

Voluntary blood donation practice and its associated factors among civil servants in Bale Robe town, Southeast Ethiopia, 2021

SAGE Open Medicine
Volume 10: 1–10
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sagepub.com/journals-permissions
DOI: 10.1177/20503121221102099
journals.sagepub.com/home/smo



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Abstract

Objective: The objective of this study was to assess voluntary blood donation practice and associated factors among Bale Robe town civil servants in Oromia, Southeast Ethiopia, 2021.

Methods: An institution-based cross-sectional study was conducted among 601 civil servants selected by a stratified systematic random sampling technique. Data were collected using a structured self-administered questionnaire. The questionnaire was pre-tested on 5% of the total sample size before actual data collection. Data were coded and entered into EpiData version 3.1 and analyzed using SPSS version 25. Frequency distribution, descriptive statistics, and diagrams were used to summarize and present data. Binary logistic regression was performed to assess the association between independent variables and voluntary blood donation practice. An adjusted odds ratio (AOR) with its 95% confidence interval (CI) was calculated to identify factors associated with the outcome variables. And p -value < 0.05 was used to declare significance.

Result: Of the total of 630 selected civil servants, 601 give a complete response to the questionnaire yielding a response rate of 95%. The mean age of participants was 34.19 years, and 328 (54.6%) of them were rural residents before they joined the governmental work. The lifetime voluntary blood donation practice among civil servants was 27%; 95% confidence interval=(23%–31%). The major reason for not donating blood was fear related to blood donation 186 (42.4%). From multivariable logistic regression, four variables were found as significant independent variables associated with voluntary blood donation practice. Accordingly, having a family member or relative who previously donate blood (adjusted odds ratio=2.48; 95% confidence interval=(1.39, 4.39)), previous participation in a blood donation campaign (adjusted odds ratio=5.84; 95% confidence interval=(3.39, 1.04)), and willingness to donate blood (adjusted odds ratio=5.04; 95% confidence interval=(2.21, 11.48)) were variables significantly and positively associated with voluntary blood donation practice, respectively. Civil servants who had no opportunity to donate blood previously were less likely to give voluntary blood donation (adjusted odds ratio=0.15 (95% confidence interval=0.063, 0.367)).

Conclusion: The study identified a low level of voluntary blood donation. Having family members/relatives who donate blood, previous participation in a blood donation campaign, and willingness to donate blood were significantly associated with voluntary blood donation. Therefore, there should be regularly scheduled campaigns encouraging civil servants' voluntary blood donation.

Keywords

Blood donation, voluntary, practice, civil servant, Bale Robe town

Date received: 22 December 2021; accepted: 29 April 2022

Introduction

The adequate supply of safe blood is a major public health challenge in developing countries where blood shortages are common and have severe consequences.¹ Blood donation shortages are due to an inefficient blood supply system based on donations by relatives and friends of individuals needing

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transfusions, or to replace blood used in emergencies. This may solve the problem for a short period in small communities, but this is inefficient for chronic needs for blood. World Health Organization (WHO)² advocates an annual donation of blood by 1% of the healthy population to maintain a continuous supply of blood. One of the four components of the WHO internal strategy is to promote global safety and minimize the risk associated with blood transfusion. The first step toward blood safety is to encourage blood donations from voluntary non-remunerated regular donors.³

Demand for blood transfusion is alarmingly rising because of the utilization of newly expanded invasive procedures, an increase in accidents, and chronic non-communicable diseases which need a transfusion. But currently, the demand is high than the supply.⁴ Blood transfusion helps in improving health and saving the life of a patient. But many patients requiring transfusion do not have timely access to blood.⁵ A voluntary donation of blood is considered as the backbone of blood safety and safe transfusion practices. There is a critical need to improve the recruitment and retention of voluntary blood donor populations to ensure a sustainable blood transfusion practice.⁶ A 2017 systematic review on the motivations and hindrance to blood donation in 16 Sub-Saharan African (SSA) countries found fear as a major deterrent factor, including fear of needles, adverse effects, and discouraging spiritual, religious, and cultural perceptions of blood donation.⁷ The blood donation rate in developing countries is 4.6 per 1000 people as compared to 33.1 donations per 1000 people in developed countries.⁸ After cases of COVID-19 were reported in Saudi Arabia, donor numbers and blood supply at blood bank-based collections dropped by 39.5%.⁹ WHO African Region¹⁰ reported an average annual blood donation rate of 4.3 units per 1000 population with a range from 0.2/1000 in Nigeria to 33.8/1000 in Mauritius.

