

Original Article

Evaluation of Knowledge, Attitude and Practice regarding Blood Donation among Bachelor Level Students in Kathmandu

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ABSTRACT

Background and Objectives: The practice of blood donation is largely dependent on one's level of education and attitude. Over 13 thousand blood facilities in 169 countries report collecting 106 million blood donations worldwide, totaling 118.5 million. However, there is still no equilibrium between blood demand and supply. Every year, in underdeveloped nations like Nepal, the need for safe blood is vital. Thus, this research was carried out to examine knowledge, practice, and attitude of blood donation among bachelor level Students.

Material and Methods: This study used a systematic approach to analyze knowledge, attitudes, and practices towards blood donation among undergraduate students. A descriptive cross-sectional analysis was conducted utilizing stratified random samples on 110 samples. The pretest self-administered questionnaire was employed, which included both structured and semi-structured questions ($r=0.70$). The respondents included first- and second-year

Bachelor of Social Work and Business Studies students, as well as first-year Bachelor of Computer Administration students. The data was analyzed using descriptive and inferential statistics (i.e., chi-square and spearman's test) in SPSS 16 version.

Results: This study found that 4.5% of the respondents had good knowledge, 63.7% had average knowledge, and 31.2% had poor knowledge. Among the respondents 23.60% had practice of blood donation while 76.10 % have not performed blood donation. The study also revealed 21.10% have negative attitude and 78.20% have positive attitude. There is a positive relationship between knowledge and attitude as Spearman's coefficient value $r = 0.150$, and $p = 0.117$ ($p > 0.05$)

Conclusion: The study concludes the highest number of female respondents and a Hindu majority. Despite having a positive attitude, they have not practiced blood donation indicating a need to increase reinforcement and motivation among youths to bring positive changes in blood donation.

Keywords: Attitude, blood donation, knowledge, practice

INTRODUCTION

Blood is a type of bodily fluid that delivers nutrients and oxygen to cells even while removing metabolic waste away from them. Its transfusion from generous donors is an essential aspect of modern health treatment, saving lives and improving health [1,2]. The need for blood and blood products is rising in all parts of the world. Globally, around 92 million unit blood donations are collected annually from all types of blood donors [3]. Dr. Karl Landsteiner made a scientific breakthrough in the early twentieth century

when he discovered the ABO blood group system, which was critical in blood donation. In 1973, the first blood bank storage unit was built in Chicago. As the First World War came to a close, blood transfusions were widely acknowledged as the treatment of choice for severe blood loss. Blood safety is critical for improving health care and limiting infectious disease spread. Blood transfusion saves many lives every year, but three factors remain a key constraint in the poor world: blood quality, quantity, and safety [2].

Blood transfusion is an important part of medical treatment. It helps save millions of lives each year in normal and emergency situations, as well as assisting in difficult medical and surgical conditions and increasing the quality of life of people suffering from various acute and chronic illnesses. The timely availability of safe blood is critical in all health institutions; but, in many poor nations, this is an issue, and the gap between demand and supply is expanding. The national blood need of a country is determined by the capability of the health-care system and its population coverage. Blood demand continues to rise in modern health care systems, such as those seen in industrialized countries, to support increasingly sophisticated medical procedures [5].

The knowledge, attitude, and practices (KAP) of bachelor level students concerning blood donation have a significant positive impact on our community, either directly or indirectly. They have a vital role in the recruitment of blood donors, as well as their understanding of blood donation, attitudes toward promoting voluntary blood donation, and donation rates. Although the sufficient knowledge about blood donation is estimated to be 60% in developing countries; blood donation rate in low-income countries is far less than that in middle- and high-income countries [5,6]. Blood donation rate was less than satisfactory due to misconceptions, poor knowledge and

unfavorable attitude toward donation [7]. In addition, sex, age and educational status were found as predictors of voluntary blood donation [7-9]. Young people are an important proportion of the population, and they are the hope for a safe blood supply in the present and future [10, 11]. Students who are healthy, active, dynamic, resourceful and receptive who may constitute a greater proportion to blood donation; and they have to be encouraged, inspired and motivated to donate blood voluntarily. Therefore, the objective of this study was conducted to analyze knowledge, attitude, and practice regarding blood donation undergraduate students.

