Journal of Blood Disorders and Medicine
ISSN 2471-5026 | Open Access

RESEARCH ARTICLE

Volume 3 - Issue 1 | DOI: http://dx.doi.org/10.16966/2471-5026.120

Assessment of Knowledge and Practice towards Blood Donation among Gedebano Secondary and Preparatory School Students, Mehal Amba, SNNPR, Ethiopia

Suoud Jemal[1]* and Rebik Shukure[2]

[1]*Department of Nursing, College of Health and Medical Sciences, Samara University, Afar, Ethiopia*
[2]*Department of Nursing, Faculty of Health Sciences, Salale University, Oromia, Ethiopia*

***Corresponding author:** Suoud Jemal, Department of Nursing, College of Health and Medical Sciences, Samara University, Afar, Ethiopia, Tel: +251920594101; **E-mail:** manjames928@gmail.com

Received: 06 Jan, 2018 | **Accepted:** 15 Feb, 2018 | **Published:** 21 Feb, 2018

Citation: Suoud J, Rebik S (2018) Assessment of Knowledge and Practice towards Blood Donation among Gedebano Secondary and Preparatory School Students, Mehal Amba, SNNPR, Ethiopia. J Blood Disord Med 3(1): dx.doi.org/10.16966/2471-5026.120

Abstract

Background: Blood transfusion is one of the most crucial needs of the society in multiple diseases and injuries. Unexpectedly, thirty-eight countries in Africa got below ten donations per one thousand populations. Shortage of blood is one of the reasons for the death of mothers in sub-Sahara, including Ethiopia. Although the need for blood is high in our country Ethiopia, the number of volunteer donors is still very low.

Method: A descriptive cross-sectional study design was conducted on Gedebano secondary and preparatory students using pre-tested self-administered questionnaires. Multi-stage sampling technique was employed to select study participants.

Result: Out of 392 participants, 182(46.43%) were knowledgeable whereas 210(53.57%) had poor knowledge about blood donation. The majority, 372(94.9%) of the study participants had never donated blood.

Conclusion: the study showed that less than half of the study participants were knowledgeable and the majority had a poor practice of blood donation.

Keywords: Knowledge; Practice; Blood donation

Introduction

Background

Blood is a vital liquid flowing in the bodies of many types of animals that convey nutrients and oxygen. World Health Organization (WHO) estimates that blood donation by 1% of the population is generally the minimum needed to meet a nation's most basic requirements for blood. In addition, WHO also advocates for 100% non-remunerated voluntary blood donation (VBD), aimed at ensuring the safety of blood. According to its 2011 report, 107 million blood donations are collected globally; approximately half of these are collected in the high-income countries, home to 15% of the world's population [1]. Unexpectedly, 38 African countries collected fewer than 10 donations per 1000 people [2]. There has been gross inadequacy and in-equitability in access to blood safety in WHO's African region [3,4]. At the same time, in Sub-Sahara, the demand of blood transfusion is significant due to maternal morbidity, under-nutrition and the heavy burden of communicable diseases like malaria [5]. Shortage of blood is one of the reasons for the death of mothers in sub-Saharan countries [6].

Blood transfusion is an indispensable part of care delivery. Donating blood means saving thousands from dying around the world because blood is a fundamental component for people to live and nothing replaces it [7].

The blood and blood components for transfusion can be obtained from volunteer donors, direct donors, Paid donors, or through autologous donation. Volunteer donor is the one who donates a blood for an altruistic reason; intentionally to save the life of human beings who are being at critical situations [8]. Adequate and safe supply of blood and blood components such as whole blood, plasma , blood clotting factor (platelet), and red cell is essential to enable a wide range of critical care procedures to be carried out in hospitals [9].

Donated blood can be lifesaving for individuals who have lost large volumes of blood from serious condition such as road traffic accidents, obstetric and gynecological hemorrhages, or surgery and stem cell transplant patients, trauma, chemotherapy, patient in need of long term-therapies as well as for individuals who have symptomatic anemia from medical or hematologic conditions or cancer. Besides, blood transfusion is one part of complex medical and surgical interventions which improves the life expectancy and life quality in patients with a variety of acute and chronic conditions. Therefore, blood transfusion is now considered as an indispensable component of the medical management of many diseases [10-12].