Only five countries (Algeria, Botswana, Congo, Mauritius, and South Africa) were able to collect at least 10 units/1000 populations.¹¹ This was why, in many developing countries, there is a wide gap between blood needs and supplies.¹

The main reasons for not donating blood among donors in SSA countries were due to factors such as a lack of well-established structures for the provision of blood donation services; poor infrastructure, low blood donor recruitment, and retention; widespread populations; many of whom live in rural areas with poor access to blood centers, poor communication networks, and misperceptions about blood and blood donation due to lack of knowledge and cultural influences.⁷

The majority of blood transfusions were allocated to female patients (55.8%) and children under 5 years of age (33.2%).¹² Obstetric hemorrhage is a leading cause of maternal death in Sub-Saharan Africa, and the shortage of blood for transfusion is a contributory factor.⁶

In Ethiopia, 87,000 units of blood are donated for transfusion, but the country requires 200,000 units of blood every

year. Ethiopia is one of the developing countries that had a chronic shortage of blood. It had high maternal mortality 412/per 100,000, and of this, 30% were due to hemorrhage that resulted from non-availability of blood for transfusion totally or delays that can be prevented if the mother gets access to blood transfusion services.¹³ In Ethiopia, of the total yearly collected blood, more than 60% were from schools and communities. Lack of voluntary donors, limited access to blood donation centers within the community, and low participation of blood donors are some of the challenges for blood donation in the country.¹⁴ In Ethiopia, the National Blood Bank Service continues to be confronted with challenges in its efforts to ensure the availability of blood for healthcare facilities.¹⁵ Blood donation was predominantly dominated by students that accounted for around 60% as indicated from a study done in Bahir Dar¹⁴ and 80% in Bale; report from GBB (Goba Blood Bank report, 2020). Global Blood Bank reported low participation of civil servants participation in blood donation. Therefore, this study assessed voluntary blood donation among civil servants and associated factors.

Methods

Study design and setting

A cross-sectional study design was conducted among civil servants in Bale Robe town, Oromia regional state, Southeast Ethiopia, from May 2020 to 30 March 2021. Robe town was located 430 km to the Southeast of the national capital city, Addis Ababa. There are about 2130 civil servants or government employees in Robe town.

Eligibility criteria

All civil servants working in Bale Robe town government sectors offices regardless of the duration of employment were included in the study. Those civil servants who were absent from work and who took different leave (annual, sick, and maternity leave) during the data collection period were excluded from the study.

Sample size determination and sampling procedure

The sample size for the study was determined using a single population proportion formula for sample size calculation by taking a proportion of practice of voluntary blood donation from a previous study 43.6%¹⁶ by considering the following assumptions: 95% confidence level (CI), the margin of error of 5%, expected non-response rate of 10%, and the design effect of (1.5). This gives the final sample size of 630.

Study participants were selected using stratified systematic random sampling techniques. Initially, sectors were categorized into health and non-health sectors. Then, from the

total of 36 sector offices in Robe town, 1 health sector and 11 non-health sectors were selected randomly using their name as the sampling frame. The total sample size of the study was allocated proportionally for selected sectors. Finally, systematic random sampling was used to identify each respondent using their list of attendance sheets as a sampling frame from each office's human resource directorate. The total number of civil servants that were obtained from numbering was divided by the desired sample size to get the interval value k (which is 2). The first civil servant was selected by lottery method from k units, and every second civil servant was included in the sample from each selected sector office until the desired sample size was obtained.

Operational definitions

Ever donated. Study participants who gave at least one voluntary blood donation before the study period. In this study, the practice of blood donation is measured by the history of every blood donation (ever donated in the past).

Regular donor. Is someone who makes at least two donations of blood within the last 24 months. But the last donation must be within the last 12 months.¹⁷

Knowledge. Knowledge was assessed by four questions. Each response was scored as zero (if incorrect) and one (if correct). Based on the total score computed from individual questions, knowledge about voluntary blood donation was categorized using the mean as the cut-off point. Respondents were categorized as having poor knowledge if they score less than the mean and good knowledge if they score equally with mean and above.¹⁸

Attitude. The attitude was assessed by asking eight questions. After computing, the attitude scores from individual questions' mean values were used as the cut point. Respondents who scored less than the mean were categorized as having an unfavorable attitude toward voluntary blood donation while those who above were labeled as having a favorable attitude toward voluntary blood donation.¹⁷

Voluntary blood donation practice. This refers to when a person agrees by his willingness to have blood drawn from his body and used for transfusions. It was measured by asking six questions. A mean score was used to classify the practice of respondents. Accordingly, those scores equal to and above the mean were categorized as having a good practice, and those scores less than the mean were labeled as having poor practice toward voluntary blood donation.