MATERIALS AND METHODS

The study employed a descriptive cross-sectional research approach at Ed-Mark College in Kalanki, Kathmandu from July 2020 to December 2020. The study included 110 bachelor's level students. Pre tested self-administered semi structured and structured questionnaire was used. The reliability of instrument was maintained by split half method i.e. $r=0.70$. An appropriate, valid, and reliable tool was developed for data collection. After completing the data collection, the questionnaire was checked for completeness and sequential coding was done. Each item response then entered in SPSS 16 and analyzed using inferential statistics, i.e., chi-square test to determine the association between knowledge and selected variables. Spearman's correlation test was performed to find out the correlation between knowledge and attitude. Students having internet access and willing to participate were included while 4th and 3rd year students of BBS and BSW were excluded. A permission letter was obtained from Scheer Memorial Adventist Hospital college of Nursing and Institutional Review committee of Scheer memorial Adventist

hospital, Banepa, Kavre. Written permission was obtained from the College authority before collecting data.

RESULTS

Socio-demographic characteristics of Respondents:

The sociodemographic variables of this study revealed that female 55.50% respondent were greater than male 44.50 %. Mean age of the respondent was 20.20. Majority of the respondent was 19-21, 61.5% and minimum was 16-18 i.e 12.70%. Among the respondent 62.70 % were upper caste group, 20.90% were Janajatis and 11(10%) were Janajatis and 6.4% were Dalit. Regarding religion 85.45% of the respondent were Hindu, 7.20% were Buddhist and Christian. More than half i.e 68.18% were BBS and BSW was 27.27% and least was BCA 4.54%.Regarding Grade 1st year student was 55.45% and 44.54% were 2nd year. Among respondents, father 39.09% was involved in service 42.72 % was involved in business, 13.63 % was involved in labor and 4.54 % was involved in other. Regarding respondent mother 72.72% was involved in homemaker 13.63 % was involved in service 0.90% was involved in labor and 12.72% was involved in business profession. 68.18% were about their blood group where as 31.18% were not, among respondent who were aware of their blood group 28.0% are O+ve 13.33% are AB+ve 34.60% are B+ve and 24.0% are A+ve. 11.81 % of the respondent had enrolled in the organization and among enrollment in the organization 70% involved in health organization and 30% had family enrollment in health Organization. 60.0% respondent had known about blood donation from internet 35.45% from mass media 40.90% from the organization and 30.90% from the family member.

Figure 1 shows the distribution of respondents knowing the blood donation according to several sources of information. 60 % of respondents had known about blood donation from the internet, 35.5 % from mass media, 40.9 % from the organization, and 30.90% from the family member.

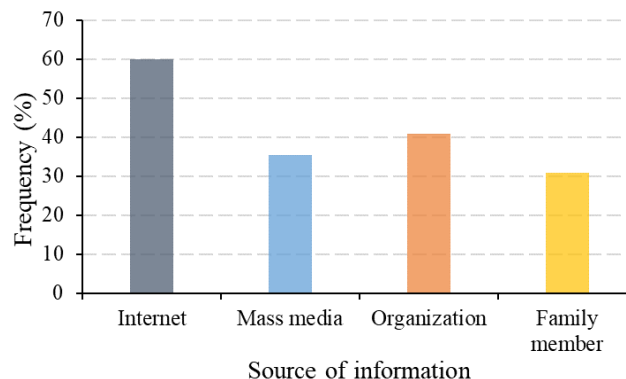


Figure 1: Distribution of respondents according to sources of information

Knowledge regarding blood donation:

Figure 2 shows the distribution of respondents overall knowledge regarding blood donation. 4.5% of the respondents had good knowledge, 63.65% had average knowledge, and 31.2% had poor knowledge.

