

All under graduate health and medical science students was included in the study.

4.5.2. Exclusion criteria

Those students who are not available, those who do not fulfill the criteria for blood donation, critically ill during study was excluded from the study.

4.6. Sampling size and sampling technique

4.6.1 Sampling size

A single population proportion formula, [n = $\left(Z\frac{\alpha}{2}\right)^2$ **p (1-p) / d²**], was used to estimate the sample size to be included in the study. The research conducted in University of Gondar, Northwest Ethiopia in 2018 undergraduate students\ who have good knowledge was (48.2%), (79.2%) had positive attitude and (12.5 %) had practice (36). The total sample size was calculated by computing for each dependent variable and we were took the highest value. Therefore, the marginal error is considered to be 0.05, with 95% confidence interval. Based on these assumptions, a total sample size was calculated using single population and was simplified using correction formula as following:

For knowledge

$$N = \frac{Z\alpha/2^2 \times P(1-P)}{d^2 0.05^2} = \frac{1.96^2 \times 0.482(1-0.482)}{} = 384$$

Where: n= sample size

Zα/2 = Z value at 95% CI [1.96]

p = knowledge of blood donation in University of Gondar = 0.482

d = Margin of error tolerated is (0.05%)

The sample size is 384(Ni1=**384**).

For attitude

$N = \frac{Z\alpha/2^2 \times P(1-P)}{d^2} = \frac{1.96^2 \times 0.792(1-0.792)}{0.05^2} = 253$

Where: n= sample size

Zα/2 = Z value at 95% CI [1.96]

p = attitude of blood donation in University of Gondar = 0.792

d = Margin of error tolerated is (0.05)

The sample size is 253 (Ni2=**253**).

For practice

$N = \frac{Z\alpha/2^2 \times P(1-P)}{d^2} = \frac{1.96^2 \times 0.125(1-0.125)}{0.05^2} = 167$

Where: n= sample size

Zα/2 = Z value at 95% CI [1.96]

p = practice of blood donation in University of Gondar= 0.125

d = Margin of error tolerated is (0.05)

The sample size is 167 (Ni3=**167**).

Therefore the highest value from those dependent variables is Ni1=**384**

Since the Source population during the study period is less than ten thousand (N <10, 000) which is 963, sample size correction formula is used as follows:

NF= ni/ ((1+ (ni/N)) =384/ (1+384/963) =275.

Considering a 10% non-respondent rate, the final sample size of this study is **303.**

4.6.2. Sample technique

Proportional stratified sampling method was employed for this study. To maintain relative homogeneity, the students was grouped in to six strata. The strata was made by considering their department. The strata consists Medicine, Health officer, nursing, midwifery, medical laboratory science and pharmacy. Based on the number of students from each department under the strata was determined by proportional allocation. Finally, using the sampling frame obtained from the registrar, the study sample was selected by simple random sampling technique using computer random number generator.

nh= Nh/N (n)=210/963(303)=66

Where: n= sample size

Nh= total number of public health students nh= sample allocated for public health students

N= total health students

Table 1: Sampling distribution of undergraduate students in Wolkite University College of health and medical science students in 2021.

Department	Health officer	Nursing	Midwifery	Medical laboratory science	Pharmacy	Medicine	Total
Total health students	210	234	95	128	80	216	963
Sample allocated	66	74	30	40	25	68	303

4.7 Variable

4.7.1 Dependent variable

- Knowledge
- Attitude
- Practice

4.7.2. Independent variable

- Age
- Sex
- Religion
- Department
- Marital status
- Motivation by someone for blood transfusion
- Mass Media exposure towards blood transfusion
- Blood group of respondents

4.8 Operational definition

Based on the mean score, those who score mean and above for knowledge questions were categorized as ‘good knowledge’, otherwise ‘poor knowledge’.

And those who score mean and above for attitude question were labeled as having ‘good attitude’, otherwise ‘poor attitude’.

Regarding practice, having at least one history of blood donation were used to label them as having practice.

4. 9. Data collection technique and tools

The data was collected by using pre-tested structured self-administered questionnaire, a standard questionnaire which was obtained from other published journal articles was used for this study. However, to meet the objectives of the study as well as taking into the local context, the questionnaire was adapted and modified slightly in line with the local context. It was designed in the way that to collect information about all the relevant variables. It includes socio demographic characteristics on blood donation, also questions sought the knowledge, attitude and practice towards blood donation.