Data collection instruments and procedure

A pre-tested and structured questionnaire was used to collect the data from each study subject. The questionnaires were

prepared in English and then translated to Afaan Oromoo then translated back to English again to check for their consistency by language experts. The questionnaire has seven parts which comprise socio-demographic characteristics, contextual factors (family history of blood donation and transfusion), knowledge about blood donation, attitude about blood donation, the practice of voluntary blood donation, medically related factors, and blood donation service access-related factors. Data collection was conducted through a self-administered questionnaire by three BSc nurses who were trained by investigators along with one public health professional (supervisor) before data collection. The role of data collectors was to distribute questionnaires to selected respondents, give information on the unclear questionnaire, and collect filled questionnaires. The assigned supervisor assists data collectors in day-to-day data collection procedures. Finally, completed questionnaires were collected by the supervisor and investigators and checked for their consistency and completeness.

Data quality management

One day of training about the objective of the research, components of the questionnaire, and the ethical issue were given to data collectors and supervisors. A pre-test of the questionnaire was performed on 5% (32) of the sample size among civil servants selected from Goba administrative town sector offices. The questionnaire was checked thoroughly for its completeness before it was distributed to data collectors. The participants were informed about the objective of the study before giving their responses. Respondents were also ensured that their responses were kept confidential so that they can give genuine answers. Investigators and supervisors make close follow-ups and frequent checks on the data collection process to ensure the completeness and consistency of the gathered information.

Statistical analysis

Data were checked for completeness, coded and entered to EpiData version 3.1, and exported to SPSS version 25 for analysis. Frequency distribution for categorical data and numerical summary measures for continuous variables were used to summarize data. Binary logistic regression was used to assess the association between the dependent (voluntary blood donation) and independent variables. Those variables with a p -value less than 0.25 in bivariate logistic regression were selected as a candidate for multivariable logistic regression. The model goodness of fit was tested using the Hosmer–Lemeshow goodness-of-fit test. From multivariable logistic regression, adjusted odds ratios (AORs) with a 95% confidence interval (CI) were computed and those with p -value < 0.05 were reported as significant factors associated with voluntary blood donation practice.

Table 1. Socio-demographic characteristics of participants in Bale Robe town, Southeast Ethiopia.

Characteristics	Value	Frequency	Percentage
Age categories in years	18–25	56	9.4
	26–35	314	52.2
	36–45	172	28.6
	>45	59	9.8
Sex	Male	423	70.4
	Female	178	29.6
Working position	Supportive staff	61	10.1
	Expertise/focal person	453	75.4
	Manager/process owner	87	14.5
Educational status	Secondary school (9–12)	19	3.2
	Certificate	10	1.7
	Advance diploma/level	144	24.0
	First degree and above	428	71.2
Marital status	Single	116	19.3
	Married	427	71.0
	Separate	32	5.3
	Widowed	10	1.7
	Divorced	16	2.7
Religion	Orthodox Christian	303	50.4
	Muslim	206	34.3
	Protestant	71	11.8
	Catholic	9	1.5
	Others (Wakefata, Joba)	12	2.0
Ethnicity	Oromo	553	92.0
	Amhara	41	6.8
	Tigre	2	0.3
	Wolayita	1	0.2
	Others (Somalia, Gurage)	4	0.7
	Urban	273	45.4
Previous residence	Rural	328	54.6
	Urban	273	45.4
Current monthly income (Ethiopian birr)	<3000	48	8
	3001–6999	342	57
	>7000	211	35

Ethical consideration

Ethical clearance and a letter of permission were obtained from Madda Walabu University Goba Referral Hospital. These letters were submitted to Robe town and Bale Zone health offices. Letters of cooperation were also written by the Robe town health office to selected sector offices. General measures for COVID-19 prevention were implemented throughout the data collection period. The purpose and rationale of the study were briefly explained to all study participants. Data collection was performed by insuring all basic ethical principles. Each respondent was given full right to decide on their participation in the study. Written informed consent was taken from each participant before conducting the interview. In all courses of the study period, the information of the participants was kept confidential.

