

Knowledge, Attitude and Practice of Blood Donation among Health Science Students in a Selected Private University in Somalia

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Abstract

Background information: Donating blood is an act that can save the lives of thousands of people worldwide. Objective: To assess the knowledge, attitude and practice of blood donation among public health student in East Africa University (EAU)

Methodology: A cross sectional study was conducted from June, 1 to 20, 2022 among public health students. A total of 40 public students were selected using simple random sampling. Data was collected using pre tested, structured questionnaire. Data was cleaned, edited and entered in to a computer and analyzed using SPSS V21. Confidence interval was 95% with P value of 0.05.

Result: 40 regular public health students which are sampled from all public health student of East Africa University in the academic years of 2019, 2020, and 2021 participated. Overall, the Sociodemographic variables showed that: 59%. Analysis of the knowledge level of students about blood donation revealed that: 90% of them had good knowledge and 10% had poor level of knowledge regarding blood donation. Public health respondents (18 out of 40) of participants had Positive attitudes which reveals (45%) had a good attitude of blood donation said blood donation is good; whereas said bad (9 out of 40) which indicate (22.5%) had negative attitudes. While natural answered (5 out of 40) which reveal 12.5% believe blood neutral. I don't know answered (8-40) which shows 20% of the don't have any attitude about blood donation.

Conclusion: 45% of public health student have positive attitude toward blood donation and all of the student are willing to donate in the future voluntary (14 out of 40) answered that they were not donated blood which indicate 35% of the responders never donate blood before and the major reason is lack of opportunity, medical illness and not knowing the reason. Out of the total study (26 out of 40) answered that they were donated blood which means 65% of the students was donated blood before and 55% of them donated blood voluntarily.

Recommendation: Awareness creation should be given to student in high school and higher institutions. Blood donation campaign should be given to student; possible opportunity should be given that help the student to donate voluntarily. Since East Africa University (EAU), branch blood bank at all regions of Puntland Somalia has no access available electricity at any time, in collaboration with of ministry of Health (MOH) and East Africa University (EAU), it is better to recommend to open "mini blood bank" Keywords: Knowledge, Attitude, Practice, Blood, Garowe, Somali.

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Introduction

Transfusion medicine is the branch of medicine that is concerned with the process of collecting (donation), testing, processing, storing, and transfusing blood and its components. It is a cornerstone of emergency and surgical medicine. The blood

collection process typically takes place in donor centers. Blood banks are sections of clinical laboratories that process, test, and distribute blood and its components [1]. According to WHO, an estimated 38% of reported voluntary blood donations are contributed by people under the age of 25. WHO also insist countries to focus on young people to achieve 100 per

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cent voluntary unpaid blood donation. Young students are healthy, active, dynamic and receptive and constitute a greater proportion of population. They have to be encouraged, inspired and motivated to donate blood voluntarily [2].

According to the Melbourne declaration WHO recommends all governments to achieve 100% voluntary non-remunerated donations by 2020 as the cornerstone of their blood policies, in accordance with World Health Assembly resolutions WHA28.72 and WHA58.13 [3,4]. The need for safe and secure supplies of blood and blood products is universal. Worldwide, at least 90 million units of blood are donated each year to save lives and to improve health. However, demand for blood for transfusion continues to increase and many countries cannot meet existing needs [5]. In many regions their inadequate supplies to replace blood lost in child birth and to treat anemia that threatens the lives of children who have malaria or are undernourished. Everywhere blood and blood products are needed for routine and emergency surgery, including lifesaving treatment for growing number of people in road traffic accidents, and for treating congenital blood disorders [6]. In Somalia there is no specific areas collected for the blood while developing countries e.g. Ethiopia more than 60% of blood is collected in schools.

The national requirement for blood is for is not estimated per year. Collection levels supply only 43% of these Key challenges to progress include a relatively high prevalence of HIV, poor community awareness of the importance of VNRBD with a consequent lack of voluntary donors, social taboos and misconceptions about blood donation within the community. There is a lack of management commitment, no donor database, no effective strategy for donor retention and access to public media is limited [7,8].