4.10. Data quality control

The questionnaire was prepared in English. Before the actual data collection, to keep data quality. Data collectors were discussed on the questioner in order to get common understanding and make aware of the context of each question. The prepared questioner were pretested in other areas before actual date of data collection and some correction was made based on the finding. The investigators have been following up closely and frequently check the data collection process to ensure the completeness and consistency of the collected data.

4.11. Data analysis and interpretation

The data collected was cleaned, coded and entered to SPSS version 20.0 for analysis. Descriptive statistics was computed and the result was presented in tables and figures. Mean score was computed to determine the knowledge and attitude towards blood donation.

4.12. Ethical consideration

The proposal was reviewed and approved by the Institutional Review office (IRO) of Wolkite University College of health and medical science. The study was done after a written permission was obtained from the administration. After the purpose and objectives of the study have been informed, written consent was obtained from each study participants. Participants were informed as participation is on a voluntary basis. The data collection procedure was anonymous; names or IDs were not included to keep the confidentiality of any information.

4.13. Result dissemination

The final paper will be submitted to the college of health and medical sciences department of public health in Wolkite University. The result obtained will be disseminated by using hard copies and soft copies to all concerned bodies.

5. RESULTS

5.1 Socio-demographic characteristics:

A total of 303 undergraduate medical and Health Science students of Wolkite University responded to the questionnaire, with a response rate of 100%.The majority of the study participants, 272(89.8%), were within the age range of 19–24 years, and 176(58.1%) of them were males. Moreover, 291 (96%) of the respondents were single by marital status, 128(42.2%) family income greater than 10000 ETB, and 124(40.9%) Oromo by ethnicity, respectively. 179(59.1) of the respondents were orthodox followed by Muslim 77(25.4%).

Table 2: Characteristics of undergraduate medical and Health Science students of Wolkite University 2021.

Variable	Category	Number	Percentage
Department	Medicine	68	22.4
	Pharmacy	25	8.3
	public health	66	21.8
	Nursing	74	24.4
	Midwifery	30	9.9
	Medical lab.	40	13.2
	Total	303	100
Sex	Male	176	58.1

	Female	127	41.9
	Total	303	100
Age	19-24	272	89.8
	>=25	31	10.2
	Total	303	100
Religion	Orthodox	179	59.1
	Muslim	77	25.4
	Protestant	39	12.9
	Catholic	4	1.3
	Others	4	1.3
Marital status	Single	291	96
	Married	12	4
	Divorced	0	0
	Widowed	0	0
	Total	303	100
Ethnicity	Oromo	124	40.9
	Amhara	85	28.1
	Tigre	26	8.6
	Hadiya	6	2
	Gurage	36	11.9
	Others	26	8.6
Family monthly	<5000	20	6.6

income	5000-10000	155	51.2
	>10000	128	42.2
Total		**303**	**100**

5.2 Knowledge of study participants about blood donation.

This study determined that the level of knowledge of the students regarding to blood donation about 194(64%) had good knowledge. The majority, 244(80.5%) of the study participants did not know the maximum age and about 181(59.7) did not know the minimum weight to be eligible for blood donation.

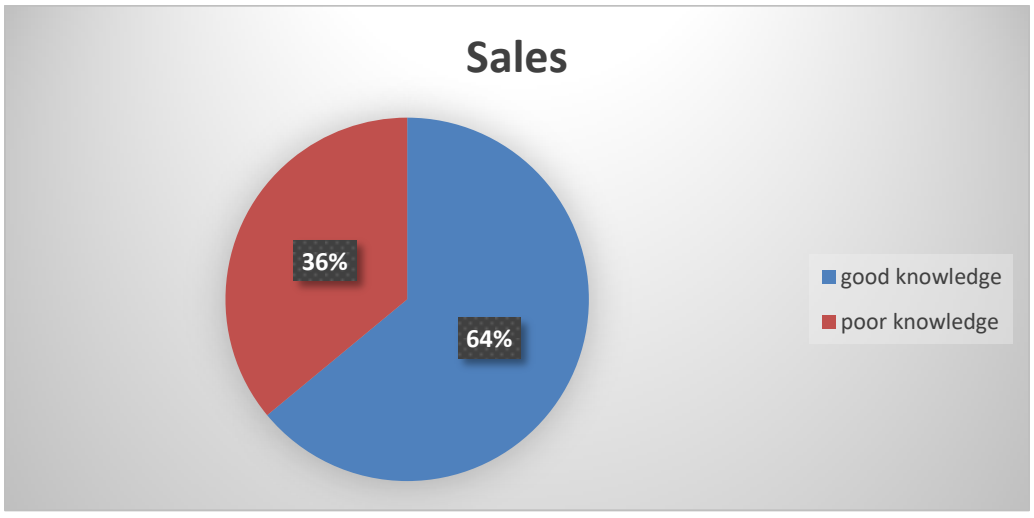

Figure 1: Level of knowledge undergraduate medical and Health Science students of Wolkite University 2021**.**

Table 3: Participants' response to knowledge assessment questions about blood donation among undergraduate medical and Health Science students of Wolkite University 2021.

