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Knowledge and Attitude towards Blood Donations among Bachelor Level Students of Selected College in Bharatpur, Chitwan

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ABSTRACT

Background: Blood donation involves the collection, testing, preparation, and storage of blood and its components. It is crucial to the healthcare system, enabling many medical procedures. This study " aimed to assess the knowledge and attitudes of bachelor-level students at Saptagandaki Multiple Campus in Bharatpur-10, Chitwan.

Method: A Descriptive Cross-Sectional research design was used among 109 students of Saptagandaki Multiple Campus, Bharatpur. A non-probability purposive sampling technique was used to select samples. Data collection was done from July 16 to July 26, 2024, by using structured self-administered questionnaire and analyzed using Statistical Package for the Social Science (SPSS) version 20 with descriptive and inferential statistics.

Result: Study finding revealed that among 109 students, mean age of students was 20.3 years. More than half (62.4%) were above 20 years of age. Around two-third (64.2%) of the students were female. Over half (55%) of the students had poor knowledge, 39.4% of the students had moderate level Knowledge and only few (5.5%) of the students had good knowledge and more than half (53.2%) of the students had a positive attitude towards blood donation. Blood donation knowledge was significantly associated with sex of bachelor level student.

Conclusion: This study concluded that only few of the students have good knowledge and more than half of students have positive attitude regarding blood donation. Thus, proper educational programs should be conducted to increase awareness regarding blood donation and convert positive attitude into actual performance.

Key words: attitude; bachelor level students; blood donation; knowledge.

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INTRODUCTION

The gift of life, which is the most valuable present anyone can give to another, is blood. Donating blood involves the collection, testing, preparation, and storage of blood.[1] High-income countries have a median blood donation rate of 31.5 per 1,000 people, whereas upper-middle-income countries have a rate of 16.4, lower-middle-income countries have 6.6, and low-income countries have just 5.0 per 1,000 people. In low-income countries, the most common reasons for not donating blood are a lack of awareness and concerns about potential health problems.[2] A study conducted in Bangladesh revealed that the primary reasons for not donating blood was lack of knowledge (40%), lack of opportunity (20%), belief that it was harmful to health (21%), fear of needles (16%), and absence of financial benefit (6%). Notably, over 67% were unaware of their blood group. While participants generally had poor knowledge of eligibility criteria, they exhibited a positive attitude towards blood donation overall.[3] A study conducted among 227 voluntary donors during six different Blood Donation Campaigns at the Nepal Red Cross Society Central Blood Transfusion Service Centre revealed that 5% of the donors had adequate knowledge, and 72% demonstrated a positive attitude towards blood donation. The most common reasons for poor knowledge about blood donation practices were lack of time, young age, low blood pressure, and lack of interest or opportunity.[4] Thus, this study is conducted to determine knowledge and attitude about blood donation among bachelor level students

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of Multiple Campus Bharatpur, Chitwan.

METHODS

A Descriptive Cross-Sectional research design was used among 109 students of Saptagandaki Multiple Campus, Bharatpur. A non-probability purposive sampling technique was used to select sample. Data collection was done from July 16 to July 26, 2024, by using structured self-administered questionnaire. The self developed instrument was validated by consulting subject experts. The reliability of the instrument was ensured by pretesting 10% of total sample. Necessary modifications were made after pre-testing as needed. Ethical clearance was taken from Institutional Research Committee (Ref. No. 080/81-BNS-010) Bharatpur Hospital. Consent was obtained from the study population. Both male and female of age group 18-26 years. Students willing to participate in the study were included in the study. Students who were available in the class during the data collection period were also included. Bachelor-level students who were not available, those who were sick, and those not willing to participate in the study were excluded from the study. The data collected was checked, reviewed and organized for completeness. Then all the data were analyzed in SPSS 20.

RESULTS

Table 1 represented that out of 109 students, more than half (62.4%) of the students were above 20 years of age, with a mean age of 20.3years. Regarding sex, more than half (64.2%) of the students were female, while the remaining 35.8% were male. In terms of ethnicity, nearly half (47.6%) of the students were Brahmin, and the least represented group was Dalit (3.8%). Concerning religion, almost all (97%) of the students followed the Hindu religion, with only a few (1%) followed Christianity and Islam. More than half (63%) of the students' families encouraged them to donate blood. A majority (80.7%) of the students had not attended any awareness programs about blood donation. Likewise, more than half (79.8%) of the students encouraged their relatives and friends to donate blood voluntarily.

