

Knowledge, Attitude and Practice Changes of General Population towards to the Blood Donation IEC/BCC Intervention

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Abstract

Introduction: Blood donors are committed to social responsibility, saving lives and improving the health of others. The necessity for blood and blood products in Mongolia is getting higher and higher every year which probably is associated with high-mortality-rate diseases.

Materials and Method: This is a cross section survey identified knowledge, attitude and practice of the population on voluntary non-remunerated blood donation by using pre-developed same questionnaire before and after IEC/BCC intervention among general population on blood donation. Data collection was conducted in 5 provinces, 1 soum, 6 districts of Ulaanbaatar City of Mongolia. Population of age of 18-60 years was randomly selected by the survey by using random sampling method. SPSS software version 21 was used for data analysis of the survey.

Result: The survey covered in a total of 7633 (baseline, 2015-3852, follow up, 2019-3782) people and the respondent coverage rate was 100%.the majority of them were had higher education (40.8%, 3115), and completed secondary education (secondary and high) (28.9% 2204), khalkh (84.8%, 6472), married (63.1%, 4818), and single (28.7%, 2194).It has been defined that highly educated and female respondents were more knowledgeable than the rest of the group. There were not observed significantly differ on religion, and living location of the person. Knowledge is increased by growing the age of survey respondents. 6.3% of surveyed respondents are regardless of age group and gender had a misconception. Compared with the baseline survey, correct answer percentage level increased by 4.6-64.8% each age group and an average it was 21.8%. In young ages, the population was more likely to donate blood. Based on both survey finding, 82.2% of respondents who gave blood is doing it because they are like to help others and to save people's lives ($\chi^2=16.37$, $p<0.0001$).

In Conclusion: Maintaining public awareness and sustaining regular blood donor is an integral part of establishing a blood donor program. In this regard based on our survey finding evidence-based IEC/BCC campaign has effectively improve awareness general population on sustainable blood programing.

Keywords: Awareness improvement, KAP of blood donors, IEC/BCC intervention, voluntary blood donors

Background

Blood transfusion is a key component in modern health care in saving the lives of many people in routine and emergency situations like in gynecological conditions, pregnancy and childbirth, severe childhood illness, trauma and cancers, or medical hematological conditions [1]. The WHO recommends that, for any country to meet the minimum demand for blood, collection should be at least from 1% of the population [2]. On average, high income countries have 9 times higher donation rate compared to low-income countries [3]. According to the Melbourne Declaration, voluntary non-remunerated blood donation (VNRBD) has been universally declared to be the cornerstone of safe blood [4]. According to the theory of planned behavior, human action is guided by three kinds of considerations. The first is behavioral beliefs which is beliefs about the likely outcomes of the behavior and the evaluations of these outcomes. The second is normative beliefs; it is beliefs about the normative expectations of others and motivation to comply with these expectations. The last is control beliefs which is beliefs about the presence of factors that may facilitate or impede performance of the behavior and perceived power of these factors [5]. Across different researches theory of planned behavior has a potential to predict blood donation, and the predictors of theory planned behavior explained between 51% and 80.7% of variances to donate blood [6].

In Mongolia, the legal environment on blood donation has been well established and the national blood bank is consisted with solely of blood donated by donors. The necessity for blood and blood products in Mongolia is getting higher and higher every year which probably is associated with high-mortality-rate diseases. It has been estimated that about 100 blood donors donate blood would convince the necessity of blood in Mongolia [7] Increasing the proportion of voluntary non-remunerated regular blood donors among all donors are vital to ensure the quality and safety of blood, blood products and to sustain continuous supply. The percentage of donors increased from 37.2% to 55% in 2017. However, until now desired blood products are limited and the number of permanent blood donors is not sufficient in the current demand for blood products [8].

The Ministry of Health through the Health Sector Development Project-5 was conducted the one-year public awareness campaign for increasing the awareness of the population and to improve attitudes and practices towards to the blood donation and rising number of blood donors. Therefore, we aimed to assess the campaign of IEC/BCC on blood donors among the general population and compare baseline survey findings on the population's knowledge, attitudes and practices of blood donation after the campaign. Pre and post intervention were done and here we are presenting result of this evaluation.