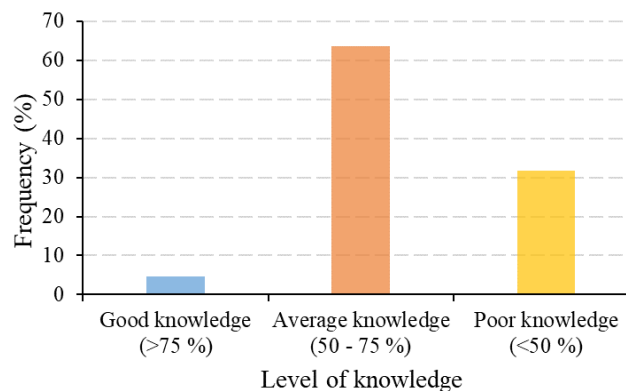


Figure 2: Distribution of respondents according to overall knowledge regarding blood donation

Practice of blood donation: Table 1 shows the distribution of respondents by the blood donation practice. 23.6 % of respondents have donated blood, while 76.10% have not. Among the blood donation practitioners, 50 % had donated the blood only once, 30.7% had donated twice, 7.7 % had donated three times, and the remaining 11.5% had donated four or greater times. Among blood donation practitioners, 26.8 % donated for relatives or friend needs, and 80.7 % donated voluntarily for service. On the other hand, among non-practitioner, 13.3 % didn't donate due to fear of the needle, 11.9 % because of their body weakness, 33.3% as they had no past approach to donate, 28.6% as they were unfit to donate, 7.1% as they unwell to donate, and 4.8% for other reasons. 28.3% of respondent fathers had donated blood, 16.7% by respondent mothers, 40% by respondent brothers, and 15% by respondent sisters, whereas 45.5 % had not practiced blood donation.

Attitude of blood donation: Tables 2-3 shows the distribution of respondents according to positive and negative attitudes regarding blood donation, respectively. Both tables illustrate the eight statements regarding positive and negative statements.

The study found that the most of the respondents agreed to a positive attitude and disagreed with a negative attitude. Overall, nearly a quadrant of the respondents (21.1 %) had a positive attitude, and the remaining three quadrants (78.2 %) of the respondents had a negative attitude

Table 1: Distribution of respondents by the blood donation practice

Variables	Frequency	Percentage
Donate blood		
Yes	26	23.63
One-time	13	50.0
Two-times	8	30.76
Three-times	2	7.69
Four times or more	3	11.53
No	84	76.10
If Yes*		
Relatives or friends need	6	26.08
Voluntary for service	20	80.76
If No*	84	
Fear of needle	11	13.09
Might body weakens	10	11.90
No any approach to donate	28	33.33
Unfit to donate	24	28.57
No will to donate	6	7.14
Might Gain weight	1	1.19
Others	4	4.76
Donate blood in future		
Yes	93	84.54
No	17	15.45

*Multiple Response

Table 2: Distribution of respondents according to positive attitude regarding blood donation

SN	Items	Scale frequency					Mean ± Standard deviation
		S/D	D	U	A	S/A	
1	Donating blood is a moral act.	3	3	10	29	65	4.37 ± 0.95
2	Blood donation can save a life.	4	3	2	15	86	4.60 ± 0.94
3	Blood donation is a safe process.	5	1	25	20	59	4.15 ± 1.09
4	Blood donation does not cause any harm to donor health.	12	12	20	29	37	3.61 ± 1.34
5	Visitors should be asked to donate blood in return as possible.	10	13	36	23	28	3.42 ± 1.24
6	Blood donation awareness should be increased.	7	4	7	22	70	4.31 ± 1.15
7	Youth is a role model for the practice of blood donation.	7	0	10	27	66	4.32 ± 1.08
8	Blood should not be sold.	35	14	15	9	37	2.99 ± 1.68

Table 3: Distribution of respondents according to negative attitude towards blood donation

SN	Items	Scale frequency					Mean ±Standard deviation
		S/D	D	U	A	S/A	
1	Blood donation weakens the immune system.	40	23	28	12	7	2.30 ± 1.24
2	Blood donation is very painful.	44	35	21	10	0	1.97 ± 0.98
3	A person cannot take part in any physical activities after blood donation.	40	24	17	14	15	2.45 ± 1.43
4	Only physically strong can donate blood.	18	20	25	21	26	3.15 ± 1.40.
5	There is sufficient motivation for blood donation as it needs to be.	8	9	32	19	42	3.71 ± 1.25.
6	Decreased practice of Blood donation does not affect the health of public people.	23	22	28	19	18	2.88 ± 1.36.
7	Donating blood more than once is bad for health.	60	14	21	8	7	1.98 ± 1.27
8	Donations should be made in an emergency only.	60	14	17	9	10	2.05 ± 1.36