Table 1. Students' Socio-demographic Information. (n=109)

Variables	Frequency (%)
Age (in completed years)	
< 20	41(37.6)
≥20	68(62.4)
Mean Age : 20.3 years	
Sex	
Male	39(35.8)
Female	70(64.2)
Ethnicity	
Brahmin	50(47.6)
Chhetri	13(12.4)
Janajati	27(25.7)
Dalit	4(3.8)
Others*	11(10.5)
Religion	
Hindu	97(89.0)
Buddhist	10(9.2)
Christian	1(0.9)
Islam	1(0.9)
Family encourages to donate blood	
Yes	69(63.3)
No	40(36.7)
Blood donation related awareness /training program taken	
Yes	21(19.3)
No	88(80.7)
Encourage relatives /friends to donate their blood voluntarily	
Yes	87(79.8)
No	22(20.2)

**Others include Chaudhary, Thakuri and Rajbanshi*

Table 2 illustrates that out of the total students, around three-fourths (76.1%) did not have any previous practice of blood donation. Regarding the time of blood donation, 12.9% of the students donated blood two or three times, and 10.1% of the students donated blood once. Regarding the reason for not donating blood, 22.9% of the students had a medical condition, while other reasons included not being physically fit (13.75%), low hemoglobin (11.91%), low weight (10.08%), and fear of pain and weakness (11.0%). Concerning interest in donating blood, around two-thirds (68.8%) of the students had an interest in donating blood. Regarding the reasons for having

an interest in donating blood, 23.9% wanted to save lives, while other reasons included helping needy people in emergencies (19.26%), gaining satisfaction from helping needy people (13.76%), and social work (11.8%). More than half (67.9%) of the students were not involved in any social organization. More than half (66.0%) of students were aware of their blood group.

Table 2. Students' personal information regarding blood donation. (n=109)	
Variables	**Frequency (%)**
Previous practice of Blood Dilatation	
Yes	26(23.9)
No	83(76.1)
If yes, frequency of blood donation (n=26)	
1-2 times	14(12.8)
3-4 times	8(7.4)
≥5times	4(3.7)
If no, reason for not donating blood (n=83)	
Medical condition	25(22.9)
Fear of pain and weakness	12(11.0)
Low HB	13(11.91)
Low weight	11(10.08)
Not fit physically	15(13.75)
Not getting opportunity	7(4.41)
Interested to donate blood	
Yes	75(68.8)
No	34(31.2)
If yes(n=75)	
To get satisfaction by helping needy people	15(13.76)
To Help needy people in emergency	21(19.26)
To save life	26(23.9)
Social work	13(11.8)
Involvement in any social organization	
Yes	35(32.1)
No	74(67.9)
Distribution of Blood Group of Respondents	
Known of self-Blood Group	72(66.0)
Not known of Self Blood Group	37(34.0)

Table 3 illustrates that out of total students, majority (84.4%) of the students had knowledge about the meaning of blood donation. Regarding the types of blood group majority (86.2%) of the students answered correctly. Maximum (88.1%) of the students correctly recognized blood group O as the universal donor. Similarly, around two third (61.5%) of students correctly answered blood group AB is the universal receiver. The majority (83.5%) of the students answered that the standard age for blood donation is 18-60 years. Similarly, more than half (67%) of the students stated that 45kg is the minimum weight for blood donation. Around half (55%) of the students correctly answered that hemoglobin levels should be more than 12gm/dl to donate blood. More than half (60.6%) of the students answered that the accepted blood pressure range for donation is minimum 110/70 - maximum 160/90 mmHg. Regarding the appropriate timing for females to donate blood after menstruation, around three-fourths (73.4%) of the students answered correctly. More than half (66.1%) agreed that an eligible individual can donate blood every 3 months. Similarly, almost all (96.3%) students correctly answered that a fit and healthy person can donate blood.