Materials and Method

This is a cross-section survey. Ministry of Health of Mongolia has conducted public IEC/BCC campaign from 2016-2018 for increasing the awareness, attitudes and practices towards to the blood donation and growing number of regular blood donors. It has developed modern 45 types

of IEC materials such as slogan word, photos, video ads, animation, info graphs, printed leaflets, and brochures and broadly delivered throughout the country level. All developed and pre-tested materials were distributed to the 21 province's health departments and widely broadcasted on local mass media channels and social media. Also, materials were placed at the waiting room's wall of hospitals and used at the local training. The survey identified knowledge, attitude and practice of the population on voluntary non-remunerated blood donation by using pre-developed same questionnaire before and after IEC/BCC intervention among general population on blood donation. The baseline survey results of 2015 and follow up survey was conducted in 2019 at the same area.

Survey scope

The minimum need of the country is met when one or more percent of adult population of Mongolia becomes regular non-remunerated blood donor. Therefore, the scope of the survey covered knowledge, attitude and practice of a representative sample of the Mongolian population aged between 18-60 on non-remunerated blood donation and factors influencing them.

Survey population, size of the sample and selection

The survey covered a population aged 18-60 years in 5 provinces and 6 districts of UB city. Population of age of 18-60 years was randomly selected by the survey. Provinces which were selected for the survey as following criteria: 1) Regional Diagnostics and Treatment Center (RDTC), 2) with relatively large resident population number and 3) representativeness of Mongolia's regions, 4) Because the Kazakh population represents 3.9% of the total population, Bayan-Ulgii province was selected in the targeted sampling in order to identify whether cultural and religious reasons have an impact on blood donation.

When determining the sample size the level of knowledge, attitude and practice among the population on blood donation is considered as 50.0% with a probability of 95% ($Z=1.96$), standard deviation ($p=0.05$), complex sample impact coefficient (1.5), gender balance in all age groups (3 age groups for each gender, in total 6). Based on these principles the survey covered in total around 3438 people. The number of people who might refuse to participate was considered 10 % and this was added to the total number of people making a total of 3782 in each survey (Formula 1).

The formula used for estimating the size of the sample:

$$n = Z^2 \frac{P(1-P)}{e^2}$$
$$n = 1.96^2 \frac{0.46(1-0.46)}{0.0025} = 3.8416 \frac{0.2484}{0.0025} = 381.70$$

$n \times \text{complex sample coefficient} \times \text{age} - \text{gender} = 382 \times 1.5 \times 6 = 3438$

In order to ensure that the population of Mongolia is represented the survey sample was selected by multiple phase selection method. In order to ensure proper ratio between the urban and rural

population the survey sampling was done separately in each city. The sample size estimation was applied in both surveys.

Data collection

Data collection was conducted in 5 provinces, 1 soum, 6 districts of Ulaanbaatar City. Special attention was paid to improve the team management and organization when it visits households and collects data in order to save time, to minimize any errors in the collected data and to maximize the quality. Measures were taken for this end such as: the team leader worked together with an assistant researcher with adequate knowledge of the local area to map the locations of the selected households. The relevant officers were contacted in advance and appointments were kept in order to organize data collection without delays.

Data processing

SPSS software version 21 was used for data analysis of the survey. Results were expressed by percentage of knowledge, attitude and average indicators among the population. Confidence interval of 95% (95%CI) was used to identify differences in results' accuracy indicators (distribution percentage) and groups (age, gender, location). The sampling error that could influence the survey results' accuracy based on the sample population was measured by measurable variables and standard deviation of results. Qualitative data was processed using the classification methodology. After it, set off codes were developed according to evaluation guidelines and all interviews were coded. Analysis was done using explanation approach based on common and specific factors of coding to incorporate into report.

Ethics approval and consent to participate

The survey methodology was reviewed and get approval from the Medical Ethics Committee at the Ministry of Health and Sports of Mongolia, # №3-2015/10/30. Every respondent was given the consent form and agreed to participate to the survey.

Result

Demographic parameters of respondents: The survey covered in a total of 7633 (baseline, 2015-3852, follow up, 2019-3782) people and the respondent coverage rate was 100%.the majority of them were had higher education (40.8%, 3115), and completed secondary education (secondary and high) (28.9% 2204), khalkh (84.8%, 6472), married (63.1%, 4818), and single (28.7%, 2194). As for survey site locations, most respondents were from urban (64.0%, 4887), as for religion most of them were Buddhists (51.9%, 3960) and atheists (29.9%, 2281). Most of (82.3 %) respondents and 81.4% of males have heard about non-remunerated voluntary blood donation. This indicator was increased by 10.2 points in the follow-up survey and became 92.8%. There was no difference between the living location and gender of the population in terms of whether they heard about non-remunerated voluntary blood donation (Table 1).