Materials and Methods

Cross-sectional study design was conducted EAU in Garowe capital city of Punt land state Somalia from June 01-20 2022. Garowe is located in the northeast Somalia 785 Km distance away from the capital city of Somalia.

Sample size

Defined population

Sample size given

$N = 1320$ $N =$ Total student of East Africa University (EAU)

$n = 230$ $n =$ public health student

$Z =$ sample size

$Z = N \sqrt{n+1} \sqrt{n}$

$Z = 1320 \sqrt{231} = 5.7$

$= 230 \sqrt{5.7} = 40$ responders

Selection criteria

Inclusion criteria

The following criteria were included in the study technique.

- The regular student of public health student in East

Africa University (EAU)

Exclusion criteria

The following criteria were excluded from the study sample.

- Student who are not public health in East Africa University (EAU)
- Lecturers or staff of the of East Africa University (EAU)
- The persons aged under 15 years are excluded this study.

Data management and analysis plan

Semi structured questionnaire was used as the data collection tool. The respondents were interviewed and the practice level were observed and recorded in the observational checklist by the researcher. Most of the questions were close ended and semi structured and few were mixed and open-ended questions.

The score of Attitude related question will range from 1 to 5. Different demographic data were the operational variables which were scaled on ratio or nominal scale. The knowledge and practice level were having test scores on knowledge on dengue disease, vector, transmission and prevention was scaled in ordinal scale. The variables of attitude were scaled in Likert's scale which was compared in ordinal scale. The collected data were cleaned, separated then entered on the computer program through EXCELL and SPSS

Descriptive statistics (frequency, mean, percentage and standard deviation) was used to summarize and describe the data. Frequency distribution was found in terms of Socio demographic practices, Level of knowledge, Attitude towards dengue blood donation, Practice regarding dengue fever prevention. Cross tabulation was done for Level of practice behavior and of blood donation, Age, sex, marital status, education, occupation, Source of information about of blood donation. Chi-square test was tested to find out association between socio demographic characteristics and practice; Knowledge and practice; and Attitude and Practice so as to find the strength and direction of the relationship.

Ethical consideration

- Permission was taken from the student affairs office and dean of faculty of health science department of public health in East Africa University (EAU)
- The verbal information consent was taken from the individuals.
- The respondents were having right to leave the interview or not answer and skip any question.

Results

According to the **Table 1** the age of respondents 30% were in between 18-29 years, 44% of the respondents their age was between 20-25 years, while the 18% of the respondents their age was in between 25-29 years, also the 8% of the respondents their age was between greater than 29 years (**Table 2**).

Table and **Table 2** Shows that the most respondent in this study

Table 1. Age respondent.

Option	Age	Frequency	Percentage
A	18-20	17	30%
B	20-25	25	44%
C	25-29	10	18%
D	> 29	5	8%
E	<18	0	0%
Total		40	100%

Source: Primary data

Table 2. Gender respondent.

Option	Gender	frequency	Percentage
A	Male	29	59%
B	Female	11	41%
Total		40	100%

Source: Primary data

Table 3. Year of study respondent.

Option	Year of the study	frequency	Percentage
A	Year one	10	25%
B	Year two	10	25%
C	Year three	10	25%
D	Year four	10	25%
Total		40	100%

Source: Primary

was male (33 out of 40), which means 59% of the respondents was male. While 41% of the respondent are female (11 out 40)

Table 3 shows year of the study respondent, Year one, tear two, year three and year four respectively answered each year (10 out of 40) which means 25% and Total addition for their percentage is 100%.

According to **Table 4** indicates that the 40% of the respondents their family size were 3-6 members, while the 27.50% of the respondents their family were 1-3 members, also the 25% of the respondents their family size was 6-9 members and 7.50% of the respondents their family size was greater than 9 members.