The use of these lifesaving products may be complicated by infectious and immunological diseases some of which could be life-threatening [11,12]. The quality and the safety of blood transfusion is still a concern, particularly in the developing countries. Blood collection from unsafe donors, poor laboratory procedures and the inadequate testing of blood are the main reasons for these safety problems. Blood will be safe if there is a nationally coordinated blood transfusion service, a collection of blood only from voluntary non-remunerated donors, testing of blood for transfusion-transmissible infections and if there is transfusion of the right blood to the right patient through the appropriate clinical use of blood [13]. Providing sufficient and qualified blood for the society is an obligation on blood banks [14].

Blood donation may save thousands of people globally from dying. Based on WHO's 2011 report, 107 million donors donate blood around the world: nearly 50% collections occur in developed nations, composed of fifteen percent of the globe's population. Donation rates among rich, medium and poor nations were around thirty-nine, twelve and four donations per one thousand populations respectively. In developing countries, about sixty-five percent of blood transfusion is transfused to children less than 5 years old; however, in developed nations, clients above sixty-five years old are the commonest ones that receive blood which accounts seventy-six percent of the total transfusions.

The need for blood in care of patients is increasing because of sophisticated as well as advanced clinical medicine. But, the need and provision are never being in a balance; the need is increasing. Blood donation through payment is frequent in every part of Sub-Sahara even though all the donors are recommended to be volunteer and non-remunerated [15].

Presence of blood transmissible disease, complicacy of transfusion services, expensiveness of provision of transfusion services, increased demand of blood as a result of injury, acute and chronic medical illness, low donation rate, high deferral rate and organizational deficits are the major challenges in providing quality and adequate blood in less developed countries, particularly in African countries [16,17].

WHO recommends every country on focusing on the youth in order to fulfill hundred percent non-numerated and voluntarily obtained blood [13].

According to a research done on students in Nigeria, 61% of the students had good knowledge about blood donation, and eighty-five percent had no experience of donating blood. From the students who had an experience of donating blood, only 3% were volunteer donors [18].

According to a research done on 384 medical and health science students in Ethiopia at Addis Ababa University in 2014, 321(83.7%) of the students had good knowledge; but 63(16.4%) had poor knowledge about blood donation. 1/3 of the students had a negative attitude and below 1/4 had an experience of donating blood [19].

Methods and Materials

Study design

Institution-based descriptive cross-sectional study design was conducted in Gedebano Secondary and Preparatory School, Mehal Amba, Ethiopia

Study area

Gedebano Gutazer Welene Woreda is one of the 13 woredas (districts) found in Guraghie Zone, Southern Nations, Nationalities and People Region (SNNPR), in Ethiopia. It is located in the south of Oromia, north of Muhur-Aklil, east of Qebena, and west of Mesqane. The administrative center of Gedebano Gutazer Welene Woreda is MehalAmba.

According to 2016 Census conducted by central statistics agency of Ethiopia (CSA), the number of its total population is 116,949, of whom 57,305 are men and 59,644 women.

Population

Source population: All students of Gedebano Secondary and preparatory school.

Study population: Students of Gedebano Secondary and preparatory school who were included in the sampling procedures.

Eligibility criteria

Inclusion criteria: All students of Gedebano Secondary and preparatory school who were volunteers were included in the study.

Exclusion criteria: Students who were not able to fill the questionnaire by any reason

Sample size determination and sampling procedures

Sample size determination: The sample size was estimated by using single population proportion formula, $[n=(Z\alpha/2)^2p(1-p)/w^2]$. Considering a similar study conducted at Addis Ababa University about knowledge, attitude and practice towards blood donation among health science students, 83.7% (p=0.837) was used in this study by considering 95% confidence interval and Marginal error of 5%.

So, $ni=(Z\alpha/2)^2(P)(q)/w^2=(1.96)^2(0.837)(0.163)/(0.05)^2=210$. Since the Source population during the study period was less

than ten thousand (N<10, 000) which is 1172, the sample size was determined by correction formula as follows:

NF=ni/(1+(ni/N))=210/1+(210/1172)=178, But due to design effect the sample size was multiplied by 2, which was 356

Considering a 10% non-respondent rate, the final sample size of the study was 392.