Knowledge Questions	**Responses**	**Frequency n (%)**	**Knowledge toward Blood donation**	
			Correct response n (%)	**Incorrect response n (%)**
Is blood donation harmful to the donor	Yes	4(1.3)	278(91.7)	25(8.2)
	No	278(91.8)		
	No idea	21(6.9)		
The place where blood is donated	Hospital	105(34.7)	155(62.7)	92(37.3)
	Health center.	46(14.9)		
	Mobile blood donation centers ,	71(23.4)		
	Red Cross center	82(27.1)		
	Others.	0		
What is the goal of blood donation	Save the life of relatives	12(4)	291(96)	12(4)
	Save someone's life	291(96)		
	get health insurance	0		
	Don't know	0		
What is the minimum age for donation	18	238(78.5)		65(21.5)
What is the maximum age for	65	59(19.5)		244(80.5)

donation				
Minimum weight of a donor to donate blood				
		122(40.3)		181(59.7)
	45			
What is maximum volume of blood a donor can donate once?	250ml	37(15.0)	106(42.9)	141(57.1)
	450ml	106(42.9)		
	350ml	69(27.9)		
	Don't know	35(14.2)		
At what minimum interval a person donate blood?	Every 3 months	218(71.9)	218(71.9)	85(28.1)
	Once in a year	2(0.7)		
	Every 6 months	32(10.6)		
	Don't know	51(16.8)		
Do you know about blood group?	Yes	267(88.1)	267(88.1)	36(11.9)
	No	36(11.9)		
Which blood group type	A	79(26.1)	101(33.3)	202(66.7)
	B	33(10.9)		
Is the commonest one?	AB	90(29.7)		
	O	101(33.3)		
Can pregnant women donate blood?	Yes	14(4.6)	226(74.6)	77(25.4)
	No	226(74.6)		
	No idea	63(20.8)		
Can a female during menstruation	Yes	40(13.2)	204(67.3)	99(32.7)
	No	204(67.3)		

donate?	No idea	59(19.5)		
Can a cigarette smoker donate blood?	Yes	95(31.4)	60(19.8)	243(80.2)
	No	60(19.8)		
	No idea	148(48.8)		
Can a person be infected by receiving blood transfusion	Yes	256(84.5)	256(84.5)	47(15.5)
	No	47(15.5)		
	No idea	0		
Can a person donate when blood pressure is low	Yes	71(23.4)	201(66.4)	102(33.6)
	No	201(66.4)		
	No idea	31(10.2)		
Can a person with high blood pressure donate	Yes	50(16.5)	187(61.7)	116(39.3)
	No	187(61.7)		
	No idea	66(21.8)		
Can HIV infected person donate blood?	Yes	31(10.2)	269(88.8)	34(11.2)
	No	269(88.8)		
	No idea	3(1)		
What disease can be transmitted by blood transfusion?	TB	0	176(58.1)	127(41.9)
	HBV	49(16.2)		
	TB and malaria	4(1.3)		
	Malaria	51(16.8)		
	Don’t know	23(7.6)		
	Malaria and HBV	176(58.1)		
	TB and HBV	0		
What is the best	Voluntary	295(97.4)	295(97.4)	8(2.6)

source of donor blood?	Replacement	0		
	Remunerated/paid	0		
	Don't know	8(2.6)		
Do all surgical procedures require blood transfusion?	Yes	17(5.6)	238(78.5)	65(21.5)
	No	238(78.5)		
	No idea	48(15.8)		
Total		**303(100)**		

5.3 Attitude towards blood donation

This study determined that the level of attitude of the students regarding blood donation. About 174(57.4%) had positive attitude towards blood donation. The majority of respondents, 296(97.7%) and 279 (92.1%) had positive attitude towards blood donation is a moral duty and Encourage other to donate blood is good. 288(94.7) of respondents were voluntarily to donate blood for the future.

Table 4: Participants' response to Attitude assessment questions about blood donation among of undergraduate medical and Health Science students of Wolkite University.

