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Knowledge and practices of blood donation among the undergraduate students of district Una, Himachal Pradesh, India

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ABSTRACT

Introduction

Blood is the major vital component of the human body and most donated tissue in medical practice. It is a veritable tool in many live-saving situations when used judiciously. In spite of the rapid and remarkable conquest and breakthrough of medical science today, there is still no ideal substitute. Youths are the major source of blood donation and college students form a large and important group of population eligible for blood donation.

Objective

To assess the knowledge and practices of blood donation among undergraduate students of district Una, Himachal Pradesh.

Methodology

A cross sectional study was carried out in July-August 2015 among 277 undergraduate students of district Una, Himachal Pradesh. Convenient sampling with semi structured questionnaire using self-administered technique was used for collecting data. Data was analyzed using SPSS version 20.

Results

Out of 277 students, 165 were male and 112 female. More than half of respondents, 142(51.3%) had a poor level of knowledge. Only 48(17.3%) of the total respondents had donated blood and 32(19.4%) of the boys and 16(14.3%) of the girls had donated blood. Majority of the donors, 41(85.4%) had donated blood only once in their life. A highly significant statistical association was found between gender and knowledge regarding amount of blood in body (p-value=0.001). Stream of education was found to be highly significantly associated with knowledge about own blood group (p-value=0.003), knowledge regarding number of constituents present in blood (p-value=0.001) and knowledge regarding blood donation to HIV/AIDS affected person (p-value=<0.001). A highly significant association was found between practices of blood donation and age group (p-value=0.002).

Conclusion

Good knowledge and practice of blood donation among undergraduate students were found quite low. There should be regular blood donation campaign in colleges and students should be aware regarding the benefits and need of blood donation.

Keywords: Low Birth Weight, Antenatal Checkup, IFA Tablets, Birth Interval

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INTRODUCTION

Blood is an essential element of human life and can save millions of life through blood transfusion.[1,2] It is the most donated tissue in medical practice and a veritable tool in many live-saving situations. There is still no ideal substitute for blood in spite of the rapid and remarkable conquest and breakthrough of medical science today. It cannot be manufactured artificially and can only be obtained from human donors. Human blood donation is the only way of acquiring blood to meet emergency requirements in cases of road traffic accidents, complications of pregnancy and childbirth, various anemic disorders and other surgical emergencies. Blood donation is safe and advantageous to the donor, recipient, community and the blood transfusion service.[3-5] The need for blood transfusion is growing day by day the requirement of blood and blood products in a country depends on the population, health care structure, prevalence of conditions requiring regular transfusions. The developed countries are able to meet the demand of blood donation with well-structured health system and blood donation services whereas developing countries suffer from limited number of voluntary donors due to ignorance, misperceptions and fears about the blood donation process.[6,7]

Overall 108 million blood donations collected globally and half of them approximately are collected in the high-income countries. In low-income countries, up to 65% of blood transfusions are given to children under 5 years of age; whereas in high-income countries, 76% of all transfusions are given to the patient group over 65 years of age. Blood donation rate in high-income countries is 36.8 donations per 1000 population; 11.7 donations in middle-income and 3.9 donations in low-income countries. In 2012, 70% countries had a national blood policy, compared with 60% countries in 2004. Majority of young people donate blood in low- and middle-income countries, proportionally than in high-income countries.[8] The average number of blood donations per 1,000 populations is 10 times higher in high-income countries than in low-income countries. It is generally recommended that the equivalent of 1-3% of the population should donate blood to meet a country's needs.[9]

Blood can save millions of life, and young people are the hope and future of a safe blood supply in the world. Youngsters are the most potential blood donors in every society and students constitute a huge portion of them.[10]

The study was conducted to assess knowledge and practices of blood donation among the undergraduate students of District Una, Himachal Pradesh, India.

METHODS

A cross sectional study was conducted to assess the knowledge and practices of blood donation among 277 undergraduate students of four degree colleges of Una district, Himachal Pradesh. Convenient sample technique was used for data collection in July-August, 2015 using the self-administered semi structured questionnaire. Collected data from questionnaire were entered in SPSS version 20 and statistical analysis was done using SPSS. Frequency tabulation and chi square test were done. For assessing the level of knowledge among students, scoring was done for 11 knowledge related questions and for each correct answer one score was given and no score was given for wrong answer. Those who had less than 4 scores (<40%) were classified as poor knowledge, 4-7 scores (between 40-60%) classified as average knowledge and above 7 scores (>60%) were classified as having good level of knowledge.