Sampling technique and procedure: The proportional multistage sampling method was employed for this study. Grades 9th, 10th and 12th were selected from the school randomly, and then the selected grades were divided into different sections based on the school's designation (grade-9 consisted 6 sections, grade-10 consisted 4 sections and grade-12 consisted 2 sections). The sections to be studied from the three grades (sections A, C, D & E from grade-9, sections A, B & D from grade-10 and section A from grade-12) were selected by simple random sampling technique. The number of samples to be studied was determined by proportional allocation method using the sampling frame obtained from the Director's office. Finally, the data were collected by the study samples that were selected by lottery method.

Data processing and analysis

The data was cleaned, edited, checked for completeness. SPSS statistical software version 23 was used to analyze data. Descriptive statistics were computed and the result was presented in tables.

Data collection technique

The data was collected by using semi-structured, self-administered questionnaire. The questionnaire included socio-demographic characteristics, knowledge, and practice towards blood donation.

Data quality control

The questionnaire was prepared in English and translated into Amharic. Prior to the actual data collection, a pretest was conducted on 5% of the sample size on nearly similar population outside the study area to ensure the validity of the data collection tool and to standardize the questionnaire. The investigators closely followed up and frequently checked the data collection process to ensure the completeness and consistency of the collected data.

Operational definition

Knowledgeable: The study participants who scored 50% and above of the knowledge questions were considered as knowledgeable or had adequate/good knowledge.

Not knowledgeable: The study participants who scored less than 50% of the knowledge questions were considered as not knowledgeable or had poor knowledge.

Good practice: study participants who responded to the practice questions ≥ 50% was said to have a good practice.

Poor practice: study participants who respond to the practice questions <50% was said to have poor practice.

Ethical consideration

The study was conducted after the ethical letter was given to Gedebano Secondary and Preparatory School administrators. Then data was collected after informed and written consent was taken. To keep confidentiality, the participants' name was not written.

Results

Socio-demographic characteristics

A total of 392 students from four grades and 15 sections were approached for the study and all of them were participated with a response rate of 100%. The majority, 350(89.29%) of the students were from the age group 18-25 years and 233(59.44%) of the respondents were males. All the study participants were single in marital status. Religiously and ethnically, 375(95.66%) were Muslims and 381(97.19%) were Guragie respectively (Table 1).

Knowledge of study participants towards of blood donation

Knowledge about blood donation was assessed by using 14 questions. Respondents who answered less than 7(<50%) were considered as not knowledgeable whereas those who answered 7 and above (≥ 50%) were considered as knowledgeable about blood donation. Knowledge scores for each individual were calculated and summed up to give the total knowledge score. Out of 392 participants, 182(46.43%) were knowledgeable whereas 210(53.57%) had poor knowledge about blood donation. Majority; 276(70.41%), 271(69.13%), 274(69.9%), 257(65.56%) and 237(60.46%) of the study participants did not know the maximum volume of blood to be donated once, the minimum interval at which a person can donate blood, cigarette smokers cannot donate a blood, pregnant women can't donate blood and a person with high blood pressure can't donate blood respectively. However, above half, 243(61.99%) were knowledgeable about the minimum age to donate blood. Surprisingly, all 392 study participants were knowledgeable about an HIV-infected person can't donate blood (Table 2).

Practice towards blood donation

About 20(5.1%) of the study participants had an experience of blood donation before; of whom more than half, 11(55%) had ever donated once and 17(85%) were volunteer donors. About 6(30%) of the donors said that they had experienced some tiredness/fatigue whereas 8(40%) had satisfied after donation.

The majority, 372(94.9%) of the study participants had never donated blood. Among these, 113(30.38%) gave lack of adequate information, 107(28.76%) gave fear of pain, 68(18.28%) gave a feeling of medically unfit and 84(22.58%) had not been asked to donate blood, as a reason (Table 3).

Table 1: Socio-demographic characteristics of Gedebano Preparatory and Secondary School

Variables	Category		Frequency	Relative frequency (%)
Sex	Male		233	59.44
	Female		159	40.56
Age	18-25 year		350	89.29
	>25 year		42	10.71
Religion	Orthodox		13	3.32
	Muslim		375	95.66
	Protestant		4	1.02
Grade	9th	Section A	50	12.75
		Section C	49	12.50
		Section D	49	12.50
		Section E	48	12.24
	10th	Section A	49	12.50
		Section B	50	12.75
		Section D	48	12.24
	12th	Section A	49	12.50
Ethnicity	Oromo		7	1.79
	Amhara		4	1.02
	Guragie		381	97.19