Result

Socio-demographic characteristics

A total of 601 respondents gave their complete responses which made a response rate of 95%. The normality of continuous

variables was checked using the Kolmogorov–Smirnov test, and it was >0.05 . The mean age of respondents was 34.19 with a standard deviation of ± 7.466 . Four hundred twenty-three (70.4%) participants were males. Regarding educational status around three quarters, 428 (71.2%) have a first degree and above. The majority 427 (71%) of the civil servants were married. Most of the civil servants 328 (54.6%) were rural residents before they joined the governmental work (see Table 1).

Source of information about blood donation

The common sources of information about blood donation were from health professionals (61.7%) followed by electronic media (54.2%) (see Figure 1).

Reasons for blood donation among study participants

The study has shown as the most common motivating factor for voluntary blood donation practice among those who donated blood in past was moral satisfaction 99 (61.1%) (see Figure 2).

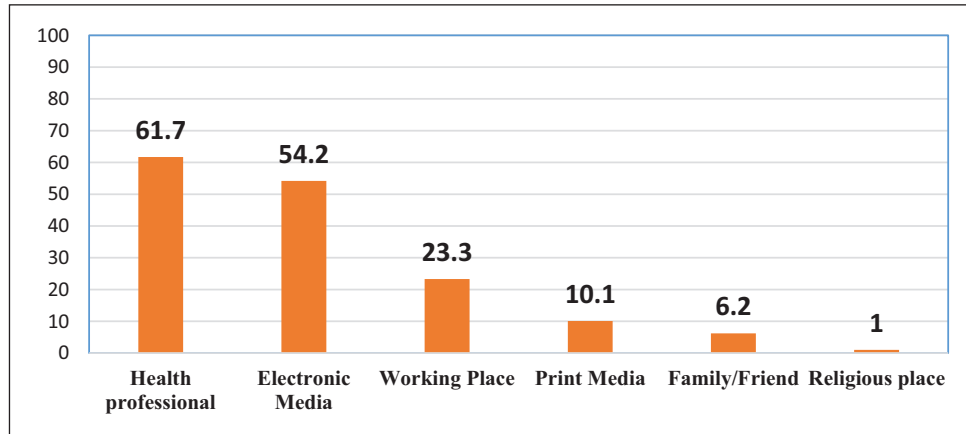


Figure 1. Percentage distribution of sources of information about blood donation among Bale Robe town civil servants, Southeast Ethiopia (n=601).

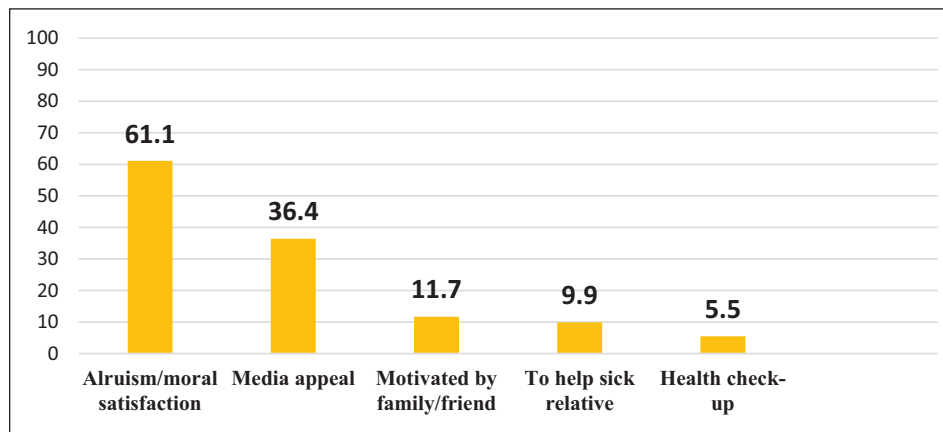


Figure 2. Reasons for blood donation among Robe town civil servants, Southeast Ethiopia.

Reasons for not donating blood among study participants

Among the non-blood donors, the major reasons for not donating blood were fear related to blood donation 186 (42.4%), never had the opportunity to donate blood 95 (21.6%), never thought of about blood donation 82 (18.7%), and perceive medically unfit 77 (17.5%) (see Figure 3).

