

Research Article

# Knowledge, Attitude and Practice regarding voluntary blood donation among the bachelor level students of Chitwan, Nepal

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## ABSTRACT

**Background and Objectives:** Blood transfusion is a core service within health care systems and individuals who donate their blood in the treatment of sick human for different conditions such as surgery, accident, delivery and treatment of different diseases. The donation of blood by voluntary non-remunerated blood donors is recognized as being crucial for the safety and sustainability of national blood supplies. The study is carried out to find out the prevalence of blood donors and to explore the knowledge, attitude and practice on voluntary blood donation of medical students.

**Material and Methods:** Data were collected from a semi-structured questionnaire and technique was self-administered questionnaire to know the level of knowledge, attitude and practices of blood donation and analyze by using SPSS software among 167 medical students of Shree Medical and Technical College, Chitwan. The scoring system in knowledge was included. Attitude was assessed by using 3-point Likert scale.

**Results:** Majority of respondents (92.8%) had heard about voluntary blood donation and almost all (97.2%) respondents knew the correct meaning of voluntary blood donation. About 38.9% had poor knowledge regarding voluntary blood donation and 61.1% of the respondents had good knowledge on voluntary blood donation and mean knowledge was found to be 56.17%. Those respondents who had work experience had significantly low level of knowledge than who did not have work experience ( $p = 0.0025$ ).

**Conclusion:** To increase the prevalence of voluntary blood donation, specific campaigns involving interactive awareness sessions on blood donation should be organized, targeting the youth, motivating them to become regular voluntary blood donors should be conducted. Efforts must be undertaken to bring the knowledge and positive attitude towards students into application in future to achieve the goal of 100% VBD.

**Key Words:** Knowledge, Attitude and Practices, Voluntary blood donation

## INTRODUCTION

Blood is vitally important for all living organism. Its importance is more felt in the

treatment of sick human for different conditions such as surgery, accident, delivery cases and treatment of different diseases. Till now there is no substitute for blood and

artificial blood is still in research laboratories. Blood transfusion is increasingly in use in medical science as it plays life-saving role in the treatment of thousands of patient daily.

Safe blood is blood that does not contain any viruses, parasites, drugs, alcohol, chemical substances, or other extraneous factors that might cause harm, danger or disease to the recipient. People who donate blood should be in good health and should not suffer or have suffered from any serious illnesses. The recipient should not be harmed by receiving blood; the donor should not be put at risk by giving blood. [1]

Blood transfusion is a core service within health care systems and individuals who donate their blood provide a unique contribution to the health and survival of others. Every country faces an ongoing challenge to collect sufficient blood from safe donors to meet national requirements. The donation of blood by voluntary non-remunerated blood donors is recognized as being crucial for the safety and sustainability of national blood supplies. [2]

The studies on voluntary blood donation are inadequate in Chitwan and in entire country. This study will explore present situation of knowledge, attitude and practice on voluntary blood donation of bachelor level students.

Eligibility for blood donation - Nepal Red Cross Society. [3]

Age: 18 – 60 years of both male and female can donate blood.

Weight: More than 45 kg can donate blood.

Hemoglobin:  $\geq 12$  g/ dl can donate blood.

Blood pressure: 100/70 – 160/95 mm Hg can donate blood.

Person suffering from epilepsy, tuberculosis, diabetes, hypertension, and HIV/AIDS infected person should not donate blood. Menstrual woman, lactating mother and pregnant women should donate. Unsafe sex and multi sex partner having people should not donate blood. Substance and drug abused people should not donate blood.

## MATERIAL AND METHODS

### Study Area

The study was conducted in Shree Medical and Technical College, Bharatpur, Chitwan District.

### Study Design

The study design was Descriptive cross sectional study.

### Study Population

Study population was bachelor level students of Shree Medical and Technical College, Chitwan.

### Sample Size ( $n_0$ )

$$N_0 = \frac{Z^2 \times P \times Q}{d^2}$$
$$n = \frac{1 + \frac{n_0}{N}}{1}$$

Where,

n = required sample size.

z = 1.96 for 95% confidence level.

p = proportion of KAP of students to be 0.18

d = precision or error allowed in the study = 0.05.

q = (1-p).