Knowledge of blood donation: No respondent answered all the 14 questions to assess the knowledge level of respondents. However, compared to the baseline survey percentage of respondents who were answered correctly was increased. In the baseline survey, only 3.4% of

respondents knew more than 4 correct answers. While it was 43.5% in this follow-up survey. One survey respondent knew in approximately 3.32 ± 2.05 correct answers out of 14. Women (3.6 ± 1.96) knew the correct answers were high by 0.47 points from male (3.53 ± 2.11) respondents ($T=18.02$, $p=0.00002$). In the baseline survey, it was 1.04 ± 1.12 [95% CI: 1.01-1.08] which is 3.19 times lower than follow up survey result ($T=1635.9$, $p<0.0001$) (Table 2).

Table 1. Summary of main findings of baseline and follow-up surveys

No	Indicators	The baseline, 2015	Follow up, 2019
General indicators			
1.	<i>Number of survey respondent</i>	3851	3782
	Male	45.0%	45.1%
	Female	55.0%	54.9%
2.	<i>Percentage of ethnic groups of respondents</i>		
	Khalkh	84.3%	85.3%
	Kazak	7.8%	7.6%
	Buriad	4.0%	3.4%
	Zakhchin	2.8%	0.5%
	Others	1.1%	3.2%
3.	<i>Percentage of education level</i>		
	Uneducated	1.0%	2.2%
	Only literate	0.0%	3.0%
	Primary	3.5%	1.4%
	Secondary	15.2%	10.6%
	Secondary and high	29.7%	28.1%
	Vocational	10.7%	10.1%
	Bachelor	37.7%	43.9%
	Master or PhD	2.2%	3.3%
4.	<i>Living location of respondents, by percentage</i>		
	Ulaanbaatar	59.8%	68.3%
	Provincial center	36.0%	31.7%
	Soum	4.2%	-
5.	Mean age of respondents	34.7 ± 12.3	36.0 ± 14.1
Population attitude on blood donation			
1.	Percentage of respondents who agrees with the high necessity of blood in Mongolia	66.0%	69.0%
2.	Percentage of respondents who believe that blood donation has no risk	70.8%	76.4%
3.	<i>Leading 2 reasons for not donating blood, by percentage</i>		
	The scare of anemia of own blood	34.3%	24.5%
	Has some diseases	34.3%	23.0%
	No knowledge about blood donation	43.3%	13.5%
4.	Percentage of respondents who agrees that blood donation is a good deed	93.2%	93.9%

Practice on blood donation			
1.	Percentage of respondents who had been donated a blood	23.1%	15.8%
2.	Percentage of feelings after blood donation		
	Percentage of respondents who feel positive after blood donation	27.1%	29.4%
	Percentage of respondents who has no unique feeling	45.1%	39.5%
3.	Percentage of blood donors who admitted to the survey	22.8%	14.6%
4.	Percentage of blood donors who made a blood donor from someone close to him/her	25.8%	37.5%
5.	Percentage of blood donors who willing to become a blood donor for a good deed	58.7%	56.0%
Information received sources			
1.	Respondents have received information from the following sources, by percentage		
	Internet, websites	6.6%	9.0%
	Social network	14.0%	32.8%
	Television	34.2%	37.5%
	Information sheets	4.0%	3.3%
2.	Feelings after received information about blood donor		
	Percentage of respondents who has not to care about blood donor related information	54.8%	24.4%
	Percentage of respondents who thought about blood donation	40.4%	50.4%

It has been defined that highly educated and female respondents were more knowledgeable than the rest of the group. There were not observed significantly differ on religion, and living location of the person. 43.5% of respondents knew more than 4 correct answers while in the baseline survey it was only 3.4%. In the follow-up survey, 6.3% of respondents did not know at least one correct answer, while it was 38.9% in the baseline survey. Knowledge is increasing by growing the age of survey respondents. 6.3% of surveyed respondents are regardless of age group and gender had a misconception. The percentage of wrong understanding level of respondents was the highest among the youth aged between 18-25 years and was 8.2%. This indicator is statistically reduced by increased age ($\chi^2=15.87$, $p=0.017$). Compared with the baseline survey, correct answer percentage level increased by 4.6-64.8% each age group and an average it was 21.8% (Table 1).

