

## Evaluation of the Factors that affect voluntary blood donation in students at Rushoroza Seed School, Kanungu District.

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### ABSTRACT

Globally, in 2015 World Health Organization theme for blood donor day campaign was “thanks for saving my life”. On June 14<sup>th</sup>, WHO, strongly encourages more people to donate blood voluntarily and regularly with slogan “Give freely”, give often, blood donation matters world-wide. Uganda with a population of 34 million needs about 250,000 units of blood to be able to meet its national needs but couldn't get these big units due to many challenges. The main purpose of this study was to evaluate factors affecting Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu District. This study was conducted in Rushoroza Seed School. A cross-sectional descriptive and quantitative study was employed. The results showed that 67% (45) participants had never donated blood voluntarily, 33% (22) ever donated blood voluntarily. Out of 67 participants majority of them donated 35(52.2%) so that they can get biscuits and soda after the donation while 22(32.8)% were encouraged by friend to donate blood, 6(8.95%) heard appeal for blood donation on radio and 4(5.97%) relative/friend needed blood to be transfused. Out of 67 participants' reasons for not donating blood voluntarily 35(52.3%) was due to fear of to be tested for medical illness like HIV, 25(37.3)% fear of needles prick and only 7(10.4%) fear of looking at blood to avoid fainting. The 63% (42) of participants said they think blood donation is necessary, 24% (16) did not think of its importance and 13% (9) said that it was not necessary.

**Keywords:** Blood donation, voluntary, Kanungu district and students.

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### INTRODUCTION

Voluntary blood donors are the cornerstone of a safe and adequate supply of blood and blood products from low-risk populations worldwide. Blood and blood products are the essential part of health care for patients deficient in one or more blood components and it remains the only source of replacement therapy in cases of its loss as well as for other components [1]. The demand for blood and blood products in most countries is continuously increasing because of the rise in human life expectancy; the implementation of new and aggressive surgical and therapeutic methods requires large quantities of blood and blood products [2] [3-5].

According to [3], reported that over a million blood units are collected from

donors every year, yet many more millions still need to be collected to meet the global demand, ensure sufficient and timely provision of blood much as psychology and motivation of blood donors in developed countries is well understood. This knowledge promoted safe blood supply based on voluntary, non-remunerated donors in those countries across the world. Identifying motivational factors affecting voluntary blood donation and recruitment of safe and low-risk donors is a challenge in the developing world which calls governmental commitment and required the need to improve research evidence in this area of practice [3].

In Africa, according to Kenya 2009 national census, blood donation in

Nairobi has been declining over the years where 38,808 units of blood were donated in 2006 as compared to 30,840 units collected in 2009. According to WHO Guidelines, a country needs at least 1% of the total population but with a Ugandan population of 34 million, should ideally collect 340,000 units of blood thus Uganda needs about 250,000 units of blood to be able to meet its national needs, but could only collect 220,000 units of blood in 2014 because of many challenges [4][6-9].

Many concerns about the factors affecting voluntary blood donation which ranges from socio-demographic, organizational, religious, weights, age, physiological and psychological factors still influence people's willingness to voluntarily donate blood [5] [9-15]

However, in western region of Uganda particularly in Kanungu District such concerns have not yet been identified or studied in any secondary school, despite the national minimum target of 250,000 units of blood needed annually which has never been reached. Though anyone who knows that he/she is feeling well, anyone who is above the age of 16 to 17 years old, and anyone who is above 45 kilograms, who is not on any medication, is eligible to donate blood. Thus, this study was to understand the various factors affecting Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu District.

#### **Problem Statement**

Globally, a 2015 World Health Organization theme blood donor day campaign was "thanks for saving my life" on June 14, strongly encourages more people to donate blood voluntarily and regularly with slogan "Give freely" give often blood donation matters worldwide [6]. The rise in human life expectancy and implementing new and aggressive surgical and therapeutic methods increased the demand for blood and blood products in most countries [3] [14-18]. Arrange of socio-demographic, organizational, physiological and psychological factors may affect people's willingness to donate blood [5][17][19].