Knowledge, attitude, and practice of voluntary blood donation among participants

Knowledge and attitude on voluntary blood donation. Of the total respondents, 263 (43.8%) participants have good knowledge about blood donation, and more than half of 354 (58.9%) have a favorable attitude toward blood donation. In this study, the majority 344 (78.35%) of participants had the willingness to donate blood.

The main source of information about blood donation among all respondents was mass media/broadcasting (572 (95.2%)). But out of those who donated blood 162 (27%),

the main source of information about blood donation was health facility/professional 371 (61.7%). The majority of participants know blood bank location 512 (85.2%) and only 181 (30%) of the participant ever participated in a blood bank organizing campaign and 82 (13.5%) believed that the service hour of blood bank is convenient.

Voluntary blood donation practice. The proportion of respondents who voluntarily donated blood in this study population was 162 (27%) with 95% CI=(23%–31%). Among these, 78 (48%) donated only one time and 84 (52%) twice or more times. Among the total respondents, 114 (19%) had stated that one or more of their family/relative members had ever received a blood transfusion for clinical management at the health facility. Reasons for respondent’s family member/relative blood transfusion were maternal causes 75 (65.7%), surgery 35 (30.7%), medical causes 16 (14%), accidental case 12 (10.5%), and cancer/hematological case 6 (5.2%). Concerning family/peer blood donors, 320 (53.2%) had family/relative or friend who had donated blood (see Table 2).

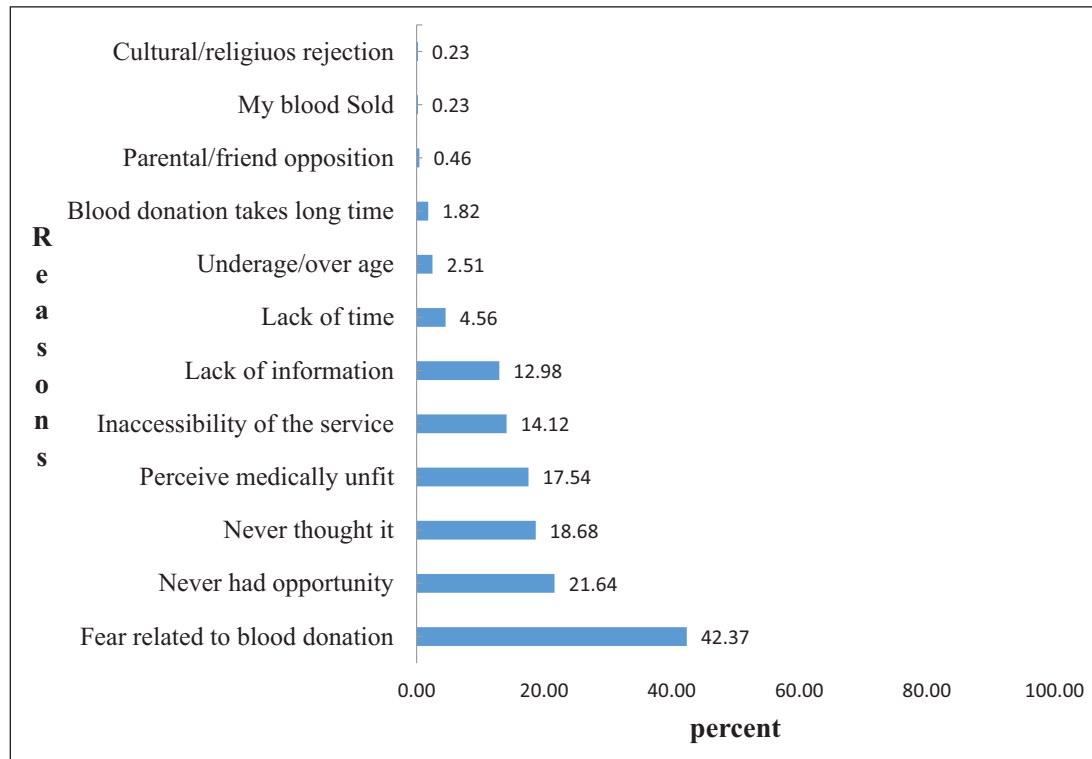


Figure 3. Reasons for not donating blood among Robe town civil servants, Southeast Ethiopia.

Table 2. Blood donation knowledge, attitude, and voluntary blood donation practice among participants of the civil servant in Robe town, Southeast Ethiopia.