Table 2: Knowledge of study participants towards blood donation

Knowledge Questions	Responses	Frequency (%)	Knowledge towards Blood donation	
			Correct response	Incorrect response
			N (%)	N (%)
Minimum age to donate blood	>18 or <18 years	149(38.01)	243(61.99)	149(38.01)
	18 year	243(61.99)		
Maximum age to donate blood	<65 year	91(23.21)	151(38.52)	241(61.48)
	65 year	151(38.52)		
	>65 year	78(19.90)		
	Don't know	72(18.37)		
Minimum weight for blood donation	<45 Kg	40(10.20)	146(37.24)	246(62.76)
	45 Kg	146(37.24)		
	>45 Kg	142(36.22)		
	Don't know	64(16.32)		
Maximum volume of blood to be donated once	250 ml	102(26.02)	116(29.59)	276(70.41)
	350 ml	116(29.59)		
	450 ml	100(25.51)		
	Don't know	74(18.88)		
Minimum interval in which a person can donate blood	Every 3 month	136(34.69)	121(30.87)	271(69.13)
	Every 6 month	121(30.87)		
	Once in a year	70(17.86)		
	Don't know	65(16.58)		
Pregnant women can donate blood	Yes	124(31.63)	135(34.44)	257(65.56)
	No	135(34.44)		
	Don't know	133(33.16)		
Women can donate blood during menstruation	Yes	110(28.06)	194(49.49)	298(50.51)
	No	194(49.49)		
	Don't know	88(22.45)		
Cigarette smokers can donate blood	Yes	176(44.90)	118(30.10)	274(69.90)
	No	118(30.10)		
	Don't know	98(25)		
A Person can be infected by receiving contaminated blood	Yes	234(59.9)	234(59.9)	158(40.1)
	No	82(20.91)		
	Don't know	76(19.38)		
A person can donate blood when blood pressure is low	Yes	98(25)	201(51.28)	191(48.72)
	No	201(51.28)		
	Don't know	93(23.72)		
A person with high blood pressure can donate blood	Yes	133(33.93)	155(39.54)	237(60.46)
	No	155(39.54)		
	Don't know	104(26.53)		
HIV infected person can donate blood	Yes	0(0)	392(100)	0(0)
	No	392(100%)		
	don't know	0(0)		
The best source of donor blood	Voluntary	163(41.58)	163(41.58)	229(58.42)
	Replacement, remunerated	138(35.20)		
	Don't know	91(23.21)		
All surgical procedure requires blood transfusion	Yes	124(31.63)	182(46.43)	210(53.57)
	No	182(46.43)		
	No idea	86(21.94)		

Table 3: Practice towards blood donation, Feeling after donation and reasons for not-donating blood

Donors			Non-donors		
Questions	Response	N (%)		Response	N (%)
Ever donated blood before	Yes	20(5.10)		No	372(94.90)
Frequency of blood donation	Once	11(55.00)	**Reasons for not-donating blood**	Felt medically unfit	68(18.28)
	Two time	7(35.00)		Lack of adequate information	113(30.38)
	Three-time	2(10.00)		Fear of pain	107(28.76)
Reason for donation	Replacement	3(15.00)		No one has asked to donate	84(22.58)
	Voluntary	17(85.00)			
Feeling after Donation	Satisfaction	8(40.00)			
	Tired/fatigue	6(30.00)			
	Mixed feeling	6(30.00)			

Discussion

This study tried to assess the knowledge and practice towards blood donation among Gedebano Secondary School students in Mehal Amba.

In the current study, 182(46.43%) of students were knowledgeable about blood donation. This is lower than the result of a study conducted in central India (52.5%) [12]. Again, it is much lower than studies done in Nigeria (85%) [19], Addis Ababa (83.7%) [20], Thailand (80%) [21] and higher than studies done in Nepal (32.4%) [10] and South India (35.65%) [1]. The possible reason for variation might be due to the differences in access to learning opportunities about the importance of blood donation.

The study shows that minority of the participants (5.1%) had ever donated blood. This is lower than the results of studies done in Thailand (11%) [21], South India (10.75%) [1], Nigeria (15%) [19], central India (47.5%) [12].

This difference might be due to the promotional effect of the blood bank and other social institutions about the necessity of blood donation.

In this study, below half of them were the knowledgeable and small proportion of them had ever donated (practiced) (5.1%). This is lower than other studies conducted in Thailand where 80% of the study participants had good knowledge but only 11% of the study population had donated before [21].