In spite of extensive efforts and a number of blood donation programs being organized worldwide, the availability of adequate and safe blood still remains short to meet the increased demand for it mainly in developing countries for instances India, Africa and so on. The WHO advocates that 3%-5% of the population should donate blood every year; this would be the ideal rate for maintaining a country's stock of blood and blood products at acceptable level [7] [20-24]

But an East African country particularly Uganda with population of 34 million who needs about 250,000 units of blood to be able to meet its national needs but couldn't get these big units due to many challenges [4]

However, the figure on factors affecting Voluntary Blood Donation among students at Rushoroza Seed School in Kanungu District is unknown. The implementation of educational programs on voluntary blood donation in Rushoroza Seed School look to be new and emerging part in clinical practice which require the need of evidence-based knowledge and robust research findings. The current study was to provide an insight and opportunity to assess factors affecting Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu District.

#### **Aim of study**

The aim of this study was to assess factors affecting Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu District.

#### **Specific objectives**

- i. To assess the socio-demographic characteristics of blood donors and potential blood donors among students at Rushoroza Seed School, Kanungu District.
- ii. To find out the factors that discourage voluntary donation of blood among students at Rushoroza Seed School, Kanungu District.
- iii. To identify cultural opinions about voluntary blood donation among students at Rushoroza Seed School, Kanungu District.

### Research questions

- i. What are the socio-demographic characteristics of blood donors and potential blood donors among students at Rushoroza Seed School, Kanungu District?
- ii. What factors discourage voluntary donation of blood among students at Rushoroza Seed School, Kanungu District?
- iii. What are the cultural opinions about voluntary blood donation among students at Rushoroza Seed School, Kanungu District?

### Justification of the study

Voluntary blood donation is by far the best worldwide. Evidence of [6] report indicated that, in low and middle-income countries, median annual donation per center was 3,100 compared to 15, 000 in high income countries which shows an ample access difference of blood between low and high-income countries [8]. Blood

is required in many instances in many hospital settings in Uganda including Kanungu district. However, it cannot be synthesized thus human donors are its only source. Also, blood remains a perishable commodity thus cannot be stored beyond 35 days.

It is crucial for individuals to donate blood voluntarily and do so regularly hence there is a need to motivate more people to voluntarily donate blood and encourage them to become repeat donors. Therefore, this study assessed factors affecting Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu District. The results would help the health personnel, Planners and policy makers, NGOs use it to provide appropriate strategies to enhance VBD practice and others who are engaged in Blood donation activities. It may also be used as a reference in related filed.

### METHODOLOGY

#### Study design and rationale

A cross-sectional descriptive and quantitative study was employed. Self-completed questionnaire and semi-structured interviews were used to assess factors affecting Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu District. This study design was chosen because it focuses on a particular facility and describes conditions as they exist in their natural setting so as to give a clear picture of that situation.

#### Study setting and rationale

This study was conducted in Rushoroza Seed School, a public secondary school founded by Uganda Ministry of Education, the Government of Uganda and Kanungu District Administration. Kanungu District is bordered by Rukungiri District to the north and east, Kabale District to the south-east, Kisoro District to the south-west, and the Democratic Republic of the Congo to the west. The district headquarters are approximately 60 kilometers by road, north-west of Kabale, and the largest town in the sub-region. This location is approximately 420 kilometres by road, south-west of

Kampala, Uganda's capital and largest city [9][25].

#### Study population

The annual population growth rate for Kanungu district was calculated at 2.1 percent, it has been estimated that the population in 2012 was 252,100 [10][26]

The study targeted population of students in senior four and six who were the candidate class at Rushoroza Seed School. These age group is young growing reproductive age therefore would give appropriate information for accuracy of the study.

#### Sample size determination

A sample size of participants was calculated using Sloven Formula (1962), which state as  $n = \left( \frac{N}{1+N(e)^2} \right)$

Where;  $n$  =desired sample size,  
 $e$  = Degree of error acceptable at 5% = 0.05  
 $N$  = population of desired characteristics which these population were the students in senior four and six who were the candidate class at Rushoroza Seed School of total population of over 81 candidates of 2017,  $N=81$ .

In this case, 95% was the confidence level and 5% was the acceptable limit of error

$$n = \left( \frac{81}{1 + 81(0.05^2)} \right)$$

$$n = 67.3596673596$$

Therefore, the sample size,  $n = 67$  participants

#### **Sampling procedure**

Multistage sampling method was used in selecting the study sample. This included senior four candidates and senior six classes. They were selected from their classes then ask to volunteer by raising their hand before they meet the selection criteria.