Table 2. Percentage of "Do not know" response among the population on non-remunerated blood donation

№	Knowledge of voluntary non-remunerated blood donation	The baseline survey, 2015		Follow-up survey, 2019	
		"Do not know" response, %	95% CI	"Do not know" response, %	95% CI
1.	What is the average volume of blood in adults?	73.8	72.5-75.2	53.1	51.6-54.8
2.	How much blood a donor can give at once?	90.7	89.8-91.7	52.4	50.8-54.0
3.	Do you know your blood type?	58.1	56.6-59.7	47.9	46.2-49.5
4.	Who is a blood donor according to your opinion?	99.2	99.0-99.5	34.4	32.8-36.0
5.	Is it OK to use the blood of a donor who had a history of hepatitis "A"?	95.3	94.7-96.0	95.4	94.7-96.0
6.	When is blood donation postponed temporarily?	98.1	97.7-98.5	74.2	72.8-75.6
7.	Who cannot donate blood even when relatively healthy, in your opinion?	100.0	100.0-100.0	89.0	88.0-89.9
8.	How should a person prepare before donating blood?	87.8	86.8-88.8	83.2	81.9-84.4
9.	Which diseases exclude a person to become a blood donor?	100.0	100.0-100.0	58.6	57.0-60.2

Many (41.3 %) of total respondents (95%CI 38.8-43.7) did not know to use the blood of a donor who had a history of hepatitis "A", who cannot donate blood even when relatively healthy, how should a person prepare before donating blood. Most of the population know "what is an average volume of blood of an adult", "how much a blood donor can give at once", "who is a blood donor". Interestingly, the knowledge of these questions during the baseline study was extremely poor and knowledge gained after advocacy activity it was increased by 20.7-64.8%.

Attitude of survey respondents to donate blood: In the follow up survey, 59.2% of surveyed respondents said they have never thought of becoming a voluntary blood donor. There was no statistically significant difference compared to the baseline survey. We have defined how much the level of knowledge affects people's attitudes to donating blood. As the knowledge level increased, the number of those who had thought of giving their blood was significantly increased ($\chi^2= 294.51$, $p < 0.0001$).

Table 3. Respondents knowledge, an attitude of thinking about becoming donating blood

Knowledge level	Concerned about blood donation		Not concerned about blood donation	
	Baseline, 2015	Follow-up, 2019	Baseline 2015	Follow-up 2019
Wrong knowledge	393, 24.7%	52,3.4%	1105, 48.9%	188, 8.4%
1-3 correct answer	1106, 69.4%	628,40.7%	1116, 49.4%	1270, 56.7%
More than 4 correct answer	94, 5.9%	863, 55.9%	37, 1.6%	781, 34.9%
Total	1593 (41.4%)	1543 (40.8%)	2258 (58.7%)	2239 (59.2%)

In young ages, the population was more likely to donate blood. For example, 43.7% of respondents who are 18-25 ages and 43.2% of the 26-35 aged respondents said they would give their blood. Respondents who had not thought about blood donation were asked why they did not think about it. 16.1% of them had a history of blood donation before and 38.2% said they never thought about it. Compared to the findings of the baseline study, the percentage of reasons "I do not care about it", "nobody asked me", "blood donation is bad for health" and "I am self-inflicted" decreased. However, 68 people or 1.8% of total respondents believed blood donation harms health or it is none of their business.

We defined awareness of whether it needs blood donors in Mongolia by gender. This attitude was a bit better among women than men whereas the response of UB city respondents was higher from rural respondents (74.3%), most of UB city residents thought there is a great need for blood. This tendency was increased in either gender of urban residents from the baseline survey ($\chi^2=122.83, p=0.0001$). 20.4% of respondents thought blood donation brings some kind of risk. However, compared to the baseline survey result proportion of positive attitude was increased (Figure 1).

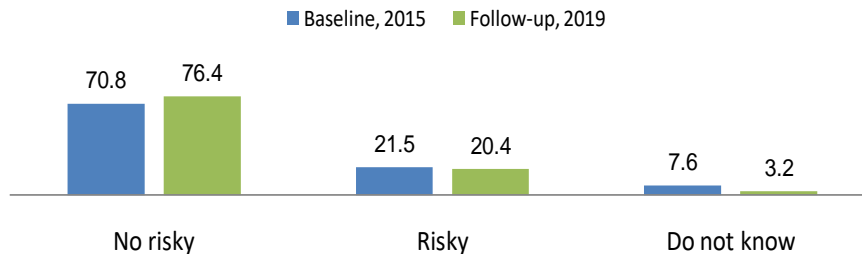


Figure 1. People’s opinion on risk, by percentage, in comparison with the baseline survey result

Based on both survey finding, 82.2% of respondents who gave blood is doing it because they are like to help others and to save people's lives ($\chi^2=16.37$, $p<0.0001$).