Approval was taken from School of Public Health, Eternal University and college administration of different colleges of district Una for the data collection. Written informed consent was taken from respondents and their participation in the study was voluntary. Clarity of the purpose of study was done among the undergraduate students in every school prior to data collection. Confidentiality of each respondent has been maintained strictly.

RESULTS

General Information

In the socio demographic profile, out of 277 respondents, 159(57.4%) were from the age group of 18-19 years and majority of respondents, 165(57.6%) were male. In stream of education, majority of respondents, 88 (31.8%) were in stream of B. Sc. Non-medical followed 25(9%), B. Com 77(27.8%), BA 73(26.4%) and BCA 14(5.1%).

Knowledge of blood donation among students

More than half, 176(63.5%) of students knew about their blood group. Majority of respondents didn't know about minimum hemoglobin level for blood donation (89.5%), amount of blood in one unit blood (96.4%), units that can be donated in one time (53.4%), number of constituents can be derived from blood(73.3%), time taken for real blood donation(72.3%), minimum gap between two blood donation(65.7%), blood volume(in liters) in human being(75.8%) and HIV/AIDS affected person can donated the blood(80.9%). Majority of respondents, (80%) knew about minimum age for blood donation and blood could be donated to HIV/AIDS affected person (58.8%). (Table 1)

Table 1 Knowledge of Undergraduate Students regarding Blood Donation (n=277)

Knowledge related information	Having Knowledge	No knowledge
Owns' blood group	176(63.5)	101(36.5)
Minimum Hb level for blood donation	29(10.5)	248(89.5)
Minimum age for blood donation	230(83)	43(17)
Amount of blood in one unit blood	10(3.6)	263(96.4)
No. of units donated in one time	129(46.6)	148(53.4)
No. of constituents can be derive from blood	74(26.7)	203(73.3)
Time taken for real blood donation process	75(27.1)	202(72.9)
Minimum gap between two blood donation	95(34.3)	182(65.7)
Blood volume in body	67(24.2)	210(75.8)
HIV/AIDS affected person can donate the blood	53(19.1)	224(80.9)
Blood can be donated to HIV/AIDS affected person	163(58.8)	114(41.2)

#Figures in parenthesis indicate percent

Statistically highly significant association was found between gender and knowledge of amount of blood present in human being (p=0.001), stream of education and person's knowledge regarding own blood group (p=0.003), stream of education and person's knowledge regarding no. of constituents present in blood (p=0.001) and stream of education and person's knowledge regarding blood donation to HIV/AIDS affected person (p<0.001). (Table 2)

Table 2 Association between Socio-Demographic Variables and Knowledge related Components

Association between socio-demographic variables and knowledge among respondents	Test value X^2	P value (<0.05)
Gender and knowledge of amount of blood present in human being	16.326	0.001*
Stream of education and person's knowledge regarding own blood group	52.667	0.003*
Stream of education and person's knowledge regarding no. of constituents present in blood	33.960	0.001*
Stream of education and person's knowledge regarding blood donation to HIV/AIDS affected person	20.101	<0.001*

**Statistically highly significant at p<0.01*

Majority of respondents, 142(51.3%) had poor knowledge followed by average/satisfactory knowledge 129 (46.6%) and good knowledge 6(2.2%). (Table 3)

Table 3 Level of Knowledge among Undergraduate Students

Level of Knowledge	Frequency (n=277)	Percent (%)
Poor	142	51.3
Average/Satisfactory	129	46.6
Good	6	2.2

Practice of blood donation

Blood donation practices were found few i.e. 17.3% among respondents. Majority of respondents 41(85.4%) had donated blood once ever in their life and no any respondent had donated blood more than three time ever in their life. (Table 4)

Table 4 Practice of blood donation

Practice	Frequency	Percent (%)
Blood donation	(n=277)	
Yes	48	17.3
No	229	82.7
Number of times of donation of blood (n=48)		
One	41	85.4
Two	3	6.3
Three	4	8.3

Statistically highly significant association was found between practices of blood donation and age (p=0.002). However, blood donation practices were not found to be significantly associated with gender (p=0.270) and stream of education (p=0.908). (Table 5)

Table 5 Association between the practice of blood donation and demographic variable

Socio-demographic characteristics	Blood donation (n=277)		Test value	P value
	Yes	No		
Age			14.843	0.002*
16-17	2 (3.5)	55 (96.5)		
18-19	28(17.6)	131 (82.4)		
20-21	14 (27.5)	37 (72.5)		
22-23	4 (40.0)	6 (60.0)		
Gender			1.215	0.270
Male	32 (19.4)	133 (80.6)		
Female	16 (14.3)	96 (85.7)		
Stream of Education			1.013	0.908
B.Sc. Medical	6 (24.0)	19 (76.0)		
B.Sc. Non-medical	14 (15.9)	74 (84.1)		
B.Com	13 (16.9)	64 (83.1)		
B.A	13 (17.8)	60 (82.2)		
B.C.A.	2 (14.3)	12 (85.7)		

