

Barriers for Donating Blood Voluntarily among People aged between 18-55 Years Living in Eastern Sri Lanka

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Abstract: Over a million blood units are collected from every donor every year, nevertheless, many more millions still need to be collected to meet the global demand of blood. A cross-sectional descriptive study was carried out for a period of one year aimed to assess the public knowledge, attitude, motivational factors and barriers for donating blood voluntarily in an administrative division of eastern Sri Lanka. After obtaining informed written consent, data were collected through a pilot tested, Interviewer Administered Questionnaire, frequencies, percentages and associations were assessed. A total of 405 respondents were interviewed, of which 194 (47.9%) were male and 211 (52.1%) were female. The majority (51.36%) of the respondents had adequate knowledge regarding blood donation and majority of the respondents (92.3%) answered positively as blood donation is a healthy habit. Only 33.6 % of the individuals had previous experience on voluntary blood donations. There were significant associations with the socio-demographic characteristics of gender, age, education, occupation and blood group with a p-value of less than 0.05. Nearly half of the participants (49%) had inadequate knowledge on blood donations and motivational factors such as altruism, peer pressure, media awareness had influence among more than half of them. This study revealed fear of seeing blood or feeling faint and needle pain as the barriers for voluntary blood donations among more than 55% of the participants. Attitudes related to blood donations were not significantly associated with socio-demographic characteristics but they may have contributed to the barriers of donating blood. This study identified factors influencing knowledge, attitude and motivation towards voluntary blood donations and they can be eliminated from the society through conducting series of well-planned awareness programmes.

Keywords: Motivational factors, Voluntary blood donations, Humanity.

I. INTRODUCTION

A. Background

Human blood is vital constituent of human life which is universally recognize as the most valuable element that sustains life and there are no substitutes to blood as yet. Blood is a connective tissue composed of a liquid extra cellular matrix called blood plasma that dissolves and suspend various cells and cell fragments. The blood donation is transfer blood or components of blood from one person (donor) in to the blood stream of another person (recipient). It acts as a lifesaving operation to replace the blood cells or blood products lost through the bleeding or due to the depression of bone marrow. Blood transfusion was first performed in Sri Lanka in late 1950s.

In Sri Lanka, the details of blood collection in every cluster in 2017 was reported and the amount of the mobile campaigns conducted in the country in 2017 were 5463, and the total collection of blood donors were 423 668 from the population. The National Blood Transfusion Service Statistic reported that the number of blood collections in 2017 in Batticaloa District from 108 mobiles was 6367. This is a lower number in comparison with other districts. According to the officials of the blood bank in Teaching Hospital, Batticaloa, people are more reluctant to donate blood voluntarily when requested

to donate even in emergency situations. There were poor attendances to mobile blood donation camps conducted in Manmunaipattu, in comparison with other divisions. So this study is expected to assess the knowledge, attitude and barriers towards voluntary blood donation among selected G.N divisions

II. METHODOLOGY

A. Study Design

A community based, descriptive, cross sectional quantitative study was conducted in a selected administrative division.

B. Participants

People aged between 18 – 55 years of both gender living in the Grama Niladhari (Village Officer) divisions of Manmunaipattu Divisional Secretary (D.S) division in Batticaloa district of the eastern Sri Lanka during 2019 /2020.. The individual who was not support the study, people who are working in health care system, people who are staying temporarily in selected area during the study period, those who diagnosed as blood related disorders and physically and mentally affected people. Ethical approval was obtained from the Ethical Review Committee, Faculty of Health-Care Sciences of the Eastern University, Sri Lanka.

C. Procedures

According to the Department of Census and Statistic District Office, population size of the study area was 7074 and the sample size was calculated as 405 using the formula of Krejcie and Morgan (1970). Households were randomly selected from the list obtained from Grama Niladhari. Data was collected from the people who were available at home gave consent to participate the study using a pilot tested and face validated interviewer administered questionnaire. A structured interviewed administered questionnaire (IAQ) was used to collect the information. IQA was developed by investigators under guidance and supervision. It consists socio demographic details, knowledge, attitude, motivations and barriers related questions. The study instrument was face validated by Medical Officer and Nursing -in- Charge of the blood bank, Senior Lecturer in Nursing, Department of Supplementary Health Sciences and the Primary Supervisor of this study. Twenty individuals were selected from the area for the pilot study (The participants were excluded in the main study). The questionnaire was modified according to the outcome of the pilot study. After receiving ethical clearance, a written permission was obtained from Divisional Secretary.