Table 3. Students' knowledge regarding blood donation. (n=109)	
Variables	**Correct response Frequency (%)**
Meaning of blood Donation is giving blood voluntarily.	92(84.4)
A, B, AB and O are the types of blood group.	94(86.2)
Blood Group O is the Universal Donor.	96(88.1)
Blood Group AB is the Universal Receiver.	67(61.5)
Standard age for Blood Donation is 18-60 years.	91(83.5)
Minimum weight for Blood Donation is 45 kg.	73(67.0)
To donate blood, hemoglobin should be more than 12gm/dl.	60(55.0)
Blood Pressure accepted for blood donation is Minimum 110/70-maximum160/90mmhg.	66(60.6)
Appropriate day for females to donate blood after menstruation is 7 days.	80(73.4)
An eligible individual can donate blood in every 3months.	72(66.1)
A fit and healthy person can donate blood.	105(96.3)

Table 4 reveals that out of the total students, only a few (6.4%) of the students agreed that an individual can

donate 350-450 ml of blood at a time. Regarding the correct place to donate blood, more than half (67.0%) of the students answered correctly. Approximately two-thirds (66.1%) of the students stated that the duration of the blood donation procedure takes 10-15 minutes. Similarly, around three-fourths (75.2%) of the students agreed that a person can resume normal daily activities shortly after donating blood. Around two-thirds (66.1%) of the students correctly answered that one donation can potentially save three lives. Regarding health benefits of blood donation, three-fourths (75.2%) of the students understood that it reduces cardiovascular risk. similarly, a majority (82.6%) of the students recognized feeling dizzy or lightheaded as an immediate side effect of blood donation. Concerning the condition that permanently disqualify a person from donating blood, almost all (92.7%) of the students answered correctly. Regarding the condition that disqualify a person from donating blood majority (86.2%) of the students correctly answered cancer. However, a minority (27.5%) of the students answered that having a medical surgery within the last 2 years disqualified someone from donating blood.

Table 4. Students' knowledge on procedure, benefits, side effects and contraindication of blood donation. (n=109)

Variables	Correct response Frequency (%)
Procedure	
Amount of blood that individual can donate at a time is 350-450 ml.	7(6.4)
Place to donate blood is Blood Bank.	73(67.0)
Duration of blood donation procedure is 10-15 minutes.	72(66.1)
Person can resume normal daily activities after some minutes of blood donation	82(75.2)
Benefits	
3 lives are saved by one Blood Donation.	72(66.1)
Health benefit of blood donation is that it reduces cardiovascular risk.	82(75.2)
Side effects	
Immediate side effects of blood donation are Feeling dizzy and lightheaded.	90(82.6)
Contraindication	
Person with HIV/AIDS cannot donate blood permanently.	101(92.7)
Conditions that disqualify a person from donating blood*	
Diabetes Mellitus	70(64.2)
Had a medical surgery for 2 years	30(27.5)
Having recent use of drugs or strong medicine	74(67.9)
Cancer	94(86.2)
Heart disease	77(70.6)
Hepatitis B or C	45(41.3)
Hemophilia and Thalassemia	35(32.1)

**Multiple response*

Table 5 reveals that out of total students, the mean score of total attitude related question is 3. Among all statement students obtained score was more than mean score so respondents had good attitude regarding the positive statement. The students obtain high mean score on statement Blood donation is the essential and integral part of health care system (Mean ±SD: 4.11±0.85) and the Blood donation is a lifesaving work (Mean ±SD: 4.17±1.16).

Table 6 shows that out of total students, the mean score of total attitude related question is 3. Among all statement students obtained score was more than mean score so students had good attitude regarding the negative statement. The students obtain high mean score on statement Donating blood makes us suffer from HIV/AIDS (mean score :4.08) and Donating blood more than once is bad for health (mean score:4.00).

Table 7 demonstrate that among 20 knowledge related question the possible optimum score is 26. Only few (5.5%) of the students had good knowledge, followed by 39.4% of the students had moderate knowledge and more than half (55%) of the students had poor knowledge towards Blood Donation. Likewise, mean score of knowledge was 58.04. Most of the students had poor knowledge towards Blood Donation.