Table 4: Association between knowledge regarding blood donation with selected socio-demographic variables

Variables	Frequency	Poor knowledge	Average knowledge	Good knowledge	p-value
Age					
16-20	71	24 (33.80%)	44 (62.97%)	3 (4.22%)	0.82
21-24	39	11 (23.20%)	26 (66.66%)	2 (5.12%)	
Gender					
Male	49	12 (24.48%)	33 (67.34%)	4(8.16%)	0.12
Female	61	23 (37.70%)	37 (60.06%)	1 (1.63%)	
Ethnicity					
Upper caste	69	23 (33.33%)	43 (62.31%)	3 (4.32%)	0.9
Others	41	12 (29.26%)	27 (65.58%)	2 (4.87%)	
Religion					
Hinduism	94	30 (31.91%)	59 (62.76%)	5 (5.31%)	0.62
Others	16	5 (31.25%)	11 (68.75%)	0 (0%)	
Faculty					
BBS	75	27 (36.0%)	45 (60%)	3 (4.0%)	0.35
BSW	30	7 (23.33%)	20 (66.66%)	3 (10.0%)	
BCA	5	1 (20.0%)	4 (80%)	0 (0%)	
Educational level					
1 st year	61	21 (34.42%)	36 (59.01%)	4 (6.65%)	0.37
2 nd year	49	14 (28.57%)	34 (69.38%)	1 (2.04%)	
Respondent Involvement in the organization					
Yes	13	7 (53.8%)	6 (46.2%)	0 (0%)	0.49
No	97	27 (28.1%)	65 (66.7%)	5 (5.2%)	
Family Involvement in the health organization					
Yes	33	8 (24.24%)	24 (72.72%)	1 (3.0%)	0.4
No	77	27 (35.50%)	45 (59.44%)	5 (6.43%)	

Association between knowledge regarding blood donation with selected socio-demographic variables: Table 4 shows association between knowledge regarding blood donation with selected socio-demographic variables, educational status, and involvement in the organization respectively. All three relationships between knowledge and selected variables was not statistically significant, as the p-value is greater than 0.05.

Table 5 shows association between knowledge and practice of blood donation among family members and respondents, respectively. Both tables depict no significant relationship between knowledge and practice since the obtained p-value is greater than 0.05. The correlation between knowledge and attitude towards the blood donation is 0.15 at p=0.08. The mean value of knowledge on blood donation was 18.9 and SD=4.5, whereas the mean value of attitude on blood donation is 9.7 and SD=0.5. There is no statistically significant relationship between knowledge and attitude as obtained p is greater than 0.05. So, if knowledge increases, there may not be changes in attitude.

determining one's degree of knowledge, attitude, and practice is critical. This study reveals that 4.54 % of the respondent had good knowledge, 63.65% average knowledge and 31.8 % had poor knowledge regarding blood donation. This is comparable with a study conducted in Central India (52.5%) [12]. But, The current findings is in contrast with previous studies conducted on university students in Thailand and Ethiopia; were the knowledge level was 42.7% and 40.04% respectively [13,14]. The majority of the respondents had good knowledge of who should and who should not donate blood in a study conducted at Department of Public health, Jimma University College of Public Health and Medical Sciences, Ethiopia. However, the result is lower than those of research conducted in Nigeria (85%) [15], Thailand (80%) [16], and South India(62%) [17]. On the other hand, it is higher than the results of research conducted in Nepal (32.4%) [10], South India (35.65%) [18], Manipur (9%) [19] and Kollam, Kerala (35%) [20]. Although, there is disparity among the studies but less number of participants having good knowledge of participants can be related to that the participants might be belonging

Table 5: Association between knowledge and practice of blood donation among family members

Variables	Frequency	Poor knowledge	Average knowledge	Good knowledge	p-value
Practice among family members					
Yes	60	18 (30.0%)	39 (65.0%)	3 (5.0%)	0.88
No	50	17 (34.0%)	31 (62.0%)	2 (4.0%)	
Respondent practice of blood donation					
Yes	60	8 (30.8%)	18 (69.2%)	0 (0%)	0.41
No	50	27 (32.5%)	51 (61.4%)	5 (6.2%)	

DISCUSSION

Many organizations working on health care facilities are concerned about maintaining the necessary level of blood supply. As a result,

from management and humanities. Differences in sociodemography and access to learning opportunities about the necessity of blood donation could be one factor for the variation.