N = total bachelor students enrolled in Shree Medical and Technical College.

$$= \frac{(1.96)^2 \times 0.19 \times 0.81}{(0.05)^2}$$

$$= 152 + 10\% \text{ of } 152$$

$$= 167$$

$$= \frac{236}{1 + 236}$$

$$= 431$$

Therefore, the total numbers of sample were 167.

Total no. of students by faculty:

- B.N = 96
- BSc. Nursing = 66
- B. Pharmacy = 134
- BPH = 135

Sample from each faculty:

For B.N  
 $= 167 \times 96 / 431$   
 $= 36$

For B. Pharmacy  
 $= 167 \times 134 / 431$   
 $= 51$

For BSc. Nursing  
 $= 167 \times 66 / 431$   
 $= 27$

For BPH  
 $= 167 \times 135 / 431$   
 $= 53$

### Sampling Technique

Shree Medical and Technical College was chosen purposively. Number of the participants was chosen proportionally through college attendance register using stratified simple random sampling.

### Inclusion Criteria

Students who study in bachelor level will be included in the study.

### Exclusion Criteria

Those who do not give informed consent.

## RESULTS

Out of 167 respondents, majority number of students 82 (49.1%) were below or equal to 23 years of age group, 102 (61.1%) were female and 65 (38.9%) were male.

About 53 (31.7%) student were from Bachelor in Public Health, Bachelor in Nursing and B.Sc. Nursing 51 (30.5%), 36 (21.6%) and 27 (16.2%).

**Table 1. Distribution of Knowledge on Criteria of Voluntary Blood Donation (n=167)**

Characteristics	Frequency	Percent
<b>Interval of blood donation</b>		
Every month	1	0.6
Every 3-4 months	107	64.1
Every 6 months	57	34.1
Every year	2	1.2
<b>Minimum weight for blood donation</b>		
40 kg	25	15
45 kg	72	43.1
50 kg	53	31.7
55 kg	17	10.2
<b>Minimum age for blood donation</b>		
16 year of age	11	6.6
18 year of age	94	56.3
20 year of age	60	39.9
22 year of age	2	1.2
<b>Minimum Hb level for blood donation</b>		
10 g/dl	15	8.9
11 g/dl	40	23.8
12 g/dl	88	52.7
13 g/dl	24	14.6
<b>Quantity of blood removed</b>		
150-250 ml	66	3.6
250-350 ml	77	46.1
350-450 ml	62	37.1
450-500 ml	22	13.2

Table 1. Most of the respondents told that, time interval of blood donation is at 3 to 4 months of interval. 43.1% of the respondents said the minimum weight for blood donation

should be 45 kg. Whereas the minimum age for blood donation is 18 years of age (56.3%).

Regarding hemoglobin level for blood donation, only 52.7% of the respondents knew correct hemoglobin level (12 g/ dl) for donate blood. Just 46.1% said 250 ml -350 ml blood is removed during blood donation where as 37.1% said 350 ml – 450 ml blood is removed in blood donation.

**Table 2. Distribution of knowledge of suffering from different problems during voluntary blood donation (n=167)**

Characteristics	Frequency	Percent
<b>Suffering from HIV / AIDS</b>		
Yes	119	71.3
No	41	24.6
Don't know	7	4.2
<b>Suffering from infectious disease</b>		
Yes	114	68.3
No	37	22.2
Don't know	16	9.6
<b>Suffering from bleeding disorder</b>		
Yes	61	36.5
No	57	34.1
Don't know	49	29.3
<b>Suffering from anemia</b>		
Yes	103	61.7
No	32	19.2
Don't know	32	19.2
<b>Suffering from mental disturbances</b>		
Yes	48	28.9
No	112	67.1
Don't know	7	4.2

Table 2 showed that 71.3% said there is risk of suffering from HIV / ADIS during blood donation while one quarter (24.6%) said HIV / AIDS is not contracted during blood donation. Regarding infectious disease, 68.3% of the respondents said there is risk to a donor of suffer from infectious disease. Almost 36.5% respondents said there is likelihood of suffering from bleeding disorder while almost similar (34.1%) respondents said there is no risk of suffering from bleeding disorder. Considering anemia,

61.7% said there is risk of suffering from anemia but 19.2% said there is no risk of suffering from anemia. Likewise, 28.9% said risk of mental disturbance but 67.1% of the respondents said there is no risk of mental disturbance.