Table 8 shows that among 109 students, out of total 20 attitude related statements maximum score is 100 where, more than half obtain score above the mean score (73.72±7.38). furthermore, 53.2%have positive attitude towards blood donation whereas nearly half (46.8%) of the students have shown negative attitude towards blood donation.

Table 5. Attitude of students on positive statements regarding blood donation. (n=109)						
Statements	**SD n(%)**	**D n(%)**	**N n(%)**	**A n(%)**	**SA n(%)**	**Mean±SD**
Blood donation is the essential and integral part of health care system.	4(3.7)	6(5.5)	35(32.1)	50(45.9)	17(15.6)	4.11±0.85
Blood donation is a moral responsibility.	4(3.7)	7 (6.4)	25(22.9)	50(45.9)	23(21.1)	3.74±0.98
Blood donation is a lifesaving work.	9(8.3)	3(2.8)	3(2.8)	39(35.8)	55(50.5)	4.17±1.16
Person feels worthful and satisfied after donating blood.	1(9)	6(5.5)	35(32.1)	50(45.9)	17(15.6)	3.69±0.83
Willingness to donate blood to unknown person if asked.	7(6.4)	23(21.1)	44(40.4)	28(25.7)	7(6.4)	3.04±0.99
Blood donors are true heroes.	6(5.5)	2(1.8)	16(14.7)	52(47.7)	33(30.3)	3.95±1.01
A healthy person can donate blood four times a year.	9(8.3)	2(1.8)	9(8.3)	56(51.4)	33(30.3)	3.93±1.09
Blood donation does not cause any harm to our health.	2(1.8)	8(7.3)	31(28.4)	48(44)	20(18.3)	3.69±0.91
Blood donation is a safe process.	-	19(17.4)	19(17.4)	62(56.9)	23(21.1)	3.94±0.75
Best way to donate blood is voluntary and nonremunerated.	2(1.8)	5(4.6)	42(38.5)	44(40.4)	16(14.7)	3.61±0.85

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

Table 6. Attitude of students on negative statements regarding blood donation. (n=109)						
Statements	**SD n(%)**	**D n(%)**	**N n(%)**	**A n(%)**	**SA n(%)**	**Mean±S.D**
Blood donation decrease the blood in our body	25(22.9)	34(31.2)	27(24.8)	18(16.5)	5(4.6)	3.51±1.15
Donating blood is very painful	10(9.2)	42(38.5)	38(34.9)	14(12.8)	5(4.6)	3.34±.0.97
Blood donation makes us weak	11(10.1)	33(30.3)	49(45)	13(11.9)	3(2.8)	3.33±.0.91
Blood donation leads to anemia	21(19.3)	46(42.2)	32(29.4)	8(7.3)	2(1.8)	3.69±0.92
Donating blood makes us suffer from HIV/AIDS	49(45)	36(33)	12(11)	8(7.3)	4(3.7)	4.08±1.08
Regular Blood Donation leads to obesity	8(7.3)	40(36.7)	36(33)	22(20.2)	3(2.8)	3.25±.0.95
Donating blood decrease the immune system of the body	16(14.7)	42(38.5)	39(35.8)	11(10.1)	1(9)	3.55±.0.89
People may become infected because of needle insertion	18(16.5)	33(30.3)	38(34.9)	17(15.6)	3(2.8)	3.42±1.03
Donating blood more than once is bad for health	38(34.9)	45(41.3)	17(15.6)	7(6.4)	2(1.8)	4.00±0.96
Blood should be donated only in emergency	14(12.8)	57(52.3)	19(17.4)	15(13.8)	4(3.7)	3.56±1.00

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

Table 7. Students' level of knowledge towards blood donation. (n=109)	
Level of knowledge	**Frequency (%)**
Good (80-100%)	6(5.5)
Moderate (60-79%)	43(39.4)
Poor (<60%)	60(55)
Mean Score ± SD=58.04±14.09	

Possible score :0-26

Table 8. Students' level of attitude towards blood donation. (n=109)	
Level of Attitude	**Frequency (%)**
Positive Attitude	58(53.2)
Negative Attitude	51(46.8)
Mean score ± SD =73.72±7.38	

Possible score :20-100

Table 9 indicates that out of 109 students, Knowledge of Blood Donation is statistically significant with sex (p=0.000).