#### **Eligibility criteria**

##### **Inclusion criteria**

The study included only students in senior four and six who were the candidate class at Rushoroza Seed School Kanungu district who were willing to participate voluntarily during the time of study.

##### **Exclusion criteria**

Students in senior four and six who were candidate class at Rushoroza Seed School, Kanungu district not willing to participate voluntarily during the time of study.

##### **Study variables**

##### **Dependent variable**

Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu district.

##### **Independent variables**

The factors that discourage voluntary donation of blood among students at Rushoroza Seed School, Kanungu district Cultural opinions about voluntary blood donation among students at Rushoroza Seed School, Kanungu district

##### **Research instrument**

The research instrument was the questionnaire written in English Language which was developed by the Researcher to collect data on factors affecting Voluntary Blood Donation among students at Rushoroza Seed School, Kanungu District.

The questionnaire consisted with both close and open-ended questions. The close ended questions were to enable the participants choose from available options while the open-ended questions were to allow them express their own ideas in their own words.

#### **Validity and reliability of instruments**

The validity of research instrument was done through the judgment of the project supervisor and Research Committee in the School of Nursing of Kampala International University-Western Campus who were experts to determine the relevance of content in relation to purpose of the study and research questions as well as clarity of statements and logical accuracy of the instrument. Reliability of the questionnaire was pre-tested before the start of data collection process to make early amendments.

#### **Data collection procedures**

Data collections were done by means of questionnaire which was developed by the Researcher to use as interview guide for a period of two weeks. Each study participants were requested to fill the questionnaire in English with the help of Researcher. The participant would be thanks for the cooperation and participation on the study.

##### **Data management**

The data information collected was kept between the researcher and the participants in order to provide privacy. The collected data in the questionnaires were properly kept confidential and prevented any other person from accessing it.

##### **Data analysis and presentation**

Quantitative data collected were edited for consistency and a descriptive analysis of the data were carry out to show response frequency and percentages using the computer software program Microsoft office Excel 2007 version. Data analyzed were presented in the form of tables, pie charts, graphs and frequency distribution tables, for interpretation, discussion and conclusion.

##### **Ethical considerations**

After ethical approval, an introduction letter was got from Kampala International University-Western Campus School of Nursing sciences which was addressed to the Head teacher of Rushoroza Seed School, Kanungu District allowed the researcher to conduct the survey.

The participants who willingly participated were given an informed decision about participating or not. During the study written consents were sought from respondents by reading and explaining the purpose of study.

Participant's information was handled confidential. Their rights and privacy were respected.