Table 5 shows level of knowledge of blood donation and this research indicates the most of the respondent have enough knowledge about blood donation (36 out of the 40) which means 90% have well knowledge of blood donation, while (4 out of 40) don't have known blood donation which means 10% (**Table 6**).

Almost all of the study participants said that men, women, young and sick person should donate blood. Also, (16 out of 40) which means that 40% of the students agreed that diseases people can donate blood. While (7 out of 40) which indicate 17.5% of the students should donate blood children under eight years, finally (6 out 40) which indicate that 6% was agreed will donate blood for woman. Lastly (3 out of 40) of the responders answered that they will donate blood men which indicate 7.50% of the respondents will donate blood for men (**Table 7**).

According to **Table 8** indicates that the 45% believe that the best source of blood is 18-35 years old, while the 20% of the respondents answered the best source of blood is found the

Table 4. Family sizes of the respondents.

Option	Family size	Frequency	Percentage
A	1_3	11	27.50%
B	3_6	16	40%
C	6_9	10	25%
D	>9	3	7.50%
Total		40	100%

Source: Primary Data

Table 5. Blood donation of the respondent.

Option	Family size	Frequency	Percentage
A	Yes	36	90%
B	No	4	10%
Total		40	100%

Source: Primary source data

Table 6. Blood donation respondent.

Option	Who donate blood	frequency	Percentage
A	Men	3	7.50%
B	Woman	6	6%
C	Young <8	7	17.50%
D	Sick person	16	40%
Total		40	100%

Source: Primary Data

Table 7. Shows Suitable age for blood donation.

Option	Suitable age for blood donation	frequency	Percentage
A	18_35	18	45%
B	35_45	8	20%
C	>45	7	17.50%
D	I don't know	7	17.50%
Total		40	100%

Table 8. Minimum weight of blood donation of the respondents.

Option	Minimum weight of blood donation	Frequency	Percentage
A	50	9	22.50%
B	45	5	12.50%
C	60	12	30%
D	I don't know	14	35%
Total		40	100%

age between 35-45 years old, also the 17.5% of the respondents replied that the best source of blood is more than 45 while finally 7 members of the responders answered I don't know which reveal 17.5% of the responders don't the best source of blood donation.

Table 9 indicate minimum weight of blood donation. The most responders of the study answered suitable age of blood donation we don't know answered (14 out of the 40) which means 35%, whereas 60 kg (12 out of 40) which point out 30% while 45 kg, (5 out of 40) which means 12.5% and lastly 50 kg (9 out of 40) which indicate 22.5% of public health student answered that they believe minimum weight which person can donate is 50 kg.

Table 9. Shows how often an individual donation respondent.

Option	Can be donate blood	Frequency	Percentage
A	Weekly	5	12.50%
B	After three months	18	45%
C	After six months	8	20%
D	Annually	9	22.50%
Total		40	100%

Table 10. A person be infected by receiving blood transfusion.

Option	Person can be infected by receiving blood	Frequency	Percentage
A	Yes	34	85%
B	No	6	15%
Total		40	100%

Table 11. Shows that transmitted diseases by blood.

Yes	Option	Frequency	Percentage
A	HIV-AIDS	25	62.50%
B	HBV	5	12.50%
C	Malaria	4	10%
D	Syphilis	4	10%
E	All of them	2	5%
	Total	40	100%

Table 10 indicates how individual always can donate blood most of public health student respond after three month (18 out of the 40) which reveal 45% of the responders agreed that an individual can donate blood after three month whilst, annually (12 out of 40) which point out 30% of the responders approved that an individual can donate blood after one year or annually also after six month (5 out of the 40) which means 12.5% confirmed that an individual can donate blood after six month and finally weekly answered (5 out of 40) which indicate 12.5% of public health student answered that they believe that an individual can donate blood weakly.

According to the table reveals that the 85% of the respondents were answered that a person can be infected by receiving blood transfusion (34 out of 40), whilst 15% of the respondents were reply that person cannot infected by blood transfusion (6 out of 40) (**Table 11**).