Characteristics	Value	Frequency (no)
Knowledge status (on blood donation)	Good knowledge (\geq mean)	263
	Poor knowledgeable ($<$ mean)	338
	Mean \pm SD	2.27 (\pm 0.9955 SD)
Attitude (on blood donation)	Favorable (\geq mean)	354
	Not favorable ($<$ mean)	247
	Mean \pm SD	4.85 (\pm 0.982 SD)
Practice (on blood donation)	Good practice (\geq mean)	162
	Poor practice ($<$ mean)	439
	Mean \pm SD	1.73 (\pm 0.444 SD)
Recent blood donation	Within 12 months	106
	12–24 months	33
	Before 24 months	23
	Mean \pm SD	1.49 (\pm 0.733 SD)
Number of previous blood donations ($n = 162$)	Once	78
	Twice and above	84

SD: standard deviation.

Factors associated with voluntary blood donation practice. In bivariate logistic regression analysis, 11 variables were identified as a candidate for multivariable logistic regression. These were as follows: being male civil servant, source of information about blood donation, participants who know their blood group type, history of family member blood

transfusion, participating in blood donation campaign, willingness toward voluntary blood donation practice, having a family member or relative who ever donate blood, reasons for not donating blood, never get an opportunity to donate blood, service hour of blood bank fit with their schedule, and knowledge of blood donation.

Table 3. Multivariable logistic regressions of factors associated with blood donation practice among civil servants of Bale Robe town, Southeast Ethiopia.

Factors		Blood donation practice		COR (95% CI)	AOR (95% CI)
		Yes (%)	No (%)		
Sex	Male	126 (21%)	297 (49.4%)	1.67 (1.098, 2.549)	1.43 (0.790, 2.583)
	Female	36 (6%)	142 (23.6%)	1	1
Have a family member/relative who previously donated blood	Yes	118 (19.7%)	202 (33.6%)	3.14 (2.122, 4.665)	2.48 (1.398, 4.391)*
	No	44 (7.3%)	237 (39.4%)	1	1
Participate in the blood donation campaign	Yes	111 (18.5%)	70 (11.6%)	12.5 (7.9, 18.2)	5.84 (3.399, 10.049)**
	No	51 (8.5%)	369 (61.4%)	1	1
Family member's blood transfusion history	Yes	84 (14%)	82 (13.6%)	4.69 (3.172, 6.929)	1.03 (0.529, 1.996)
	No	78 (13%)	357 (59.4%)	1	1
Heard about blood donation from a health facility/health professional	Yes	117 (19.5%)	254 (42.3%)	1.89 (1.279, 2.804)	1.27 (0.722, 2.245)
	No	45 (7.5%)	185 (30.7%)	1	1
Know their blood group type	Yes	84 (20%)	176 (29.3%)	1.61 (1.120, 2.312)	1.76 (1.002, 3.106)*
	No	78 (13%)	263 (43.7%)	1	1
Never had the opportunity to blood donation	Yes	7 (1.2%)	75 (12.5%)	0.18 (0.082, 0.398)	0.15 (0.063, 0.367)**
	No	155 (15.8%)	364 (60.5%)	1	1
Know the location of the blood bank	Yes	151 (25.1%)	361 (60.1%)	2.96 (1.534, 5.734)	1.73 (0.702, 4.259)
	No	11 (1.8%)	78 (13%)	1	1
Service hours fit with your schedule	Yes	35 (5.8%)	60 (10%)	1.74 (1.096, 2.765)	0.93 (0.437, 1.980)
	No	127 (21.1%)	379 (63.1%)	1	1
Willingness to donate blood	Yes	149 (24.8%)	344 (57.2%)	3.17 (1.719, 5.829)	5.04 (2.213, 11.482)*
	No	13 (2.2%)	95 (15.8%)	1	1
Knowledge about blood donation	Good knowledge	93 (15.5%)	245 (40.8%)	1	1
	Poor knowledge	69 (11.5%)	194 (32.2%)	0.94 (0.35, 0.98)	1.01 (0.567, 1.800)

AOR: adjusted odds ratio; CI: confidence interval; 1: reference category.
Significant at * $p < 0.05$; ** $p < 0.001$.