## RESULTS

### Socio-demographic data of the participants

**Table 1: Show socio-demographic characteristics of the study participants n=67**

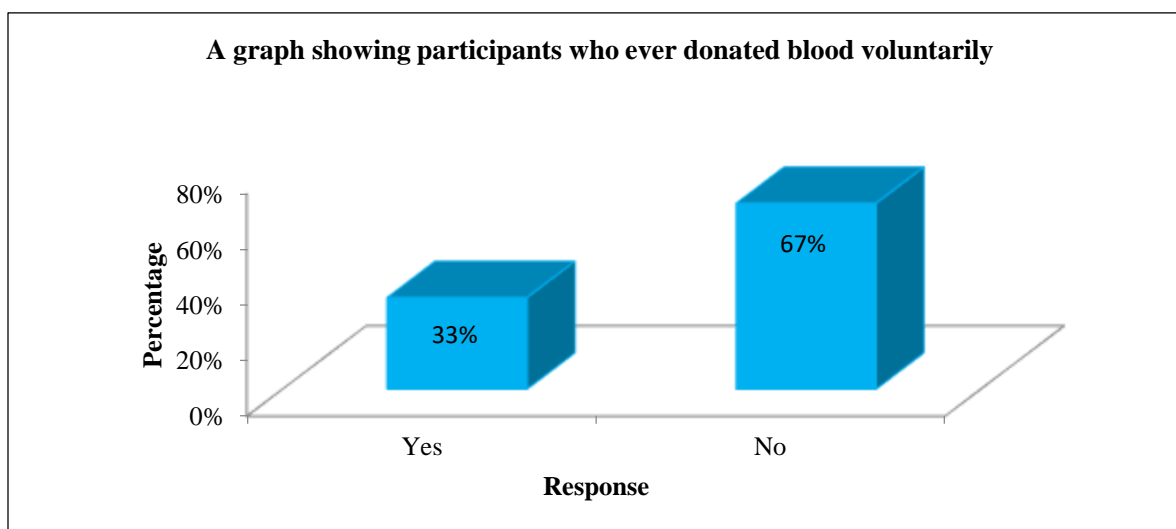
Variables	Description	Frequency, n	Percentage /%
Age range in years	16-19	30	45
	20-24	22	33
	25 and above	15	22
	<b>Total</b>	<b>67</b>	<b>100</b>
Sex	Male	40	60
	Female	27	40
	<b>Total</b>	<b>67</b>	<b>100</b>
Tribe	Banyankole	20	30
	Bakiga	34	51
	Bafumbira	13	19
	<b>Total</b>	<b>67</b>	<b>100</b>
Marital status	Married	2	3
	Single	64	96
	Other (engaged)	1	1
	<b>Total</b>	<b>67</b>	<b>100</b>
Religion	Protestant	19	28.4
	Catholic	27	40.3
	Seventh Day Adventist	11	10.4
	Other (Pentecostal)	3	4.5
	<b>Total</b>	<b>67</b>	<b>100.0</b>
Residence	Urban	24	36
	Rural	43	64
	<b>Total</b>	<b>67</b>	<b>100</b>

*Source: primary data*

On table 1 above, out of 67 participants, majority 30(45%) were age range 16-19 years and lowest 15(22%) were 25years and above. Most 40(60%) were male while few 27(40%) female. Majority 34(51%) were bakiga and lowest 13(19%) bafumbira.

Out of 67 respondents, 64(96%) were single while only 1(1%) were engaged. Many were Catholics 27 (40.4%) and few 3(4.5%) other (Pentecostal). Most 43(64%) from rural and few 24(36%) urban.

### The factors that discourage voluntary donation of blood



**Figure 1: A graph showing participant who ever donated blood voluntarily n=67**

*Source: primary data*

Figure 1 above shows 67% (45) No voluntarily meanwhile 33% (22) Yes participants have not donated blood participants did.

**Table 2: Show participants' times of donating blood in lifetime(n=67)**

Variables	Frequency (n)	Percentage /(%)
Once	51	76.1
2-3 times	12	18
More than 4 times	4	5.9
<b>Total</b>	<b>67</b>	<b>100</b>

*Source: primary data*

Table 2 above out of 67 participants, most 51(76.1%) donated once while 4(5.9%) donated more than 4 times.

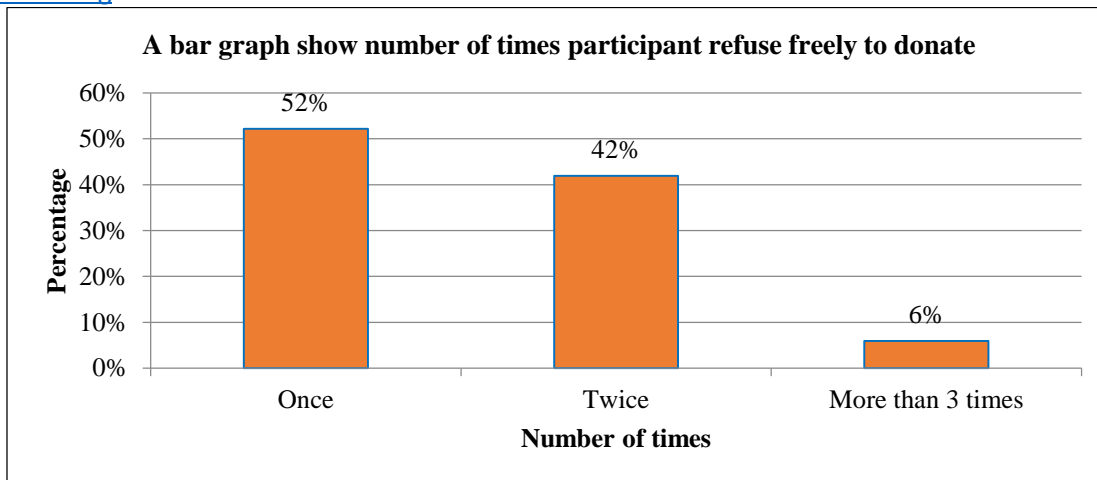
**Table 3: Show reason why participant have ever donated blood voluntarily (n=67)**