D. Statistical analysis

Questions regarding blood donation were best answer questions and “Yes”, “No” or “Don’t know” answered questions. A Scoring system was used to assess poor, adequate or good knowledge, attitude and other factors. All the variables were presented as total and percentage. One hundred marks were allocated for this section. Score value of the section was calculated. According to the total score the level of knowledge was graded into the three categories. Frequencies and percentages were obtained using descriptive statistical analysis and the associations were obtained through Chi-Square tests data using SPSS version 19.

III. RESULTS AND DISCUSSION

A. Demographic details of the participants

A total of 405 respondents were interviewed, of which 194 (47.9%) were male and 211 (52.1%) were female. Majority of the participants were from the age group between 30 to 50 years and more than 75 % of them have very good educational background. More than 90 % of them were employed either in government, private or self-employment (See table 1).

B. Knowledge, attitude, barriers and motivational factors

More than half (51.36%) of the respondents had adequate level of overall knowledge on many aspects of blood donations and its importance to the self and others, (32.10%) of the respondents had moderate level of knowledge and rest of them (16.54%) had poor knowledge regarding blood donation . overall knowledge of voluntarily blood donation among participants was adequate but some participants were having moderate and inadequate knowledge even though they have adequate knowledge regarding blood donation. They may have positive as well as negative aspects of attitudes regarding blood donation (see table 2).

Table 1: Socio Demographic Characteristics of the Participants

Category	No of Respondents n (%)
Gender	
Male	194 (47.9)
Female	211 (52.1)
Age	
18-28	74 (18.3)
29-39	167 (41.7)
40-49	106 (26.2)
50-59	58 (14.3)
Ethnicity	
Tamil	339 (83.7)
Muslim	65 (16.0)
Burgher	1 (0.2)
Religion	
Hindu	302 (74.6)
Islam	67 (16.5)
Christian	36 (8.9)
Marital status	
Married	295 (72.8)
Unmarried	94 (23.2)
Separated	2 (0.5)
Divorced	5 (1.2)
Widowed	9 (2.2)
Education	
Non formal education	7 (1.7)
Up to grade 5 (primary)	10 (2.5)
Grade 6 to G.C.E. O/L	77 (19.0)
Up to G.C.E A/L	209 (51.6)
Graduates	102 (25.2)
Occupation	
Unemployment	70 (17.3)
Self-employment	73 (18.0)
Government	207(51.1)
Non-government	53 (13.1)
Retired	2 (0.5)
Monthly income	
< 15 000	86 (21.2)
15 000- 24 999	87 (21.5)
25 000- 34 999	64 (15.8)
>35 000	168 (41.5)
Blood group	
A group	58 (14.3)
B group	100 (24.7)
AB group	65 (16.0)
O group	107 (26.4)
Don't know	75 (18.5)

Table 2: Knowledge on Non -Communicable Diseases and Communicable Diseases

Knowledge Questions	Correct n (%)	Incorrect n(%)
1. Can people with following conditions be allowed to donate the blood?		
a. Anemia	313 (77.3)	92 (22.7)
b. Diabetics	301 (74.3)	104 (25.7)
c. Hypertension	259 (64.0)	146 (36.0)
d. Chronic kidney disease	285 (70.4)	120 (29.6)
e. Heart disease	283 (69.9)	122 (30.1)
f. Asthma	251 (62.0)	154 (38.0)
g. Bleeding disorders	306 (75.6)	99 (24.4)
h. Convulsive disorder	278 (68.6)	127 (31.4)
i. Cancer	314 (77.5)	91 (22.5)
2. Can people exposed to the following disease conditions be allowed to donate blood?		
a. HIV/AIDS	347 (85.7)	58 (14.3)
b. Hepatitis B&C	300 (74.1)	105 (25.9)
c. Syphilis	280 (69.1)	125 (30.9)
d. Malaria	318 (78.5)	87 (21.5)
3. Are pregnant ladies able to donate blood?	68 (16.8)	337 (83.2)
4. Lactating mothers able to donate blood?	82 (20.2)	323 (79.8)
5. Could blood donation cause transmission of infection to receiver?	229 (56.5)	176 (43.5)
6. Can people with any blood group donate blood?	135 (33.3)	270 (66.7)
7. Is someone with the history of drug abuse allowed to donate blood?	56 (13.8)	349 (86.2)
8. Is someone with the history of unsafe sexual intercourse allowed to donate blood?	65 (16.0)	340 (84.0)
9. Can women donate blood while menstruation?	91 (22.5)	314 (77.5)