*# Figures in parenthesis indicate percent, * Statistically highly significant at p<0.01*

The main reasons for not donating blood were found as lack of approach, perception of becoming weak, fear of needles for boys. Similarly, for girls major reasons for not donating blood were perception of becoming weak, lack of approach and unfitness to donate. (Table 6)

Table 6 Reasons for not donating blood

Sex	Male (%) (n=133)	Female (%) (n=96)
Perception of becoming weak	19.5	26.5
No approach to donate	28.6	22.4
Unfit to donate	9.8	22.4
Need to donate for friends or relatives	11.3	6.1
Fear of needles	15.8	8.2
Parents or elders refused to donate	5.3	5.1
Donated blood may be sold	7.5	5.1
Age problem	2.3	4.1

More than half of respondents (71.1%) thought that there are benefits of blood donation, majority of respondents 82.2% wanted to donate blood voluntarily and more than half of respondents 71.8% will donate blood if called upon and remind to do so. (Table 7)

Table 7 Beliefs of respondents for blood donation (n=277)

Beliefs of respondent on blood donation	Yes	No
Beneficial	197 (71.1)	80 (28.9)
Donate blood on invitation	199 (71.8)	78 (28.2)
Donate blood voluntarily	229 (82.7)	48 (17.3)

 # Figures in parenthesis indicate percentage

DISCUSSION

More than half of the respondents, 51.3% had poor knowledge followed by 46.6% average knowledge and 2.2% good knowledge. Knowledge of respondents regarding the interval of blood donation was 34.3% which was found lower than the study done in Chennai (51.2%).[13] Similarly, knowledge regarding the prerequisite hemoglobin level for blood donation (10.5%) was also found lower than the study done in Chennai (52%)[13] and awareness on the HIV patients could not donate blood (19.1%) was also lower than the study done in Chennai on voluntary blood donors (99.4%).[13] More than half of students were found to know about their blood group (63.5%).

A significant association was found between gender and knowledge regarding amount of blood present in body (p-value=0.001), stream of education and knowledge regarding own blood group (p value=0.003), stream of education and knowledge regarding no. of constituents present in blood (p value=0.001) and stream of education and knowledge regarding blood donation to HIV/AIDS affected person (p value=<0.001).

Practices regarding blood donation among students of district Una was found lower (17.3%) than the studies done among students of Nepal (28.5%) [11] and Ambo University, Ethiopia (23.6%).[10] This could be due to less awareness regarding the need and provision of blood donation services and less encouragement to students for blood donation by health care workers. The practices regarding blood donation among the boys was found higher than among the girls. Among all stream of education, students of arts stream (B.A) had higher percentage for blood donation (17.80%). The major reason for not donating the blood among boys (28.6%) was found as lack of approach to donate the blood and majority of girls (26.5%) did not donate blood because they perceived that it would impair their health. Majority of respondents (82.7%) wanted to donate blood voluntarily. Majority of the blood donors (82.7%) had donated blood only once in their life. Practices regarding blood donation among students of district Una was found higher (17.3%) than the study done among students of Puducherry, India (13.2%).[12] This might be due to very few blood donation campaigns held in the colleges in Una district. Lower practices than the requirement might be due to rare blood donation campaign services and less encouragement to students for donation of blood. A highly significant statistical association was found between practices of blood donation and age group (p value=0.002). Female donors were found to be few in number (14.3%) as compared to males (19.4%), which was similar to the findings of studies which were conducted in Nepal,[11] Nigeria[3] and Chennai, India.[13] The reasons for less female donors were found as perception of being weak for blood donation and becoming weak by donation. Majority of respondents, 197 (71.1%) had positive opinion regarding benefits of blood donation and 229 (82.7%) wanted to donate blood voluntarily.

CONCLUSION AND RECOMMENDATIONS

Good knowledge and practice of blood donation among undergraduate students were found quite low. Regular blood donation campaigns should be organized in colleges and communities to increase knowledge and practices among youth as they are the major source for fulfilling the demand of blood. Students should be aware by the teachers, health care professionals, government and concerned agencies regarding the needs and benefits of blood donation. Formulation of health club and committee should be prioritized at college and community level to increase knowledge of youths related to blood donation services.

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