Variables	Frequency (n)	Percentage /(%)
Heard appeal for blood donation on radio	6	8.95
To get biscuits and soda after the donation	35	52.2
Relative/friend needed blood to be transferred	4	5.97
Encouraged by friend to donate blood	22	32.8
<b>Total</b>	<b>67</b>	<b>100</b>

*Source: primary data*

Table 3 revealed, out of 67 participants majority with 35(52.2%) to get biscuits and soda after the donation while

4(5.97%) relative/friend needed blood to be transferred.



**Figure 2: A bar graph show number of times participant refuse freely to donate. n=67**  
**Source: primary data**

Figure 2 results show out of 67 majorities of participants with 35(52%) refused once while only 4(6%) refused more than 3 times.

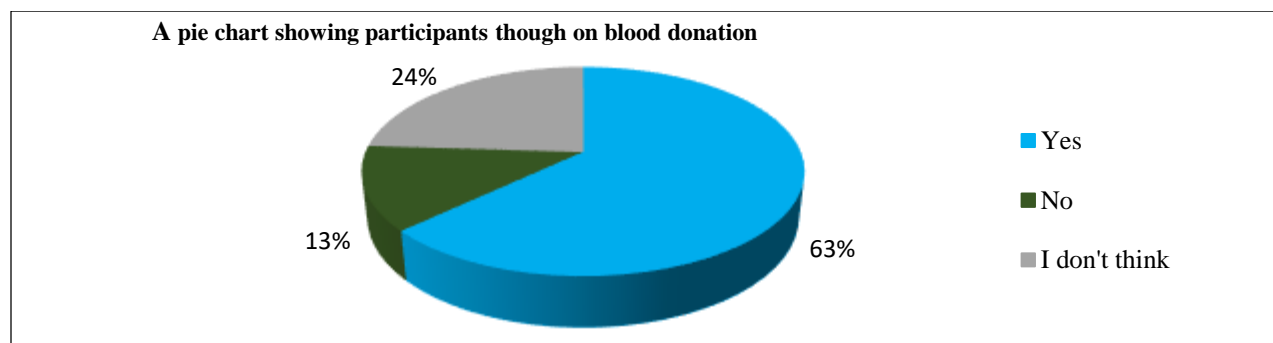
**Table 4: Show participants' reasons for not donating blood voluntary (n=67)**

Variables	Frequency (n)	Percentage / (%)
Fear of needles prick	25	37.3
Fear to be tested for medicine illness like HIV	35	52.3
Fear of looking at blood to avoid fainting	7	10.4
<b>Total</b>	<b>67</b>	<b>100</b>

**Source: primary data**

Table 4 above out of 67 participants reasons for not donating blood voluntary 25 (37.3%) fear to be tested for medical illness like HIV, 7(10.4%) had fear of looking at blood to avoid fainting.

**The cultural opinions focus about voluntary blood donation**



**Figure 3: A pie chart shows participants thought on blood donation whether necessary n= 67.Source: primary data**

Results on figure 3; majority with 63% (42) said they think blood donation is necessary, 24% (16) did not think of it importance and 13% (9) reported No.