Majority of the participants (83.7%) responded that 18- 55 years is the suitable age for donating blood and 36.5% accepted that minimum weight for donating blood is 50 kg. Nearly half of them responded that a healthy donor can donate the blood once in every 6 months. Most of them (68.6) having lack of knowledge regarding the amount of blood can be drawn from an adult during blood donation. 71.6% of the participants responded through an incorrect answer for the required time for blood donation process.

This study indicated that, more than half of (51.36%) the participants had adequate level of knowledge, (32.10%) of them had moderate level of knowledge and remaining (16.54%) of participants had inadequate knowledge regarding blood donation. The reasons behind this poor attitude regarding blood donation were the decreased level of awareness among the community in the current study area and could be due to some religious believes, lack of individual pressure and lacking presence of mobile blood donation caravans in public area and no one motivating them to donate blood voluntarily, Among them (57.2%) of female respondents had better knowledge than (42.8%) of male respondents. Attitudes question were answered by the participants and we came to the following results after analysis of the responses. Majority of respondents (92.3%) answered positively as blood donation is a healthy habit and 7.7% of them responded negatively and who can be considered as having negative attitudes toward blood donation (See table 3).

Table 3: Attitudes on Blood Donation

Attitude questions	Yes n (%)	No n (%)
1. What do you think about blood donation is a healthy habit?	374 (92.3)	31 (7.7)
2. Is the blood donation is religious duty?	57 (14.1)	348 (85.9)
3. Are you willing to donate blood to a relative or anyone in need of blood?	358 (88.4)	47 (11.6)
4. Are you willing to expect money or gift for donating blood?	27 (6.7)	378 (93.3)
5. Have you had an experience on blood donation?	136 (33.6)	269 (66.4)
6. Will you encourage others to donate blood?	352 (86.9)	53 (13.1)
7. Have you had donate the blood at any occasion?	112 (27.7)	293 (72.3)

More than half of (51.36%) the respondents had good level of attitudes regarding blood donation. According to our study, three fourth of respondents had good level of attitudes on blood donation and the results of the study revealed that some of the motivational factors influenced on them to increased their attitude regarding blood donations, they were, blood donation makes them feel good / good thought to do (81.5%), wanting to help other people (85.9%) and half of them willing to donate blood because of media advertising blood donation via television, radio and social media. The major barriers among the respondents may be due to fear of seeing blood (55.1%), fear of feeling faint/dizzy (53.8%), fear of discovering some unknown disease (51.4%) and fear of needle pain (51.1%) and family discourage, medical mistrust and misunderstanding, don't know where to donate blood and not time for blood donation were influenced on very low amount of percentage regarding voluntarily blood donation (table 4).

Table 4: Motivational Factors on Blood Donation

Motivational factors	Yes n (%)	No n (%)
a. Altruism		
1. Makes me feel good	330(81.5)	75 (18.5)
2. Wanting to help people	348(85.9)	57 (14.1)
3. Sense of duty	270(66.7)	135 (33.3)
4. Service to community/helping	303(74.8)	102 (25.2)
5. Anonymous gift	255(63.0)	150 (37.0)
b. Peer pressure		
1. Individual pressure	76(18.8)	329 (81.2)
2. Personal request	124(30.6)	281 (69.4)
3. Pressure from authority	84(20.7)	321 (79.3)
c. Presence of mobile blood donation	147(36.3)	258 (63.7)
d. The media was advertising for blood		
1. Television	257 (63.5)	148 (36.5)
2. Radio	267 (65.9)	138 (34.1)
3. Social media	238 (58.8)	167 (41.2)
4. Newspaper	251 (61.0)	154 (38.0)
e. For religious reason	94 (23.2)	311 (76.8)
f. To reduce the weight	89 (22.0)	316 (78.0)
g. To get know my blood group	107 (26.4)	298 (73.6)
h. Through the awareness programme	222 (54.8)	183(45.2)