Out of 167 respondents, 81.4% of the respondents agree to the statement that they intend to donate blood within 6 months. All respondents (100%) agreed to if they donate blood they will be saving lives. Only 10.8% agreed to the statement if they donate blood they will feel pain whereas 61.7% disagreed to the statement. Majority (90.4%) of the respondents disagreed to the statement if they would be more likely to donate blood, if they were paid to do so.

Almost one fifth (18.6%) agreed to the statement only physically strong people can donate blood but 54.5% disagreed to the same statement. Only 15% of the respondents agreed with the statement that blood should be collected by voluntarily but almost half of the respondents (49.1%) disagreed the same statement. Nearly one fourth (24.6%) of the respondents agreed to statement, blood donation is extremely safe and 34.7% disagreed to the statement while 40.7% were neutral. 93.4% of the respondent agreed to someday I need blood transfusion. 55.7% agreed to blood donation helps in blood purification while 9.6% disagreed and 34.7% were neutral to the same statement as shown in table 3. 38.9% respondents had poor knowledge regarding voluntary blood donation and 61.1% of the respondents had good knowledge and mean knowledge 56.17% with standard deviation 11.39 as shown in table 4.

**Table 3. Distribution of Attitude on Voluntary Blood Donation (n=167)**

Characteristics	Frequency	Percent
<b>Intend to donate blood within 6 months</b>		
Agree	136	81.4
Neutral	27	16.2
Disagree	4	2.4
<b>Donating blood is noble act</b>		
Agree	145	86.8
Neutral	15	9
Disagree	7	4.2
<b>If I donate blood, I will be saving lives</b>		
Agree	167	100
Neutral	-	-
Disagree	-	-
<b>If I donate blood, I will feel pain</b>		
Agree	18	10.8
Neutral	46	27.5
Disagree	103	61.7
<b>I would be more likely to donate blood, if I were to paid to do so</b>		
Agree	6	3.6
Neutral	10	6
Disagree	151	90.4
<b>Only physically strong people can donate blood</b>		
Agree	31	18.6
Neutral	45	26.9
Disagree	91	54.5
<b>Blood should be collected only from Voluntary Donors</b>		
Agree	25	15
Neutral	60	35.9
Disagree	82	49.1
<b>Blood donation is extremely safe</b>		
Agree	41	24.6
Neutral	68	40.7
Disagree	58	34.7
<b>Someday I need blood transfusion</b>		
Agree	156	93.4
Neutral	11	6.6
Disagree	-	-
<b>Blood donation helps in blood purification</b>		
Agree	93	55.7
Neutral	58	34.7
Disagree	16	9.6

**Table 4. Distribution of category of Knowledge of Voluntary Blood Donation (n=167)**

Characteristics	Frequency	Percentage
Poor	65	38.9
Good	102	61.1
<b>Mean % (SD) 56.17 (11.39)</b>		

Table 5. Shows, out of the total 167 respondents, only 23.4% had donated blood before and just over than three quarters (76.65) had not donated blood yet. Most (56.4%) of the respondents said feeling social responsibility and 38.5% said being in donor group (peer) as the reason to donate blood. Out of 39 donors, only 10.3% experienced adverse effect while donating blood. Just over half (51.3%) had donated blood once while 23.1% had donated twice before. 35.9% of donors were planning to be regular donor. Only 23.1% of donors plan ahead of blood donation. Regarding reasons not to donate blood, 35.2% said due to fear of weakness and venous puncture whereas 32% said due to medically unfit to donate blood. About 97% of the respondents said they had not received blood transfusion yet. Only one third (34.1%) of respondents were participated in organizing blood donation camp. Concerning on parent's involvement in blood donation, only 43.7 % of the respondents' parents had donated blood. Table 6. Shows that those respondents who had work experience had significantly low level of knowledge than who did not have work experience (p=0.025). There is association with faculties of the respondents as the level of knowledge among the nursing was significantly higher (88.9%) followed by BPH (66%) than others (p = 0.02).