**Table 5: Show participants cultural opinions towards voluntary blood donation(n=67).**

Variables		Frequency, n=67	Percentage /%
Beliefs to be against their cultural practices	Yes	60	90
	No	7	10
Perceptions to cause medical complication like anaemia, HIV	Yes	59	88
	No	8	12
Knowledge about blood donations as health worker's ideas	Yes	48	72
	No	19	28
Attitudes to promote voluntary blood donation	Yes	56	84
	No	11	16
Social norms (expectations, obligations and currently anchored in social groups)	Yes	45	67
	No	22	33
Subjective norms (a perceived social pressure to perform a behavior from significant others)	Yes	17	25
	No	50	75
Personal values (feelings of moral obligation; religious or spiritual affiliation)	Yes	65	97
	No	2	3
Pro-social motivation (altruism, collectivity, or helping community)	Yes	50	75
	<b>No</b>	<b>17</b>	<b>25</b>

**Source: primary data**

According to table 5 above, out of 67 study participant most 60(90%) beliefs to be against their cultural practices towards blood donation (Yes) while 7(10%) disagree. Out of 67 respondents 59(88%) agreed (yes) that Perceptions cause medical complication like anaemia, HIV while 8(12%) disagreed or said No.

Majority of the respondents, 48(72%) had knowledge about blood donation as health workers ideas while 8(12%) lacked knowledge.

Majority of the respondents 56(84%) had attitudes to promote voluntary blood donation while 11(16%) disagreed.

Out of 67 respondents, 45(67%) agree that social norms (expectations, obligations

and currently anchored in social groups) while only 22(33%) disagreed.

Majority of the respondents disagreed that subjective norms (a perceived social pressure to perform a behavior from significant others) while only 17(25%) agreed.

Out of 67 respondents, 65(97%) had personal values (feelings of moral obligation; religious or spiritual affiliation) while only 2(3%) disagreed.

Out of 67 respondents, 50(75%) had pro-social motivation (altruism, collectivity, or helping community) while 17(25%) lacked the pro-social motivation.

**DISCUSSION****Socio-demographic characteristics**

Analyses to compare the socio-demographic characteristics of study participants who had ever donated blood showed that the majorities with 30(45%) were in age range 16-19 years and minority 15(22%) were 25 years and above in line with [11][27][28], found out that

respondents who had ever donated blood found out that the youngest age group below 30 years had the highest population of blood donors.

The findings also revealed that most 40(60%) of the participants were male and few 27(40%) were female in this study similarly [12] revealed that proportions of



males were 54% who had donated blood was significantly higher than females which had 46%. For instance, males are usually heavier than females and are therefore more likely to weigh above 50 kg which is the cut-off weight for donation [29-31].

Nearly the highest percentages with 34(52%) participants were bakiga tribe and lowest 13(19%) bafumbira this is because bakiga tribe is native people where the study was carried out.

Out of 67 respondents, 64(96%) were single while only 1(1%) were engaged. However, this study finding contradicts with the study done by [13] to assess knowledge on blood donation concerning marital status and found out that there were high levels of knowledge in married partners 389(50.4%), 16(2.1) were divorced, 334(43.4%) were single, and 36(4.1%) widowed.

Meanwhile majority of the candidates 27(40.4%) were Catholics and the minority 3(4.5%) other (who said they were Pentecostal) this is because Catholic are the predominant religion in Rushoroza Seed School and it being the foundation of this secondary school. This concurs with the study done by [5][32][33] that revealed religion can also affects voluntary blood donation.

Results from the study also showed that most of the participants were from rural residence 43(64%) and minority 24 (36%) were from urban resident this is so because the school is located on rural based district. This study finding concur with the study finding of [14][34][35], who found out that the residents who lived in united kingdom from 1980-1996, as well as long term residents in several European countries during that period ,are ineligible to donate blood. There are several locations that may cause a 1-year deferral such as parts of Mexico, China and Philippines as well as tropical areas where malaria is endemic.

#### **The factors that discourage voluntary donation of blood**

The results found out that 67% (45) participants had never donated blood voluntarily meanwhile 33% (22) ever donated blood voluntarily. The findings

support a study done by [5], which revealed ranges of socio-demographic, organizational, physiological and psychological factors, may affect people's willingness to voluntarily donate blood.

Out of 67 participants, most 51(76.1%) donated once while 4(5.9%) donated more than 4 times. However, this study finding does not concur with study done by [7], that stipulated that a person can donate blood 168 times during his/her 18yrs up to 65 years with 45 and above kilograms of weight, and Males can donate every three months while females every four months.

Out of 67 participants majority with 35(52.2%) donated for the reasons that to get biscuits and soda after the donation while 4(4%) relative/friend needed blood to be transferred. This result is in similarity with [11] report that the main motivation leading individuals to give blood is altruism (because it was the right things to do) despite the person has ever donated blood voluntarily.