The findings of the current of our study were contrast from other studies conducted in the neighboring countries in Central India, those demonstrated that they have significantly moderate knowledge and attitude regarding blood donation. Another Kuwait study findings revealed that, they had poor knowledge and attitude toward voluntarily blood donation among population [1] [2]. Of the respondents 55.1% had identified that fear of seeing blood is a major barrier for blood donation (table 5). A similar study was conducted among African American and Jordan population also supported to our findings, only 36.2% and 39.9% respectively had correctly identified [3] [4]. In our study of all the subjects, 92.3% of the respondents knew that blood donation is healthy habit and 7.7% of them responded negative attitude toward blood donation. It consists with previous study conducted in Kuwait and a descriptive study conducted in Kilimanjora, Tanzania populations [2] [5]. In our study only 83.7% of the respondents recognized that 18-55 years is the suitable age for donating blood and 36.5% accepted that minimum weight for donating blood is 50kg and 68.6% having lack of knowledge regarding how much blood can be drawn during blood donation. 71.6% of people responded incorrect answer for the required time for blood donation process. A similar finding was found by another cross sectional observational conducted in the Department of Health Management Karachi but a study conducted in Jabalpur indicated higher number of respondents had aware of knowledge about blood donation [1] [6].

Table 5: Barriers on Blood Donation

Barriers	Response n (%)
1. Fear of seeing blood	223(55.1)
2. Fear of feeling faint or dizzy	218(53.8)
3. Fear of discovering some unknown diseases	208(51.4)
4. Fear of needle pain	207(51.1)
5. Fear of gaining weight	176(43.5)
6. Fear of becoming weak	169(41.7)
7. Medical mistrust and misunderstanding	158(39.0)
8. No one ever asked me to donate blood	157(38.8)
9. Don't know where to donate blood	148(36.5)
10. Fear of getting anemia	148(36.5)
11. Fear of getting infection and disease	146(36.0)
12. No time for blood donation	139(34.3)
13. Family discourage	125(30.9)

In current study majority of the respondents had taken awareness regarding blood donation from media advertising for blood donation such as television (63.5%), radio (65.9%), social media (58.8%) and newspaper. According to a community survey conducted in Karachi, the most common source of information about blood donation through friends and relatives (55%), followed by health care staff (14.3%), print resources (10.4%) and television (10.7%) [6]. Understanding the attitude regarding the voluntarily blood donation in the community is important to improve their attitude positively regarding donate blood. There is a regular need for blood and blood products due to road traffic accidents, dengue epidemics, routine surgeries, violence and high burdens of blood diseases. It is unfortunate that though people respond positively toward blood donation and number of blood donor is scored [7] [8]. In our study, 92.3% respondents were responded positively toward attitudes on blood donation. The finding was different from the findings reported in the earlier studies carried out in Kuwait (75%) and Jordan (42.2%) [2] [4].

The finding of the present study was different from finding of one of the studies conducted in Ethiopia, among populations, where 43.5% of respondents said that blood donation is good habit, where as 6.5% thinks badly [9]. When comparing another cross sectional study conducted in Kilimanjaro, participants had positive attitudes (90%) toward voluntary blood donation which was compared to a study in Ethiopia [5]. Failure to achieve target amount of blood donors may due to fear of getting infection, not having enough time for donation, medical issues, fear of pain, fear of anemia and difficult in accessing blood donation center and these barriers more influenced on woman than men [2].

Table 6: Association of fear of seeing blood or fainting with demographic factors