That the 62.5% of the respondents their answered was HIV-AIDS transmitted disease by blood transfusion, while 12,5% of the respondents their answered was HBV transmitted disease by blood transfusion, also 10% of the respondents their answered was malaria was transmitted disease by blood transfusion, similarly 10% of the respondents their answered was Syphilis transmitted disease by blood transfusion and finally only 5% of the respondents their answered was all of the above transmitted disease by blood transfusion (**Table 12**).

Most respondents (18 out of 40) of participants had Positive attitudes which reveals (45%) had a good attitude of blood donation said blood donation is good; whereas said bad (9 out of

40) which indicate (22.5%) had negative attitudes. While natural answered (5 out of 40) which reveal 12.5% believe blood neutral. I don't know answered (8-40) which shows 20% of the don't have any attitude about blood donation (**Table 13**).

When During the research out of 40 public health student, (22 out of 40) answered the best source blood donor is voluntary (55%), (20 out of 40) of them respond Replacement donor which reveal (27.5%), (2 out 40) agree the best source of blood is paid donor which indicate a(5%) and lastly (5 out of 40) of them answered self-donor(12.5%) (**Table 14**).

According to **Table 15** reveals that (33 out of 40) of the responders were answered that can something happen during blood donation and this reveals that 82.5% of the students are answered that can something happen during blood donation while (7 out of 40) of the student answered (no) which means no problem can come during blood donation and this point out 17.50% of the students answered something cannot happen during blood donation.

Tell that (21 out of 33) of the responders were answered that contract fall sick can happen during blood donation this reveals 52.5% of the students are answered that can something happen

Table 12. Indicates attitude of blood donation.

Option	Blood donation	Frequency	Percentage
A	Good	18	45%
B	Bad	9	22.50%
C	Natural	5	12.50%
D	I don't know	8	20%
Total		40	100%

Table 13. Shows the best source of donor blood.

Option	Best source of blood	Frequency	Percentage
A	Voluntary	22	55%
B	Replacement	11	27.50%
c	paid	2	5%
D	self-donor	5	12.50%
Total		40	100%

Table 14. Shows the something can happen to an individual during or after donation.

Option	Something happens during or after donor	Frequency	Percentage
A	Yes	33	82.50%
B	NO	7	17.50%
C	Total	40%	100%

Table 15. Shows what can happen to the blood donor during or after a blood donation.

Option	what can happen to a blood donor during or after donation	Frequency	Percentage
A	Contract Infection	7	17.50%
B	Temporary Weakness	5	12.50%
C	Fall Sick	21	52.50%
D	Total	33	82.50%

during blood donation while (7 out of 33) of the student answered contract infection can occur and this indicate 17.50% of the learner answered that contract infection can occur, also (5 out of 33) of the responders are respond fall sick can occur during blood donation this show 12.5% of the students answered that fall sick can occur during blood donation (Table 16).

Most of the respondent of public health student (22 out of 40) of the respondent were answered people are reluctant to donate blood by fearing blood donation which indicate 55% of the responders fear blood donation while (8 out of 40) of the responders answered that they don't have knowledge about blood donation means 20% was ignorance while (6 out of 40) answered lack of motivation which means 15% of the responders was lack of motivated, finally (4 out of 40) never donated before which means 10% of the responders answered I don't know (Table 17).

According to Table 18 most respondents (26 out of 40) answered that they was donated blood which means 65% of the students was donated blood before while (14 out of 40) answered that they was not donated blood which indicate 35% of the responders was not donate blood before.

That (13 out of 26) of the respondents was donated blood by friend request and this indicates 50% of the responders donated blood by friend request, while (6 out of 26) of the responders where we donate blood by voluntary which reveal 23% of the responders donate blood as a voluntary also (4 out of 26) of the responders answered we don't know the why we donate and this shows 15.5% of the responders don't know the why they donate blood finally (3 out of 26) of responders answered we donate blood to know our screening and this reveals 11.5% was donated

Table 16. Below shows why people are reluctant to donate.