The main reasons that study participants replied for not donating blood were fear of pain (28.76%), lack of adequate information (30.38%) and had not been asked to donate (22.58%).

Conclusion

From this study we may conclude that: the students have poor knowledge and practice towards blood donation.

The knowledge of students about blood donation was low as compared to the expected knowledge since they are close to education.

Recommendation

Based on the study finding the following recommendations are forwarded. The Government should design promotion and sanitization strategies to enhance knowledge, attitude and practice of students towards blood donation. Gedebano Secondary and Preparatory School administration and blood bank should prepare discussions, seminars, and other means of awareness creation strategies to improve knowledge, attitude and practice of students further in-depth.

References

1. Manikandan S, Srikumar R, Ruvanthika PN (2013) A Study on Knowledge, Attitude and Practice on Blood Donation among Health Professional Students in Chennai, Tamil Nadu, South India. Int J Sci Res Publications 3: 2-4.
2. WHO (2013) Blood safety and availability: Media center.
3. WHO (2013) WHO AFRO: Blood safety.
4. Massenet D, Tesfaye G, Dandera B (1998) Blood transfusion in Ethiopia. Med Trop (Mars) 58: 307-308.
5. Agrawal A, Tiwari AK, Ahuja A, Kalra R (2013) Knowledge, attitude and practices of people toward voluntary blood donation in uttarakhand. Asian J Transfus Sci 7: 59-62.
6. Tagny CT, Owusu-Ofori S, Mbanya D, Deneys V (2010) The blood donor in sub-Saharan Africa: a review. Transfus Med 20: 1-10.
7. Devi HS, Laishram J, Shantibala K, Elangbam V (2012) Knowledge, Attitude and Practice (KAP) of Blood Safety and Donation. Indian Med Gazette 1-5.
8. Dietrich W, Busley R, Kriner M (2006) Preoperative autologous blood donation in cardiac surgery: Reduction of allogeneic blood requirements. Anaesthesist 55: 753-759.
9. Al-Faris AK, Bahabri AS, Al-Aqeel AA, Al-Momi MS (2013) Attitude to Blood Donation among Male Student at King Saud University. J Appl Hem 4: 70-77.
10. Mrigendral A (2013) Study on Knowledge, Attitude and Practice of Blood Donation among Students of Different Colleges of Kathmandu, Nepal. Int J Pharm Biol Archives 4: 424-428.
11. WHO (2010) World blood donor day: new blood for the world. World Health Organization.
12. Giri PA, Phalke DB (2012) Knowledge and Attitude about Blood Donation Amongst Undergraduate Students of Gravari Institute of Medical Sciences Deemed University of Central India. Ann Trop Med Public Health 5: 569-573.
13. Yerpude PN, Jordan KS (2013) A cross-section study on KAP on blood donation Among medical students South India. Int J Med Health Sci 2: 382-385.

14. Al-Dress AM (2008) Attitude, belief and knowledge about blood donation and transfusion in saudi population. Pak J Med Sci 24: 74-79.

15. Osaro E, Charles AT (2011) The challenges of meeting the blood transfusion Requirements in Sub-Saharan Africa: the need for the development of alternatives toallogenic blood. J Blood Med 2: 7-21.

16. Tagny CT, Mbanya D, Tapko JB, Lefrère JJ (2008) Blood safety in Sub-Saharan Africa: a multi-factorial problem. Transfusion 48: 1256-1261.

17. Kubio C, Tierney G, Quaye T, Nabilisi JW, Ziemah C, et al. (2012) Blood transfusion practice in a rural hospital in Northern Ghana, Damongo, West Gonja District. Transfusion 52: 2161-2166.

18. Bates I, Manyasi G, Lara AM (2007) Reducing replacement donors in Sub-Saharan Africa: challenges and affordability. Transfus Med 17: 434-442.

19. Salaudeen AG, Odeh E (2011) Knowledge and behavior towards voluntary blood donation among students of a tertiary institution in Nigeria. Niger J Clin Pract 14: 303-307.

20. Misganaw C, Tenkir M, Deresea A, Megdelawit T, Tessema TT, et al. (2014) The level and associated factors of knowledge, attitude and practice of blood donation among health science students of Addis Ababa University. Int J Med Health Sci Res 1: 105-118.

21. Wiwanitkit V (2002) Knowledge about blood donation among a sample of Thai university students. Vox Sang 83: 97-99.