**Table 5. Distribution of Practice on Voluntary Blood Donation (n=167)**

Characteristics	Frequency	Percentage
<b>Blood donated before</b>		
Yes	39	23.4
No	128	76.6
<b>Reasons to donate blood</b>		
Feeling social responsibility	22	56.4
As an experience	2	5.1
Being in a group of donor (peer)	15	38.5
<b>Adverse effect while donating blood</b>		
Yes	4	10.3
No	35	89.7
<b>Total frequency of blood donation by donors</b>		
One time	20	51.3
Two times	9	23.1
Three times	5	12.8
Four or more times	5	12.8
<b>Planning to be regular donor</b>		
Yes	14	35.9
No	25	64.1
<b>Plan ahead of blood donation</b>		
Yes	9	23.1
No	30	76.9
<b>Reasons not to donate blood</b>		
Medically unfit to donate	41	32
Parent do not allow	18	14.1
Fear of weakness and venous puncture	45	35.2
Do not like the idea for removing blood	19	14.8
Lack of opportunity	4	3.1
Lack of time	1	0.8
<b>Ever received blood</b>		
Yes	5	3
No	162	97
<b>Participation in organizing a blood donation camp</b>		
Yes	57	34.1
No	110	65.9
<b>Parents have donated or donating blood</b>		
Yes	73	43.7
No	42	25.1
Don't know	52	31.1

**Table 6 : Socio-Demographic Characteristics Associated with Level of Knowledge of Blood Donation.**

Characteristics	Level of Knowledge n (%)		Chi-square value	p-value
	Poor	Good		
<b>Sex</b>				
Male	29	36	1.451	<b>0.228</b>
Female	(44.6)	(55.4)		
	36	66		
	(35.3)	(64.7)		
<b>Work Experience</b>				
Yes	35	37(51.4)	4.998	<b>0.025</b>
	(48.6)			
No	30	65 (68.4)		
	(31.6)			
<b>Faculty</b>				
BPH	18	35	14.592	<b>0.02</b>
	(34)	(66)		
B. Pharma	27	24		
	(52.9)	(47.1)		
BSc Nursing	3	24		
	(11.1)	(88.9)		
BN	17	19		
	(42.2)	(52.8)		
<b>Marital status</b>				
Married	18	19	1.892	<b>0.169</b>
	(48.6)	(51.4)		
Unmarried	47	83		
	(36.2)	(63.8)		
<b>Ethnicity</b>				
Brahmin	22	46	4.478	<b>0.345</b>
	(32.4)	(67.6)		
Chettri	19	31 (62)		
	(38)			
Newar	9 (60)	6 (40)		
	(46.2)	(53.8)		
Magar	6	7		
	(42.9)	(57.1)		
Others	9	12		

There was no significant association found with other socio - demographic characteristics and level of knowledge as shown in table 6.

## DISCUSSION

Majority of the respondents were up to 23 years of age and the mean age of the respondents was 23.95 which shows similar finding of Ogunbona OB et al study done in Nigeria where the respondents mean was 22 years [4] and the current study also somehow supports the finding of research done in Nepal by Amatya M in similar topic which showed mean age 21.16 years [5].

In this study there were 38.9% male respondents and 61.1% were female respondents which favors the findings of the research done in India where there were 37.3% male respondents and 62.7% female respondents [6] and the current research somehow backup the finding of Nepalese study where the male and female respondents were 41.2% and 58.8% respectively [7].

This study stated that, 92.8% respondents had heard about voluntary blood donation which is similar findings show that only 97.4% of the respondents knew the correct meaning of voluntary blood donation which is low in term of number as compared with a Jamaican study which showed 100% of the respondents knew the correct meaning of voluntary blood donation. [8]

This study showed, 71.3% of respondents are aware of risk of HIV / AIDS through blood transfusion and 68.3% are aware of contracting infectious disease via blood donation. A Rajkot study showed, 96% respondents were aware of transmitting infectious diseases [9].

## CONCLUSION

Being knowledgeable and having positive attitude regarding voluntary blood donation

does not transform into actual practice of blood donation. Therefore, specific recruitment and motivational campaigns are needed targeting the younger adults. Our efforts should be towards bringing the knowledge, awareness and the positive attitude of the students into application by motivating them and creating opportunities for them to become regular voluntary blood donor.

## ACKNOWLEDGEMENT

I am grateful to the faculties members and students of School of Public Health and Community Medicine, CMC, Bharatpur and all the participants of Shree Medical and Technical College, Bharatpur, Chitwan.

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