Attitude question	**Response**	**Frequency**	**Attitude toward blood donation**	
			Positive attitude	**Negative attitude**
Blood donation is a moral duty	Strongly disagree	0(0)	296(97.7)	7(2.3)
	Disagree	0(0)		
	Neutral	7(2.3)		
	Agree	122(40.3)		
	Strongly agree	174(57.4)		

Students should have to voluntarily donate for the future	Strongly disagree	4	288(94.7)	16(5.3)
	Disagree	4(1.3)		
	Neutral	12(4)		
	Agree	139(45.5)		
	Strongly agree	149(49.2)		
Blood donation is harmful to the donor	Strongly agree	4(1.3)	257(84.8)	46(15.2)
	Agree	24(7.9)		
	Neutral	18(5.9)		
	Disagree	174(57.4)		
	Strongly disagree	83(27.4)		
Students should have to donate blood to unknown person if they asked	Strongly disagree	12(4)	144(47.5)	159(52.5)
	Disagree	47(15.5)		
	Neutral	100(33)		
	Agree	93(30.7)		
	Strongly agree	51(16.8)		
Blood should have to be commercially available	Strongly agree	64(21.1)	117(38.6)	186(61.4)
	Agree	99(32.7)		
	Neutral	23(7.6)		
	Disagree	68(22.4)		
	Strongly disagree	49(16.2)		
Encourage other to	Strongly disagree	0(0)	279(92.1)	24(7.9)

donate blood is good.	Disagree	0(0)		
	Neutral	24(7.9)		
	Agree	150(49.5)		
	Strongly agree	129(42.6)		
Students shouldn't have to become regular donor	Strongly agree	27(8.9)	117(38.6)	186(61.4)
	Agree	18(5.9)		
	Neutral	141(46.5)		
	Disagree	84(27.7)		
	Strongly disagree	33(10.9)		
Students should have to tell to their family/friend that they donated blood	Strongly disagree	4(1.3)	240(79.2)	63(20.8)
	Disagree	2(0.7)		
	Neutral	57(18.8)		
	Agree	184(60.7)		
	Strongly agree	56(18.5)		
Students should have to donate blood to their relatives only	Strongly agree	9(3)	282(93)	21(7)
	Agree	0(0)		
	Neutral	12(4)		
	Disagree	175(57.7)		
	Strongly disagree	107(35.3)		
Total		**303(100)**		

5.4 Practice of blood donation

Among 303 study participants about 67(22.1%) of them voluntary donated blood at least once in their life. Around 46(68.6%) of them feel Satisfaction after donating blood. Among respondents who have never donated blood in their life, 68(28.8%) and 67(28.3%) of them have the reason that no one has ever asked them to donate blood and they never thought about donating blood respectively.

Table 5: Participants response to practice assessment questions about blood donation among undergraduate medical and Health Science students of Wolkite University 2021.

Practice questions	**Response**	**Frequency No (%)**	**Practice questions**	**Response**	**Frequency No (%)**
Have you ever donated blood(**n= 303**)	Yes	67(22.1)		No	236(77.9)
How many time you have donated	Once	18(26.7)	Reason for not donating	Fell medical unfit	95(40.4)
	Twice	29((43.3)		Religious	1(0.4)
	Three and above	20(30)		Fell pain	5(2.1)
Why did you donate	A friend/relative needed blood	0(0)		Parents/friends told not to donate blood	0(0)
	Voluntary	67(100)		No one has ever asked me to donate blood	68(28.8)
	Remuneration/being paid	0(0)			
	To know my screening result	0			

What did you feel after donation	Satisfaction	46(68.6)	Never thought about donating blood	67(28.3)
	Generally better	14(20.9)	Do not like the idea of donating	0(0)
	Tired/fatigue	7(10.5)	Other	0(0)
	Mixed feeling	0(0)		
Total		**67(100)**		**236(100)**

6. DISCUSSION

This study determined that the level of knowledge of the students regarding blood donation about 194 (64%) had good knowledge. This is much lower than a study conducted in Nigeria (85%)[30] and Addis Ababa, Ethiopia, (83.6%)[36]. on the other hand its higher than south India (42.7%), Malaysia (46.2%) north western Somalia Hargeisa University students[26];[23]. The possible reason for the variation might be attributed to the differences in socio demography. Similarly it showed much higher than study done in Harar town, the differences could be due to health science students have good awareness than residents of town. Level of knowledge in this study was higher as compared to study done in Ambo University student (40.4%)[17].This might be the study where all respondents in Ambo includes all the students of other faculty while this study considers only undergraduate health science and medical students. But it also showed higher level of knowledge done on similar participants of Gonder university undergraduate graduating health science and medical students (48.2%) [31].