Option	People are reluctant to donate	Frequency	percentage
A	Fear	22	55%
B	Ignorance	8	20%
C	Lack of motivation	6	15%
D	I don't know	4	10%
Total		40	100%

Table 17. Shows number of persons donated blood.

Option	Have u donate before	Frequency	Percentage
A	Yes	26	65%
B	NO	14	35%
C	Total	40	100%

Table 18. Shows why they did donate blood.

Option	Did you donate	Frequency	Percentage
A	Fried request	13	50%
B	Voluntary	6	23%
C	To know my screening	3	11.50%
D	I don't know	4	15.50%
Total		26	100%

blood to know their screening [9-11].

Discussion

Knowledge of medical student to ward blood donation

Analysis of the knowledge level of students about blood donation revealed that: 90% of them had good knowledge and 10% had poor level of knowledge regarding blood donation.

During this study Almost all of the study participants said that men, women, young and sick person should donate blood. Also, most of the responders answered that they will donate blood diseased person, (16 out of 40) which means that 40% of the students agreed that diseased people can donate blood, while (7 out of 40) which indicate 17.5% of the students should donate blood children under eight years. (6 out of 40) which indicate that 6% was agreed will donate blood for woman. Lastly (3 out of 40) of the responders answered that they will donate blood men which indicate 7.50% of the respondents will donate blood for men.

Since public health student is very important to know the best source of blood before an I individual donate blood 45% believe that the best source of blood is 18-35 years old, while the 20% of the respondents answered the best source of blood is found the age between 35-45 years old, also the 17.5% of the respondents replied that the best source of blood is more than 45 while finally 7 members of the responders answered I don't know which reveal 17.5% of the responders don't know the best source of blood donation.

The most responders of the study answered suitable Wight of blood donation we don't know answered (14 out of the 40) which means 35% of the responders answered that they don't know the best source of blood, whereas 60 kg (12 out of 40) which point out 30% of the responders agreed that the best of blood is from a person of 60 kg, while 45 kg, (5 out of 40) which means 12.5% and lastly 50 kg (9 out of 40) which indicate 22.5% of public health student answered that they believe minimum weight which person can donate is 50 kg.

Majority of public health student respond that they donate blood after three month (18 out of the 40) which reveal 45% of the responders agreed that an individual can donate blood after three month whilst, annually (12 out of 40) which point out 30% of the responders approved that an individual can donate blood after one year or annually also after six month (5 out of the 40) which means 12.5% confirmed that an individual can donate blood after six month and finally weekly answered (5 out of 40) which indicate 12.5% of public health student answered that they believe that an individual can donate blood weakly. Receiving blood can be infected from one person to another person, 85% of the respondents were answered that a person can be infected by receiving blood transfusion (34 out of 40), whilst 15% of the respondents were reply that person cannot infected by blood transfusion (6 out of 40). 62.5% of the respondents their answered was HIV-AIDS transmitted disease by blood transfusion, while 12.5% of the respondents their answered was HBV transmitted disease by blood transfusion, also 10% of the respondents their answered was malaria was transmitted disease by blood transfusion, similarly 10% of the respondents their

answered was Syphilis transmitted disease by blood transfusion and finally only 5% of the respondents their answered was all of the above transmitted disease by blood transfusion.