Meanwhile out of 67 participants' reasons for not donating blood voluntary 35(52.3%) fear to be tested for medical illness like HIV, while only 7 (10.4%) had fear of looking at blood to avoid fainting. These findings were corroborated by a more recent study by [11] which revealed that the main obstacles to blood donation were medical reasons (32%). It is also supported by one study conducted in the United State of America showed that the lack of a convenient location was the most important factor for both first time (42%) and repeat donors (43%), this "convenience factor" was much more important to donors who were age 25 or younger [15][36][37].

Out of 67 majorities of participants with 35(62%) refused once while only 4(6%) refused more than 3 times. The reason for refusal of BD could have been fear of needle, seeing blood and pain, so this study finding was also revealed in study conducted by [16] that More than one-third of them (37.6%) reported that they had fear of needle or seeing blood and 25.9% mentioned that blood donation procedure is a painful experience.

### **The cultural opinions focus about voluntary blood donation**

Majority of the participants thought with 63% (42) said they think blood donation is necessary and 13% (9) reported No (not necessary). This study results agreed with [17], findings that in Africa negative perceptions of blood and blood donation is often passed on from generation to generation.

Out of 67 study participants most 60(90%) beliefs blood donation to be against their cultural practices towards donation (Yes) and minority 7(10%) disagreed (No) response. This study finding concur with study done by [18] who revealed in Sub-Saharan African countries: Burkina Faso, Nigeria, South Africa, Tanzania, Togo, and Uganda identified aspects of culture, including beliefs and myths associated with both non voluntary and voluntary blood donation in the region.

Out of 67 respondents 59(88%) agreed (yes) that Perceptions cause medical complication like anaemia, HIV while 8(12%) disagreed or said No. This study finding concur with a study done by [18] who found out that misinformation and negative perceptions about blood donation have been discovered in some studies carried out in African countries. Such studies often call for educating more people about blood and blood donation [38-40]

Majority of the respondents, 48(72%) had knowledge about blood donation as health workers ideas while 8(12%) lacked knowledge. This study finding concurs with the study done by [17] found out that a meta-analysis to assess the efficacy of interventions to promote blood donation did not identify any articles on mass media interventions but culture is often considered to be influenced by communication hence acquisition of knowledge about blood donation.

The study showed that most of the blood donors in Rushoroza Seed School were young within the age range of 16-19 years.

The main motivating factors to donate blood amongst previous blood donors were to get biscuits and soda after the

Majority of the respondents 56(84%) had attitudes to promote voluntary blood donation while 11(16%) disagreed. Out of 67 respondents, 45(67%) agree that social norms (expectations, obligations and currently anchored in social groups) while only 22(33%) disagreed. Out of 67 respondents, 65(97%) had personal values (feelings of moral obligation; religious or spiritual affiliation) while only 2(3%) disagreed. These study findings are in line with study finding revealed by [19] that a useful framework for understanding the factors that affect blood donation, including marketing communication and aspects of culture such as religiosity, social norms, beliefs, and attitudes about blood donation [41][42][43] [44].

In addition, 75% "No" that subjective norms (a perceived social pressure to perform a behavior from significant others) and few 25% responded "Yes". The results are in line with [20] found that useful framework for understanding the factors that affect blood donation, including marketing communication and aspects of culture such as religiosity, social norms, beliefs, and attitudes about blood donation.

Out of 67 respondents, 50(75%) had pro-social motivation (altruism, collectivity, or helping community) while 17(25%) lacked the pro-social motivation. However, this study finding does not correspond with study done by [3] who revealed that Identifying motivational factors affecting voluntary blood donation and recruitment of safe and low-risk donors is a challenge in the developing world which calls governmental commitment and required the need to improve research evidence in this area of practice.

### **CONCLUSION**

donation, encouragement by friend to donate blood, heard appeal for blood donation on radio and 5% relative/friend needed blood to be transfused.

The main reason for not donating blood amongst those who had never donated was fear to be tested for medicine illness

like HIV, fear of needles prick and fear of looking at blood to avoid fainting. Majority of the participants think blood

donation is necessary while others did not think of its importance and few said it's not necessary.

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