In this study, 78.20% of respondents shows positive attitude which is higher and 23.63% have donated blood. 80% of the students had a positive attitude regarding blood donation almost parallel to our study as reported Amatya [10]. This result is lower than that of a study conducted in Pondicherry, India, which found that 85 % had a positive attitude and were likely to donate blood voluntarily [21]. Furthermore, it is lower than a research conducted in South India [22] in which 87.3 % openly advocated for blood donation. This result, however, is greater than that of a study by Addis Ababa University Health Science students, which found that 68 % had a positive attitude [23]. This disparity could be related to socio-cultural and educational inequalities between the respondents.

Less than half of the respondents (46.9%) had favorable attitude towards blood donation. Only 23.63% had donated blood. Despite having a positive attitude, they have not practiced blood donation. 84.5 % intend to donate blood, but the practice is only 23.6 %, indicating a need to increase reinforcement and motivation among youth. This is comparable to a study conducted on regular students in Ambo University, Ethiopia, where the rate was 47.7% [14]. Almost all of the respondents (96.5%) said that blood donation is a good thing to do which is slightly higher than studies conducted on students in Kathmandu (82.5%) and two studies conducted in Nigeria on physicians (89%) and health care workers (81.6%) in the University of Benin Teaching Hospital [24-26]. This is similar to study conducted in Thailand (11%) [16], Tamil Nadu, South India (10.75%) [18], South India (12.76%) [11] and Nigeria (15%) [15]. However, it falls far short of published studies done in Central India

(47.5%) [27], the University of South India (38%) [17], and Larissa, Greece (23.9%) [28]; these disparities could be attributable to the value of blood donation being promoted by blood banks and other social institutions.

CONCLUSIONS

The study concludes with the highest number of female respondents and a Hindu majority. The majority of respondents had moderate average knowledge of blood donation, followed by poor knowledge. Positive attitude towards blood donation was maximum among the respondents, but had not practiced blood donation. There was positive relationship between knowledge and attitude but no significant association between knowledge and practice. Youths who are healthy, active, dynamic, resourceful, and receptive are more likely to donate blood willingly; nevertheless, they must be encouraged, inspired, and motivated to do so.

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REFERENCES

1. Allerson J. Thesis, dissertations, and other capstone projects. Assessment of Selected University Students' knowledge of blood donation and the relationship with intent to donate blood. 2012.
2. Nwabueze S, Nnebue C, Azuikwe E, Ezenyeaku C, Aniagboso C, et al. Perception of blood donation among medical and pharmaceutical students of Nnamdi Azikiwe University, Awka. *Open J Prev Med* 2014; 4:515-522.
3. World Health Organization and International Federation of Red Cross and Red Crescent Societies. 2010.