This study determined that the level of attitude of the students regarding blood donation. About 174 (57.4%) had positive attitude towards blood donation. This goes with the study conducted in Malaysia 57.1% [23]. In the other hand much lower than the study conducted in Health Science students in South India revealed that 87.3% [22] and Gondar town 82% [31]. On the other hand it is higher than the studies in north west Somalia Hargeisa University students (46.9%) [26]. this discrepancy might occur due to sociocultural difference. The finding of this study is higher than study conducted at Ambo University on regular students 40% [17].

This study revealed that among 303 study participants about 67(22.1%) of them voluntary donated blood at least once in their life. This is half less than from finding in Nigeria health care workers (41.4), south Indian health science student (38%) and the study conducted in central India 47.5%[30;22;30]. The difference may be due to sociocultural difference, assess to learning opportunities on the importance of blood donation and establishment of a well-organized blood donation club. But this study finding is consistent with the studies done Harar (22.6%) Ambo university regular students (23.6%) and Addis Ababa health science students (23%) [34; 17; 31] and also it is higher than Gonder university graduating undergraduate health science health(12.5%), Debre Markos(18%)[31]. this differences might be due to promotional effect of the blood banks and other social institutions regarding the importance of blood donation.

According to the study, majority of the study participants were knowledgeable and have positive attitude regarding blood donation. However a small proportion (22.1%) of them had ever donated blood before. Therefore, the finding of this study would suggest that knowledge does not necessarily lead to actual blood donation practice because of the mythical beliefs and wrong perception still held by the community where participants lived with. The main reasons that the study participants reported for not donating blood were no one has ever asked me to donate blood (28.3%) and never thought about blood donating (28.8%).which goes in consistent with study conducted in Gonder University graduating undergraduate health science health [31].

Large proportion of undergraduate Health Science and medical science students had good knowledge and positive attitude regarding blood donation, but the practice of blood donation was low. Therefore, promotion and sanitization strategies to enhance knowledge, attitude and practice of students concerning blood donation is essential. Even though there are many higher educational institutions across the country, there is a shortage of potential blood donors to meet the safe blood requirements of the country. The role of healthcare educational institutions and that of their students in voluntary blood donation is crucial. They should play a leading role in donating blood and creating awareness among the entire students of the institution. Hence, targeted strategies such as seminars, trainings and workshops should be regularly conducted to increase awareness and encourage voluntary blood donation among student.

Limitation of the Study

This study was conducted through cross-sectional study and may not show the cause and effect relationship. And also limitations of this study were related to the inherent nature of knowledge, attitude and practice studies: the responses of the students might be influenced by socially desirable traits, so that the attitude and practice of the students may not be exactly reflected; The other limitation of this study is that the students were from only undergraduate class of medical and health Science College; hence the result is not generalizable population in the community.

7 CONCLUSION AND RECOMMENDATION

7.1 Conclusion

This study revealed that 64% of undergraduate class of Wolkite University College of health and medical science students had good knowledge about blood donation.

About 57.4% of them had positive attitude toward blood donation.

Finally this study identified that the voluntary blood donation practiced among 303 study participants were only 22.1%.

7.2 Recommendation

Based on the study finding the following recommendations are forward.

- Government should design promotion and mobilization strategies to enhance knowledge, attitude and practice of students towards blood donation. Targeted strategies should be designed to increase awareness of health science students about blood donation. Strategies which encourage the students to donate blood voluntarily should also be designed.
- Wolkite University College of medicine and health science administration and blood bank should prepare discussions, seminars, and other means of awareness creation strategies to improve practice of the students.
- The university should establish or res-strengthen blood donation clubs.
- Clubs in the university should organize different events to increase the number of blood donors and create more awareness towards blood donation, which is organized on regular bases.
- Interventional activities by the red cross society and live for generation club to bring about behavioral changes among the students on the wider benefit of blood donation for donors and community are recommended.
- Local healthcare institutions should lead voluntary blood donation from the front to donate blood voluntarily and take all necessary steps to create more awareness program on blood donation among students and the community.
- It is better that the government incorporates blood donation topic into the existing curriculum and working in collaboration with the mass media and, different national and international

institutions.

- Further in-depth studies should be conducted to assess knowledge, attitude and practice, and its associated factors in order to solve problems of blood donation from the root.