Attitude of public health student toward blood donation

Public health respondents (18 out of 40) of participants had Positive attitudes which reveals (45%) had a good attitude of blood donation said blood donation is good; whereas said bad (9 out of 40) which indicate (22.5%) had negative attitudes. While natural answered (5 out of 40) which reveal 12.5% believe blood neutral. I don't know answered (8-40) which shows 20% of the don't have any attitude about blood donation. During this study out of 40 public health student, (22 out of 40) answered the best source blood donor is voluntary (55%), (20 out of 40) of them respond Replacement donor which reveal (27.5%), (2 out 40) agree the best source of blood is paid donor which indicate a (5%) and lastly (5 out of 40) of them answered self donor (12.5%). (33 out of 40) of the responders were answered that can something happen during blood donation and this reveals that 82.5% of the students are answered that can something happen during blood donation while (7 out of 40) of the student answered (no) which means no problem can come during blood donation and this point out 17.50% of the students answered something cannot happen during blood donation. (21 out of 33) of the responders were answered that contract fall sick can happen during blood donation this reveals 52.5% of the students are answered that can something happen during blood donation while (7 out of 33) of the student answered contract infection can occur and this indicate 17.50% of the learner answered that contract infection can occur, also (5 out 33) of the responders are respond fall sick can occur during blood donation this show 12.5% of the students answered that fall sick can occur during blood donation.

Practice of public Health student toward blood donation

Out of the total study (26 out of 40) answered that they were donated blood which means 65% of the students was donated blood before while (14 out of 40) answered that they was not donated blood which indicate 35% of the responders was not donate blood before. Most of the respondent of public health student (17 out of 26) were answered that they donate blood after three month which point out 42.5% of the responders donate after three months while (9 out of 26) of the responders answered that they donate blood annually which means 22.5% of the responders donate blood also (0 out of 26) of the responders answered don't donate blood weakly which means 0% weakly. most respondents of public health student (16 out of 26) answered that they donate blood less than one year which means 40% of the responders donated blood less than one year while (10 out 26) donated blood one year ago which reveal 25% of the responders were donated blood one year ago.

(13 out of 26) of the respondents was donated blood by friend request and this indicates 50% of the responders donated blood by friend request, while (6 out of 26) of the responders where we donate blood by voluntary which reveal 23% of the responders donate blood as a voluntary also (4 out of 26) of the responders

answered we don't know the why we donate and this shows 15.5% of the responders don't know the why they donate blood finally (3 out of 26) of responders answered we donate blood to know our screening and this reveals 11.5% was donated blood to know their screening.

(17 out of 26) of the respondents was fill after donated blood by positive feeling and this indicates 42.5% of the respondents have a positive feeling after donating a blood, while (9 out of 26) of the responders were met negative feeling after donating blood which indicate 22.5% of the respondents. 26 of public health student never donated before, reason for not donating blood is no body ask me answered (6 out of 26) which indicates (23%) of the responders never asked for blood donation. while fear of injection respond (8 out of 26) which specify (11.5%) of the responder's fear for injection, medical illness answered (3 out of 26) of the responders were medical illness which indicate 11.5% have medical illness, also I will be sick answered (5 out of 26) which indicate 19.1% of the responders believe that they will be sick if they donate blood. Whereas (4 out of 26) of the responders answered don't know which indicate 15.4% of the student don't know why they don't donate blood.

Conclusion

This research indicates the most of the respondent have enough knowledge about blood donation (36 out of the 40) which means 90% have well knowledge of blood donation, while (4 out of 40) don't know blood donation which means 10% of the responders don't know more about blood donation. Also (26 out of 40) answered that they were donated blood which means 65% of the students was donated blood before while (14 out of 40) answered that they were not donated blood which indicate 35% of the responders was not donate blood before.

During this study most respondents (18 out of 40) of participants had Positive attitudes which reveals (45%) had a good attitude of blood donation said blood donation is good; whereas said "bad" answered (9 out of 40) which indicate (22.5%) had negative attitudes. While natural answered (5 out of 40) which reveal 12.5% believe blood neutral. I don't know answered (8-40) which shows 20% of the respondent doesn't have any attitude about blood donation.

Recommendation

- Awareness creation should be given to student in high school, higher institutions.
- Blood donation campaign should be given to student
- Possible opportunity should be given that help the student to donate voluntarily.
- Since blood bank, of Garowe, branch and all Punt land regions have no access for electricity for 24 hours the government must try to establish new method which electricity can access at any time. Blood bank is very important during health because it can save millions of persons per hour so the government must give special attention for the availability of electricity and maintaining of blood bank by sustaining its maintaining and its awareness to the community.

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