The practice of survey respondents to donate blood: Fifteen-point-eight (15.8%) percent of survey respondents (95%CI: 14.6-16.9) said they donated their blood. 43.6% out of these people (95%CI: 39.0-48.0) donated only once, 32.2 % (95%CI: 27.8-36.4) donated twice. The number of donors who had donated blood was 1 or 2 times was increased compared to the baseline survey.

As the age of respondents increased the share of people who donated blood decreased. 13.8 % of survey respondents (95%CI: 9.7-18.4) donated blood when they were 18, 11.6 % (95%CI: 8.9-14.2) at the age of 19 when first donated blood. 52.2% of people who donated their blood (95%CI: 48.0-56.4) did so at their own free will, 17.4% (95%CI: 14.2-20.4) donated because they were coerced to help somebody. 23.1% of survey respondents (95%CI: 19.5-26.7) donated blood following by their organization and coworkers. 52.3% of survey respondents (95%CI: 43.8-66.3) said that they take blood tests each time when they donate blood, 28.8% (95%CI: 18.8-38.8) of them said they sometimes take tests. 37.5% of blood donors (95%CI: 27.5-48.7) said that they made somebody from their close circles into a blood donor. 53.8% of blood donors participated in the follow-up survey (95%CI: 47.7-63.2) said that they generally know when not to donate their blood (Table 1).

Source of information of survey respondents: The vast majority of the surveyed population receives information from multiple sources and the most commonly used media are television and social media, especially www.facebook.com. Information users are differing from their agegroup. The sources of information were not different in urban and rural areas.

The IEC/BCC campaign on sharing a piece of knowledge, disseminating information, and attitude changing actions were used the most wanted mass media channel of the general population. Also, those were conducted in interesting and attracting ways. More than half of respondents have seen the IEC/BCC material and 50.4% of them had considered donating blood. The official website of relevant organizations and e-mails contacts became more alive for users and improved the access of information on blood donors at reliable websites. The IEC/BCC campaign on sharing a piece of knowledge, disseminating information, and attitude changing actions were used the most wanted mass media channel of the general population. One out of two respondents of the baseline survey wanted to get information from television. In 2019, this indicator has changed and most respondents wanted to get information from the social media (www.facebook.com).

Discussion

The study focused on general knowledge, attitude and practice toward the blood donation and analyzed it by age, gender, education, ethnicity, religion and living area of the target population. The National Center for Blood transfusion, Mongolian Red Cross Association, and other blood centers can use the results of the study. We evaluated IEC/BCC the campaign on blood donors among the general population by using the comparative survey findings. Baseline and follow up

surveys were done with same survey instrument. Overall, 7633 respondents were attended to both surveys.

Demographic parameters of respondents: The socio-economical and demographical characteristic of the both surveys were similar and not significantly different. In general, social indicators of survey respondents are similar to the Mongolian population statistics [9]. This indicates that the study sample represents the Mongolian population 18-60.

Globally, a variety of strategies to specifically target minority donors have been reported by several national blood donation organizations, including media campaigns (using traditional and newer forms of media, such as social media), interventions through minority and/or religious organizations, increased minority staff in blood donation organizations, health practitioner-led interventions, donor recruits-donor interventions, public event recruitment, door-to-door recruitment, and public health initiatives such as cardiovascular screening [10].

In 2019, the search result for "blood donor" on the Internet was about 200,000, and most importantly the majority of them provided information on the population. Similar approaches were used Frye et al [11], Grassineau et al [12], Charbonneau and Daigneault [13] were defined that it is possible to design and implement effective interventions to motivate individuals from ethnic/racial minority groups to donate blood. One-off interventions may be as effective as multifaceted, community-based interventions.

Many donor recruitment and retention activities necessarily take place at individual blood center level, coordination of the blood donor program will help to maximize efficiency and cost-effectiveness. National policies and quality systems ensure uniformity in standards and operations [14]and enable often limited resources to be used to maximum advantage [15]. National criteria for donor selection and standardized procedures for assessing donor suitability, donor counselling, blood collection and donor care protect the health and safety of donors, recipients and staff. National media campaigns can achieve wide coverage and a high profile to support local activities while nationally-produced donor information and education materials provide consistent messages and reduce the need for materials to be developed at local level. Those are similar with this survey findings.