Category	Fear of seeing blood during B.D*			Fear of fainting after B.D		
	Yes n (%)	No n (%)	P value	Yes n (%)	No n (%)	P value
Gender						
Male	107 (48.0)	87 (47.8)	0.971	106(46.8)	88 (47.1)	0.753
Female	116 (52.0)	95 (52.2)		112 (51.4)	99 (52.9)	
Age in years						
18-28	36 (16.1)	38 (20.9)	0.178	36(16.5)	38 (20.3)	0.547
29-39	86 (38.6)	81 (44.5)		87 (39.9)	80 (42.8)	
40-49	65 (29.1)	41 (22.5)		61(28.0)	45 (24.1)	
50-59	36 (16.1)	22 (12.1)		34 (15.6)	24 (12.8)	
Ethnicity						
Tamil	173 (77.6)	166 (91.2)	0.001^	185 (84.9)	154 (82.4)	0.476
Muslim	49 (22.0)	16 (8.8)		32 (14.7)	33 (17.6)	
Burgher	1 (0.4)	0 (0.0)		1 (0.5)	0 (0.00)	
Religion						
Hindu	155 (65.9)	147 (80.8)	0.005^	167 (76.6)	135 (72.2)	0.53
Islam	49 (22.0)	18 (9.9)		32 (14.7)	35 (18.7)	
Christian	19 (8.5)	17 (9.3)		19 (8.7)	17 (9.1)	
Marital status						
Married	163 (73.1)	132 (72.5)	0.215	160 (73.4)	135 (72.2)	0.032^
Unmarried	55 (24.7)	39 (21.4)		55 (25.2)	39 (20.9)	
Separated	0 (0.00)	2 (1.1)		0 (0.00)	2 (1.1)	
Divorced	1 (0.4)	4 (2.2)		0 (0.00)	5 (2.7)	
Widowed	4 (1.8)	5 (2.7)		3 (1.4)	6 (3.2)	
Education						
Non formal education	2 (0.9)	5 (2.7)	0.503	2 (0.9)	5 (2.7)	0.152
Up to grade 5 (Primary)	6 (2.7)	4 (2.2)		6 (2.8)	4 (2.1)	
Grade 6 to G.C.E. O/L	40 (17.9)	37 (20.3)		35 (16.1)	42 (22.5)	
Up to G.C.E. A/L	114 (51.1)	95 (52.2)		112 (51.4)	97 (51.9)	
Graduates	61 (27.4)	41 (22.5)		63 (28.9)	39 (20.9)	
Occupation						
Unemployment	34 (15.2)	33 (18.1)	0.719	30 (13.8)	37 (19.8)	0.427
Self- employment	36 (16.1)	33 (18.1)		41 (18.8)	28 (15.0)	
Government	125 (56.1)	89 (48.9)		119 (54.6)	95 (50.8)	
Non- government	27 (12.1)	26 (14.3)		27 (12.4)	26 (13.9)	
Retired	1 (0.4)	1 (0.5)		1 (0.5)	1 (0.5)	
Monthly income						
<15 000	32 (14.3)	54 (29.7)	0.001^	42(19.3)	44 (23.5)	0.000^
15 000- 24 999	46 (20.6)	41 (22.5)		49 (22.5)	38 (20.3)	
25 000- 34 999	42 (18.8)	22 (12.1)		19 (8.7)	45 (24.1)	
>35 000	103 (42.6)	65 (35.70)		108(49.5)	60 (32.1)	
Blood group						
A group	31 (13.9)	27 (14.8)	0.357	30 (13.8)	28 (15.0)	0.463
B group	58 (26.0)	42 (23.1)		60 (27.5)	40 (21.4)	
AB group	42 (18.8)	23 (12.6)		38 (17.4)	27 (14.4)	
O group	55 (24.7)	52 (28.6)		53 (24.3)	54 (28.9)	
Don't know	37 (16.6)	38 (20.9)		37 (17.0)	38 (20.3)	

^ p value < 0.05: statistically significant

B.D*- Blood Donation

Table 7: Association of fear getting infections or anemia after blood donations with demographic factors