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9. ANNEX

9.1 Consent form

We are 4 year public health officer students of Wolkite University College of health and medical science we are going to undertake a prospective research entitled “knowledge, attitude and practice to ward of blood donation among under graduate health science student in Wolkite University”. We prepare questionnaires to distribute graduate class students to asses KAP health science students. The information from this study will not be used for other purposes by any of the institutions and individuals without your agreement and the information will be completely confidential.

9.2 Data collection and coding forms

Questionnaire used to assess knowledge, attitude and practice towards blood donation among undergraduate health science students of Wolkite University

	Part I: Socio-demographic Characteristics	
1.	Department	_____
2.	Age	_____ year
3.	Sex	1. Male 2. Female
4.	Place of birth	1. Urban 2. Rural
5.	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Others(specify)_____
6.	Marital status	1. Single 3. Divorced 2. Married 4. widowed
7.	Ethnicity (specify)	_____
8.	Family monthly income	_____birr
	Part II: Knowledge questions	

9.	The sources from where you heard about blood donation For the first time	1. Relatives/friends 3. TV/Radio 2. Health professionals 4. Newspaper/books 5. Others, specify_____
10.	Is blood donation harmful to the donor?	1. Yes 2. No 3. No idea
11.	The place where blood is donated	1. Hospital 3. Mobile blood donation centers 2. Health center 4. Red Cross center 5. Others, specify_____
12.	What is the goal of blood donation	1. Save the life of relatives 3. get health insurance 2. Save someone's life 4. Don't know
13.	What is the minimum and maximum age for donation	_____ and _____ years respectively
14.	Minimum weight of a donor to donate blood	_____Kg
15.	What is maximum volume of blood a donor can donate once?	1. 250ml 3. 450ml 2. 350ml 4. Don't know
16.	At what minimum interval a person donate blood?	1. Every 3 months 3. Once in a year 2. Every 6 months 4. Don't know
17.	Do you know about blood group?	1. Yes 2. No 3. I don't know
18.	Which blood group type is the commonest one?	1. A 2. B 3. AB 4. O
19.	Can pregnant women donate blood?	1. Yes 2. No 3. I don't know
20.	Can a female during menstruation donate?	1. Yes 2. No 3. I don't know
21.	Can a cigarette smoker donate blood	1. Yes 2. No 3. No idea
22.	Can a person be infected by receiving blood	1. Yes 2. No 3. Don't know

	transfusion					
23.	Can a person donate when blood pressure is low	1. Yes 2. No 3. Don't know				
24.	Can a person with high blood pressure donate	1. Yes 2. No 3. Don't know				
25.	Have you tested for HIV/AIDS	1 Yes 2 No				
26.	Can HIV infected person donate blood?	1. Yes 2. No 3. Don't know				
27.	What disease can be transmitted by blood transfusion?	1. TB 2. HBV 3. Tb and malaria 4. Malaria 5. Don't know 6. Malaria and HBV 7. TB and HBV				
28.	What is the best source of donor blood?	1. Voluntary 3. Remunerated/paid 2. Replacement 4. Don't know				
29.	Do all surgical procedures require blood transfusion?	1. Yes 2. No 3. No idea				
	Part III: Attitude question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
30.	Blood donation is a moral duty					
31.	Students should have to voluntarily donate for the future					
32.	Blood donation is harmful to the donor					
33.	Students should have to donate blood to unknown person if they asked					
34.	Blood should have to be commercially available					
35.	Encourage other to donate blood is					

	good.					
36.	Students shouldn't have to become regular donor					
37.	Students should have to tell to their family/friend that they donated blood					
38.	Students should have to donate blood to their relatives only					

	Part IV: Practice of blood donation questions	
39.	Have you ever donated blood before	1. Yes 2. Never
40.	If "yes" to #34, how may time you have donated	_____
41.	If "yes" to #34, why did you donate?	1. A friend/relative needed blood 2. Voluntary 3.Remenuration/being paid 4. to know my screening result
42.	If "yes" to #34, what did you feel after donation	1. Satisfaction 3. Tired/fatigue 2. Generally better 4. Mixed feeling
43.	If "Never" to #34,, reasons for not donating blood	1. fell medical unfit 2. no information 3.fell pain 4. Parents/friends told not to donate blood 5. No one has ever asked me to donate blood 6. Never thought about donating blood 7. Do not like the idea of donating 8. Other, Specify_____ _____

Thank you Very much for your voluntary participation!!!!!