4. World Health Organization. World blood donor day: Safe blood needed to save mothers. 2014.
5. Karim AM, Admassu K, Schellenberg J et al. Effect of Ethiopia's health extension program on maternal and newborn health care practices in 101 rural districts: a dose-response study. *PloS one* 2013;8(6): e65160.
6. WHO. Safety WB, Availability-Fact sheet N. 279. 2014. Available at: <http://www.searo.who.int/thailand/factsheets/fs0029/en/>. Accessed January 10, 2017.
7. Abolfotouh A, Al-Assiri MH, Al-Omani M, Al Johar A, Al Hakbani AS, Alaskar AS. Public awareness of blood donation in Central Saudi Arabia. *Int J Gen Med* 2014; 7:401.
8. Ingale L, Gessesse S, Miruts G. Magnitude and factors associated with voluntary blood donation practice among adult Mekelle population, north Ethiopia: a community-based cross-sectional study. *Research and Reviews. J Oncol Hematol* 2015; 4(3):5-13.
9. Melku M, Terefe B, Asrie F, et al. Knowledge, Attitude, and Practice of Adult Population towards Blood Donation in Gondar Town, Northwest Ethiopia: A Community Based Cross-Sectional Study. *Journal of Blood Transfusion* 2016; 794986.
10. Mrigendral A. Study on Knowledge, Attitude and Practice of Blood Donation among Students of Different Colleges of Kathmandu, Nepal. *International Journal of Pharmaceutical & Biological Archives* 2013; 4(3):424-28.
11. Yerpude PN, Jordan KS. A cross-section study on KAP on blood donation among medical students South India. *Int J Med health Sci* 2013; 2(4):382-5.
12. Geri PA, Pale DB. Knowledge and Attitude about Blood Donation Amongst Undergraduate Students of Gravari Institute of Medical Sciences Deemed University of Central India. *Ann Troop Med Public Health* 2012; 5: 569-73.
13. Nigatu A, Demissie DB. Knowledge, attitude and practice on voluntary blood donation and associated factors among Ambo University regular students, Ambo Town, Ethiopia. *J Community Med Health Educ* 2014; 4: 315.
14. Smriti V, Stuti S, Tejvansh SI, Vaibhav M. Awareness and knowledge of blood donation among medical faculty and students in Vadodar District. *Int J Sci Res* 2014;3: 304-308.
15. Salaudeen AG, Odeh E. Knowledge and behavior towards voluntary blood donation among students of tertiary institution in Nigeria. *Nigerian Journal of Clinical practice* 2011; 14(3):3.
16. Wiwanitkit V. Knowledge about blood donation among a sample of Thai university students. *Vox Sang* 2002; 83(3):97-9.
17. Saba KM, Remy A, Binue VS, Vive R. Knowledge, Attitude and Practice on Blood Donation among Health Science Students in a University campus, South India. *Health Allied Sacs J* 2011; 10(2):6.
18. Manikandan S, Srikumar R, Ruvanthika PN. A study on KAP on blood donation among health profession student in Chennai, Tamil's ado, south India. *International of scientific and research publication* 2013; 3(3):2-4.
19. Syiemlieh AJ, Akoijam BS, Kumar S. Assessment of Knowledge, Perception & Practice of Voluntary Blood Donation among Health Professional Students in RIMS, Imphal, Manipur. *IOSR-JDMS*. 2016; 15(10):26-30.
20. Ahmad NA, Abraham J, Sony S, et al. Assessment of knowledge, attitude and practice (KAP) of blood donation among MBBS students of a medical college in Kollam, Kerala. *Jemds* 2015; 887.
21. BhaRatWaj RS, Vijaya K, RajaRam P. A Descriptive Study of Knowledge, Attitude and Practice with regard to Voluntary Blood Donation among Medical Undergraduate Students in Pondicherry, India. *Journal of Clinical and Diagnostic Res* 2012; 6(4): 602-604.
22. Karakkamandapam S, Raghavan V, Sabu KM. Knowledge, attitude and practice on blood donation among health science students in a university campus, South India. *OJHAS*. 2011; 10(2):1-3.
23. Misganaw C, Tenkir M, Deresa A, Tesfaye M, Tessema TT, Taye H. The level and associated factors of knowledge, attitude and practice of blood donation among health science students of Addis Ababa University. *IJMHSR*. 2014; 1(10):105-18.
24. N, Usimenahon A, Alexander NI, Isi A. Knowledge, attitude and practice of voluntary blood donation among physicians in a tertiary health facility of a developing country. *J Blood Disord Transfus* 2012;3: 1-4.

25. Nwogoh B, Aigberadion U, Nwannadi AI. Knowledge, attitude, and practice of voluntary blood donation among healthcare workers at the University of Benin teaching hospital, Benin City, Nigeria. *J Blood Transfus* 2013; 1-6.
26. Baig M, Hamed H, Abdullah HH, Faisal TA, Abdulelah MN, et al. Knowledge, misconceptions and motivations towards blood donation among University students in KSA. *Pak J Med Sci* 29: 1295-1299.
27. Merav B, Lena G. Investigating the factors affecting blood donation among Israelis. *Int Emerg Nurs* 2010; 19(1):37-43
28. Papagiannis D, Rachiotis G, Symvoulakis EK, et al. Blood donation knowledge and attitudes among undergraduate health science students: A cross-sectional study. *Transfus Apher Sci* 2016; 54(2):303-8.