Category	Fear of getting infections after B.D*			Fear of getting anaemia after B.D		
	Yes n (%)	No n (%)	P value	Yes n (%)	No n (%)	P value
Gender						
Male	76 (52.1)	118 (45.6)	0.209	74(50.0)	120 (46.7)	0.521
Female	70 (47.9)	141 (54.4)		74 (50.0)	137 (53.3)	
Age in years						
18-28	26 (17.8)	48 (18.5)	0.833	24 (16.2)	50 (19.5)	0.879
29-39	58 (39.7)	109 (42.1)		62 (41.9)	105 (40.9)	
40-49	38 (26.0)	68 (26.3)		40 (27.0)	66 (25.7)	
50-59	24 (16.4)	34 (13.1)		22 (14.9)	36 (14.0)	
Ethnicity						
Tamil	114 (78.1)	225 (86.9)	0.042^	125 (84.5)	214 (83.3)	0.73
Muslim	32 (21.9)	33 (12.7)		23 (15.5)	42(16.3)	
Burgher	0 (0.00)	1 (0.4)		0 (0.00)	1 (0.4)	
Religion						
Hindu	107 (73.3)	195 (75.3)	0.015^	109 (73.6)	193(75.1)	0.566
Islam	32 (21.9)	35 (13.5)		23 (15.5)	44 (17.1)	
Christian	7 (4.8)	29 (11.2)		16 (10.8)	20 (7.8)	
Marital status						
Married	108 (74.0)	187 (72.2)	0.639	110 (74.3)	185 (72.0)	0.042^
Unmarried	35 (24.0)	59 (22.8)		38 (25.7)	56 (21.8)	
Separated	0 (0.00)	2 (0.8)		0 (0.0)	2 (0.8)	
Divorced	1 (0.7)	4 (1.5)		0 (0.00)	5 (1.9)	
Widowed	2 (1.4)	7 (2.7)		0 (0.0)	9 (3.5)	
Education						
Non formal education	0 (0.00)	7 (2.7)	0.078	0 (0.0)	7 (2.7)	0.138
Up to grade 5 (Primary)	6 (4.1)	4 (1.5)		2 (1.4)	8 (3.1)	
Grade 6 to G.C.E. O/L	25 (17.1)	52 (20.1)		25 (16.9)	52 (20.2)	
Up to G.C.E. A/L	82 (56.2)	127 (49.0)		84 (56.8)	125 (48.6)	
Graduates	33 (22.6)	69 (26.6)		37 (25.0)	65 (25.3)	
Occupation						
Unemployment	27 (18.5)	40 (15.4)	0.075	23 (15.5)	44(17.1)	0.839
Self- employment	24 (16.4)	45 (17.4)		29 (19.6)	40 (15.6)	
Government	68 (46.6)	146 (56.4)		75 (50.7)	139 (54.1)	
Non- government	27 (18.5)	26 (10.0)		20 (13.5)	33 (12.8)	
Retired	0 (0.00)	2 (0.8)		1(0.7)	1(0.4)	
Monthly income						
<15 000	32 (21.9)	54 (20.8)	0.122	34 (23.0)	52 (20.2)	0.006^
15 000- 24 999	27 (18.5)	60 (23.2)		35 (23.6)	52 (20.2)	
25 000- 34 999	17 (11.6)	47 (18.1)		11 (7.4)	53 (20.6)	
>35 000	70 (47.9)	98 (37.8)		68 (45.9)	100 (38.9)	
Blood group						
A group	28 (19.2)	30 (11.6)	0.023^	19 (12.8)	39 (15.2)	0.466
B group	43 (29.5)	57 (22.0)		42 (28.4)	58 (22.6)	
AB group	16 (11.0)	49 (18.9)		19(12.8)	46 (17.9)	
O group	32 (21.9)	75 (29.0)		38 (25.7)	69 (26.8)	
Don't know	27 (18.5)	48 (18.5)		30 (20.3)	45 (17.5)	

^ p value < 0.05: statistically significant B.D*- Blood Donation

Table 8: Association of family discouragement or medical mistrust on blood donations with demographic factors