From multivariable logistic regression, five variables were identified as significantly associated with voluntary blood donation practice among civil servants. These were as follows: having a family member or relative who previously donate blood, participating in a blood donation campaign, knowing their blood group type, never having the opportunity to donate blood, and willingness toward blood donation practice. Accordingly, having a family member or relative who previously donate blood (AOR=2.48; 95% CI=(1.39, 4.39)), previous participation in a blood donation campaign (AOR=5.84; 95% CI=(3.39, 10.04)), willingness to donate blood (AOR=5.04; 95% CI=(2.21, 11.48)), and knowing own blood group type (AOR=1.76; 95% CI=(1.002, 3.106)) were variables significantly and positively associated with voluntary blood donation practice, respectively. Civil servants who had no opportunity to donate blood previously were 85% less likely to practice voluntary blood donation (AOR=0.15 (95% CI=0.063, 0.367)) (see Table 3).

Discussion

This study has identified important findings about voluntary blood donation among civil servants and associated factors. It showed that lifetime blood donation practice among civil servants was 27% with a 95% CI of (23%–31%). The finding

of this study was similar to the results study done in Aman sub-city, Southwest Ethiopia in which 26.4%,¹⁹ Pakistan nation-wide survey 29%, and the cross-sectional study conducted in Tanzania university students 30%²⁰ of participants ever donated blood. The similarities between these studies might be due to common low awareness creation regarding blood donation in developing countries. In contrast with the above similarities, finding from this study was higher than the findings from other studies conducted in different cities of Ethiopia; Goba University students in which 18.4%,²¹ Adama 17%,²² Hawasa 14.7%,²³ Birbir 10.6%²⁴ and Harar 22.6%,²⁵ and a cross-sectional study conducted among college students in Nepal and Ebony Nigeria 18.1% and 13.3% have ever donated blood, respectively, 11,26 of participants ever of population ever donated blood. But the finding of this study was lower than other studies conducted in Chiro town, Eastern Ethiopia, among civil servants 43.6%,¹⁶ medical students in Lahore district 66.9%, and a descriptive study on community members aged 15–50 in Kampala, Uganda, was 33.3%^{27,28}, respectively. Possible reasons for this discrepancy may be due to variation in socio-demographic characteristics of study participants, the use of different study populations, the difference in access to blood banks among different locations, the difference in availability of periodic blood donation campaigns, the difference in access to

information regarding blood donation, and it may be also the effect of the COVID-19 pandemic. And the variation may be due to the setup of study settings since some of the studies were conducted among health professionals and some others were on the general population.

Participation in a blood donation campaign was significantly associated with voluntary blood donation among civil servants. Those civil servants who had participated in blood donation campaigns were 5.84 times more likely to donate blood as compared to those who had not participated in blood donation campaign (AOR=5.84; 95% CI=(3.39, 10.05)).

This result was similar with the findings from the studies conducted in Addis Ababa¹⁷ and Nepal²⁶ in which respondents who get the opportunity to participate in blood donation campaigns participated in voluntary blood donation more than their counterparts. This indicates as misconceptions about blood donation and lack of opportunity to participate in blood donation campaigns were common reasons that hinder voluntary blood donation practice in the population.

Having willingness toward voluntary blood donation was positively associated with blood donation practice in this study (AOR=5.04; 95% CI=(2.21, 11.48)). Civil servants who had willingness toward voluntary blood donation were 5.04 times more likely to donate blood as compared to those who have no willingness to donate blood (AOR=5.04; 95% CI=(2.21, 11.48)). This result was in line with the finding from the study conducted in Chiro town of Eastern Ethiopia among civil servants which identify the willingness a significant factor positively associated with voluntary blood donation practice (AOR=1.90; 95% CI=(1.01, 3.55)).¹⁶ And it also agrees with the finding from the study conducted among Madda Walabu University students, in Southeast Ethiopia, in which participants who have the willingness to donate blood more likely to donate blood compared to respondents who had no willingness (AOR=5.88; 95% CI=(1.36, 25.43)).²¹ This implies as willingness to donate blood was an important factor that greatly affect practice toward voluntarily blood donation.

This study identified as 43.8% (95% CI=(40%–48%)) of participants those ever donated blood have good knowledge about voluntary blood donation. This finding was consistent with the result from a study conducted in Ambo town where 40.4% of respondents have good knowledge about voluntary blood donation.⁵ This result was also supported by the results of the study conducted in Tamilnadu, India, Adama town, and Harar town in which 45%,²⁷ 47%,²² and 43.6%²⁵ of participants have good knowledge about voluntary blood donation. However, this result was lower than the study conducted in Aman sub-city, Southwest Ethiopia¹⁹ and Riyadh city, Saudi Arabia²⁹ where 76% and 78% of respondents had good knowledge about blood donation, respectively. The possible explanation for the discrepancy might be due to the difference in the study setting, study population and COVID-19 may also play a role.