Knowledge and attitude of blood donation: Sutton [16] focused on the relationship between attitude and historical events, using responses on a five-point Likert scale to five items: (a) historical events, such as the Tuskegee experiment, make me nervous about donating blood; (b) the medical establishment cannot be trusted; (c) trust plays a major part in my decision to become a blood donor; (d) my prior knowledge about blood donation motivates me to donate blood; (e) knowledge of prior mistreatment of African Americans affects my decision to donate blood. No statistically significant difference in attitude was found before and after an education session ($t(146)=-1.455$, $p= 0.148$). Robbins et al [17]assessed "Decisional Balance," using a 12-item measure where participants rate "Pros" (e.g., saving someone's life), "Eligibility Cons" (e.g., find out I have a disease), and "Physical Cons" (e.g., afraid of needles) on a 5-point scale to reflect how important each item is in their decision whether or not to be a regular blood donor.

They found a significant increase in reported “Physical Cons,” $t(149) = 2.41, p = 0.017, d = 0.20$. No significant differences were found for “Pros” or “Eligibility Cons.” However, they also examined stage progression according to the transtheoretical model and found that 46.9% of those in a preaction stage at pretest progressed at least one stage at posttest assessment.

According to our survey findings the knowledge of blood donation in the surveyed population increased by 21.8% compared to a baseline study nevertheless of respondent's religious belief and place of residence. Compared to the baseline survey findings, the vast majority of respondents agreed the blood donation is a good deed, the blood demand in Mongolia is high and the numbers of people who willing to become blood donors are had increase trend. The correct knowledge of donating blood directly influenced the tendency of donating blood. Compared with the baseline survey, the tendency of becoming a blood donor is increased. 15.8% of respondents had donated their blood at least once or twice. The vast majority of donated blood voluntarily as a result of the desire to help someone and the result was close to the results of the baseline study, whereas the organization increased the gift of blood with the community.

The practice of survey respondents to donate blood: Thomson et al reported that every year 80% of first time donors globally would never return to donate [18]. Furthermore, Rajagopalan et al [19] reported that donors and non-donors in medically oriented population including medical and nursing students do not differ significantly in their sentiment towards blood donation but lack motivation.

The main factors of this study to becoming a blood donor are education level, gender, and attitude of the working environment, and willingness to do good deeds. 15.8% of this survey respondents had donated their blood at least once or twice. The vast majority of donated blood voluntarily as a result of the desire to help someone and the result was close to the results of the baseline study, whereas the organization increased the gift of blood with the community. The glorification of blood donors contributes to the recruitment of new donors and a positive impact on the distribution of information, and to support regular donors who have voluntarily donated their blood.

Voluntary blood donors themselves benefit from health education and encouragement to maintain healthy lifestyles as well as regular health checks and referral for medical care, if needed. Provided that they receive good donor care when they donate blood, they feel personal satisfaction and self-esteem which provides a sense of social engagement and belonging that is recognized and valued by the community. Voluntary blood donors serve as effective donor educators, recruiters and health promoters. Studies have shown that the influence of active blood donors is one of the most effective strategies for donor recruitment [20].

The numbers of study results shows that majority of the participants to be non-donors. In addition, the non-donor group stated that long distance to donation site, transportation difficulty, time commitment, getting a short break from work/office or a time off from home, different fears, mistrust, lake of information and not being approached by anybody to donate were the

main factors discouraging them from blood-donation. [21-28]. The result of current study was similar with them.

Source of information of survey respondents: In this current survey's IEC and BCC campaign was conducted by all possible ways and based survey finding and demand of general population. Based on the baseline study of 2015, 54.8% of the surveyed population had no motivation were in blood donation observed, and in 2019 this figure dropped to 24.4%. In 2015, the keyword search result for "blood donor" on the Internet was about 34,700, but most were news (blood donation, blood donation increased), interviews, and world blood donation dates.

In conclusion: Maintaining public awareness and sustaining regular blood donor is an integral part of establishing a blood donor program. In this regard based on our survey finding evidence-based IEC/BCC campaign has effectively improve awareness general population on sustainable blood programing. In further Governments, blood transfusion services and other stakeholder especially blood donors should work together to conduct accurate assessments and develop appropriate responses to threats. Policy decisions should be based on up-to-date scientific, medical and epidemiological evidence, with due consideration of economic, ethical and social factors, rather than being driven by factors such as pressure groups or the emotive weight of individual cases.

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