DISCUSSION

The study finding revealed that around two- third (62.4%) of the students were found age group above 20 years with the mean age 20.3 years which is in the line with the study conducted by [5] more than half (57.1%) of the students were above 20 years with the mean age 20.5 years .Regarding the sex ,around two-third (64.2%) of the students were female which is contradictory to the finding conducted in western Nepal college showed that more than half (56.6%) of the students were male. The variation in finding may be due to difference in setting .Concerning ethnicity ,nearly half (47.6%) of the students were Brahmin ,25.7% were Jana Jati ,whereas least (3.8%) were Dalit which is in

Table 9. Association between level of knowledge and socio-demographic variables. (n=109)					
Variables	**Poor knowledge n(%)**	**Moderate knowledge n(%)**	**Good knowledge n(%)**	**χ^2 value**	**p-value**
Age*					
< 20	26 (63.4)	13 (31.7	2(4.9)	1.898	0.418
≥ 20	34(50.0)	30(44.1)	4(5.9)		
Sex*					
Male	12(30.8)	24(61.5)	3(7.7)	14.67	**<0.000****
Female	48(68.6)	19(27.1)	3(4.3)		
Ethnicity*					
Brahmin	30(56.6)	20(37.7%)	3(5.7%)	2.156	0.708
Chhetri	5(38.5)	7(53.8)	1(7.7)		
Others	25(58.1)	16(37.2)	2(4.7)		
Previous experience of blood donation*					
Yes	12(46.2%)	12(46.2)	2(7.7)	1.457	0.535
No	48(57.8)	31(37.3)	4(4.8)		

*Note: *p-value computed from Fisher's Exact Test, **p=<0.05*

consistent to study conducted by[6] showed two-third (62.70 %) of respondents were Brahmin , 20.90% were Jana Jati and 6.4% were Dalit. Regarding the religion, majority (89.0%) of students were Hindu and least(0.9%) were Christian which is similar with the study conducted in Kathmandu showed that majority (85.45%) of the respondent were Hindu, 7.20% were Christian.[6] Around two-third(68.8%) of the students were interested to donate blood which is similar to the findings showed in the study conducted among Undergraduate Health Science Students at Northwest Ethiopia revealed three-fourth (76.4%) oof the students were interested to donate blood .likewise, three-fourth (76.1%) of the students had never donated blood which was consistent with the finding of the study conducted in among Undergraduate Health Science Students at Northwest Ethiopia revealed that most (87.2%)of the respondents had never donated blood.[7] Among 109 students who participated in the study , more than half (55%) of the students had poor knowledge ,followed by 39.4% of the students had moderate level Knowledge and only few (5.5%) of the students had good knowledge towards Blood Donation which is similar to the study conducted by [4] showed that approximately 49% had poor knowledge, followed by 46% at a moderate level, and less than one-tenth possessed good knowledge (5%) about blood and blood donation. Similarly, the finding is contrasted to the conducted among Bachelor Level Students in Kathmandu shows that 4.5% of the respondents had good knowledge, 63.65% had average knowledge, and 31.2% had poor knowledge. [6] The differences in findings may result from variations in sampling methods, health education effectiveness, and community engagement in blood donation awareness between Chitwan and Kathmandu. The study shows that sex (p=0.000) was found statistically significant with level of knowledge regarding blood donation which is supported by[4] showed that sex (p=0.04), history of self-blood donation (p=0.03) and history of blood requirement in the family (p=0.01) were found statistically significant with level of knowledge regarding blood transfusion.[5]

CONCLUSIONS

The study concludes that only a small proportion of bachelor-level students in general colleges demonstrated good knowledge about blood donation, while over half exhibited poor knowledge. Additionally, more than half of the students displayed a positive attitude, whereas nearly half held a negative attitude toward blood donation. To address this, implementing educational programs, awareness

campaigns, and organizing blood donation camps is essential to enhance awareness, shift negative attitudes to positive ones, and encourage active participation in blood donation.

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