This study also identified as 58.9% (95% CI=(55%–63%)) of respondents have a favorable attitude toward voluntary

blood donation. This finding was lower than the results from a study conducted in Riyadh, Saudi Arabia.²⁹ It was also lower than the finding from studies conducted in Hawasa University, Gondar, and Addis Ababa University in which 83.4%, 79.2%, and 81.7%,^{23,30,31} of the respondents had a positive attitude toward blood donation, respectively. These disagreements could be due to the differences in the population studied. It might be also due to the effect of the COVID-19 pandemic.

This study shows as 95.2% of donor participants ever listen to/hear about blood donation advocacy. This was similar to a study conducted among Asossa University students where 95.2% of them had ever heard/listen to voluntary blood donation advocacy. The similarities might be because government employees and universities students have good access to media exposure.

Of 162 (27%) respondents who donated blood, nearly half, 78 (48%), and more than half, 84 (52%) of them were donated their blood one time and more than two times in their lifetime, respectively. About 51 (31.4%) of donors had donated blood regularly. The proportion of participants whose ever donated blood once in their life was higher than the finding from the study conducted in Birbir town among the general population where only 6.4% of participants ever donated blood once in their life.²⁴ The discrepancy in these findings might be because civil servants had more chance to participate in blood donation campaigns and have access to information more than the general population. In contrast, it was lower than the result from the study done on medical students in Solan, North India, in which 67.7%³² of them ever donated blood. This difference might be due to the difference in the study population because the study from India addresses medical students who might be more near to the blood bank, and might had better knowledge about voluntary blood donation than other population groups.

Participants who never had the opportunity voluntary donate blood were 85% less likely to practice voluntary blood donation practice (AOR=0.15; 95% CI=(0.06, 0.36)) when compared to those who had opportunity to donate blood. This result was similar to the finding from the study conducted in Kenya that reported a lack of opportunity to donate blood as factors significantly hinder voluntary blood donation practice.²⁸ This study also identified as respondents who had history of family/relative who ever received blood transfusion was 2.48 (AOR=2.48; 95% CI=(1.39, 4.39)) more likely to voluntary donate blood than their counterparts. This finding was similar with the result from the study conducted in Ambo University which showed as students who have family/friends who ever received blood from the blood bank were 2.24 (AOR=2.24; 95% CI=(1.31–3.81)) more likely to practice voluntary blood donation than their counterparts.⁵ This might be because family/relatives of patients who received blood transfusion might get health education about blood donation by health professionals in a health facility. And the blood bank may also provide health

information to clear any misconception regarding blood donation and might motivate them to increase their participation in voluntary blood donation.

Limitation

Even if this study identified important findings, it has some limitations. It uses self-report to assess the practice of voluntary blood donation which may not reflect the actual practice. This study was institutions based, it may not give a clear picture of the community status of blood donation. The respondents may also provide a socially desirable response. The behaviors of the cross-sectional study design cause and effect relationship were not assured.

Conclusion

The study finding showed that voluntary blood donation practice was low. The proportion of civil servants who had ever donated blood was also low compared to other countries; particularly the level of regular blood donors was very low. Participating in a blood donation campaign prepared by the blood bank and willingness to donate were associated with voluntary blood donation practice. In addition, family members or relatives who donate blood and never had the opportunity of blood donation were also associated with blood donation. Therefore, there is a need to work a lot to increase voluntary blood donation. There is a need to stress the fact that blood donation is essentially risk-free in healthy individuals.

Acknowledgements

The authors are thankful to all data collectors for their commitment and all participants for providing the requested information. The authors also thank the Robe town administration office for giving us information and for their all support throughout the study. The authors also thank Madda Walabu University for all their support.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval

Ethical approval for this study was obtained from “Madda Walabu University Research and Publication Directorate” with approval no. Ref No-01/2/4844.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Informed consent

Written informed consent was obtained from each study participants after explanation of study objectives. Their right not to participate was also explained. In all courses of the study period, the information of the participants was kept confidential.

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Availability of data

All necessary data were included in the document. The author confirms availability of raw data set in SPSS or STATA can be obtained by email request at ahmedhariro@gmail.com

Supplemental material

Supplemental material for this article is available online.

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