Category	Family discouragement for B.D			Medical mistrust on B.D		
	Yes n (%)	No n (%)	P value	Yes n (%)	No n (%)	P value
Gender						
Male	68 (54.4)	126 (45.0)	0.08	83 (52.5)	111 (44.9)	0.136
Female	57 (45.6)	154 (55.0)		75 (47.5)	136 (55.1)	
Age in years						
18-28	13 (10.4)	61 (21.8)	0.004^	21 (13.3)	53 (21.5)	0.062
29-39	50 (40.0)	117 (41.8)		63 (39.9)	104 (42.1)	
40-49	35 (28.0)	71 (25.4)		51 (32.3)	55 (22.3)	
50-59	27 (21.6)	31 (11.1)		23 (14.6)	35 (14.2)	
Ethnicity						
Tamil	104 (83.2)	235 (83.9)	0.325	143 (90.5)	196 (79.4)	0.003^
Muslim	20 (16.0)	45 (16.1)		14 (8.9)	51 (20.6)	
Burgher	1 (0.8)	0 (0.00)		1 (0.6)	0 (0.0)	
Religion						
Hindu	97 (77.6)	205 (73.2)	0.469	128 (81.0)	174 (70.4)	0.019^
Islam	20 (16.0)	47 (16.8)		16 (16.1)	51 (20.6)	
Christian	8 (6.4)	28 (10.0)		14 (8.9)	22 (8.9)	
Marital status						
Married	91 (72.8)	204 (72.9)	0.201^	115 (72.8)	180 (72.9)	0.499
Unmarried	33 (26.4)	61 (21.8)		35 (22.2)	59 (23.9)	
Separated	0 (0.00)	2 (0.7)		0 (0.00)	2 (0.8)	
Divorced	1 (0.8)	4 (1.4)		3 (1.9)	2 (0.8)	
Widowed	0 (0.00)	9 (3.2)		5 (3.2)	4 (1.6)	
Education						
Non formal education	0 (0.00)	7 (2.5)	0.030^	4 (2.5)	3 (1.2)	0.025^
Up to grade 5 (Primary)	2 (1.6)	8 (2.9)		2 (1.3)	8 (3.2)	
Grade 6 to G.C.E. O/L	15 (12.0)	62 (22.1)		19 (12.0)	58 (23.5)	
Up to G.C.E. A/L	71 (56.8)	138 (49.3)		91 (57.6)	118 (48.8)	
Graduates	37 (29.6)	65 (23.2)		42 (26.6)	60 (24.3)	
Occupation						
Unemployment	16 (12.8)	51 (18.2)	0.556	29 (18.4)	38 (15.4)	0.578
Self-employment	21 (16.8)	48 (17.1)		21 (13.3)	48 (19.4)	
Government	70 (56.0)	144 (51.4)		86 (54.4)	128 (51.8)	
Non- government	18 (14.4)	35 (12.5)		21 (13.3)	32 (13.0)	
Retired	0 (0.00)	2 (0.7)		1 (0.6)	1 (0.4)	
Monthly income						
<15 000	14 (11.2)	72 (25.7)	0.000^	35 (22.2)	51 (20.6)	0.364
15 000- 24 999	21 (16.8)	66 (23.6)		31 (19.6)	56 (22.7)	
25 000- 34 999	14 (11.2)	50 (17.9)		20 (12.7)	44 (17.8)	
>35 000	76 (60.8)	92 (32.9)		72 (45.6)	96 (38.9)	
Blood group						
A group	24 (19.2)	34 (12.1)	0.173	21 (13.3)	37 (15.0)	0.015^
B group	34 (27.2)	66 (23.6)		46 (29.1)	54 (21.9)	
AB group	20 (16.0)	45 (16.1)		23 (14.6)	42 (17.0)	
O group	25 (20.0)	82 (29.3)		50 (31.6)	57 (23.1)	
Don't know	22 (17.6)	53 (18.9)		18 (11.4)	57 (23.1)	

^ p value < 0.05: statistically significant

B.D*- Blood Donation

According to the recommendation of WHO, and eligible criteria for blood donor requirements are be healthy and not suffering from cold, flu or other illness at the time of donation, aged between 18-55 year, weight at least 50kg, having a normal temperature and blood pressure and meeting the guideline designed to protect both the donor and the receipt [11]. In our study, 83.7% of respondents said 18-55 years is the suitable age for donating blood and 36.5% accepted that minimum weight is 50kg, nearly half of them replied every 6 months can donate blood, 68.6% having lack of knowledge regarding how much blood is drawn from them and 71.6% responded incorrect answer for the required time for blood donation process. These findings consist with previously conducted Ethiopian study. It indicated that participants had moderate knowledge regarding blood donation in Kilimanjaro. A Tanzanian study showed having good knowledge level among public on blood donation [5] [9].

The current study results also indicated that the attitude of the respondents were positive regarding blood donation is a healthy habit (92.3%), not a religious duty (85.9%), willing to donate blood to a relative or anyone in need of blood (88.4%), not receiving any gift/money for donation blood (92.3%) and encourage others to donate blood (86.9%). As well as majority of the respondents in above studies have mentioned that they would donate blood at any occasions (72.3%) and they selected nearest Teaching Hospital Batticaloa (16%) than other resources such as mobile (2.2%), work place (6.4%) and educational places (1%). According to our current study, a higher proportion of the respondents (85.9%) had donated because of motivational factors of blood donation, they can help people in need and service to community/helping the community (74.8%) and more than half of them replied awareness program (54.8%) and social media (58.8%) also motivated them regarding blood donation (table 4 and 5). But findings of another study conducted in Kuwait were different from our results. In that study, over 75% considered blood donation is a national duty and 62% viewed as a religious duty. More female participants have expressed very good attitude toward blood donation ($p=0.006$) when compared with their male counterparts [2].

According to WHO guidelines, the recommended activities related to blood donation from collection of blood to distribution of blood products should be coordinated at the National level and Blood donation and universal access to safe blood transfusion to achieve universal health coverage. The slogan for the campaign “safe blood for all” to raise awareness about the universal need for safe blood in the delivery of health care [12]. Our findings indicated that more than half (51.36%) of the respondents had adequate level of knowledge regarding knowledge on non-communicable disease and who can allow to donate blood and 83.2% of responded that pregnant ladies unable to donate blood and more than half of respondents ensured that there is a known combination between blood donation and transmission of infection to receiver. A study which was conducted in Jabalpur, in Central India, revealed similar results and more than 50% of people also mentioned following statements correctly, those persons with any blood group can donate blood, anemic people are no to allowed to donate blood, lab testing for blood donors is mandatory before transfusion and pregnant mother should not donate blood and blood donation doesn't cause infections to recipient as the blood is screened before transfusion [2].

The current study revealed that 33.6% of the participants had an experience on blood donation. A study done in Jordan, the results showed that, 42.6% of the participants know the compatibility of blood group, 28% have no knowledge about blood components and 31.8% don't know the amount of blood in human [13]. But the findings slightly different from Kilimanjaro, Tanzania study. The awareness and knowledge of voluntary blood donation were significant blood donation significant association between knowing a person who had donated blood and been aware of their blood group with blood donation where why 85.3% and 64% aware their blood group respectively [5].

In the current study, there was a significant association between knowledge on blood donation and following socio demographic characteristics; gender, age, education and occupation (tables 6, 7 and 8). The similar geographical factors were significantly association with knowledge of participants according to a study conducted in Ethiopia [9]. In fact, education is appeared to be the principal factor determining the level of knowledge on blood donation as shown in the previous study conducted in Jabalpur and Jordan. One possible explanation for this is that individual with better education have more access to information regarding blood donation. There was a significant association between barriers and following socio demographic characteristics; marital status, occupation and education according to the current study. A similar study which was conducted in United States, the study results showed that there were significant positive correlation between barriers and socio demographical details and knowledge on socio demographical details. However, voluntary blood donation related to knowledge, attitude and barriers had a significant relationship with gender and educational status and occupation [12].

Although people living in the region possess adequate knowledge and attitudes toward volunteer blood donations several other factors were identified as having significant associations with voluntary blood donations. Majority of these factors can be modified because they need life style modifications and changing of attitudes.

IV. CONCLUSION

Positive aspects of knowledge were suitable age for donating blood, accepted minimum weight, frequency of donating, amount drawn during blood donation, communicable and non-communicable disease and eligible criteria. Positive attitudes were blood donation were perceiving blood donation as not a religious duty, willing to donate blood to a relative or any one in need of blood, not expecting money or gift for donating blood and encouraging others also to donate blood voluntarily. Motivational factors were altruism, media advertising for blood donation and through some awareness program. The barriers of negative aspects of knowledge were lack of knowledge regarding the required time for blood donation process, eligibility of pregnant or lactating mothers for donating blood and the persons exposed to HIV/AIDS, hepatitis, syphilis and malaria disease condition. Among the respondents, the eligible criteria for blood donors was below to the recommendation of WHO. Thus, it means the increasing needs for adequate blood supply to meet the rising demand and the medical process of saving lives. It is essential to explore into the public awareness with regard to blood donation and its eligible criteria. There is a need to organize active awareness programs in the relevant public area. This research study revealed the need of active and effective involvement of health sectors and local and national authorities for improving their awareness level in the community wise. Awareness programs should be conducted using mass media (television, radio and other social media) with the full participation of individuals, blood bank staff and healthcare personnel.

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