WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 9, Issue 14, 1303-1315. Research Article ISSN 2277– 7105

KNOWLEDGE, ATTITUDE AND PRACTICES ABOUT BLOOD DONATION AMONG PHARMACY STUDENTS: A CROSS SECTIONAL STUDY IN SOUTH KERALA

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Article Received on
21 Sept. 2020,
Revised on 11 October 2020,
Accepted on 01 Nov 2020
DOI: 10.20959/wjpr202014-19167

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ABSTRACT

Blood inadequacy often come across in health-care settings and is accountable for disproportion between increasing demand for safe blood and blood products on the one hand and failure to arrange regular blood supply due to misunderstandings, perceived injuries and risks, and absence of motivation among potential donors. In this study, the study population are pharmacy students whose opinion represents what will be transmitted to the general population, and thus a reflection of the community view of blood donation can be obtained. The objective of the present study was to assess the knowledge, attitude and practice level of pharmacy students in South Kerala. A Cross sectional study was conducted among 210 students using structured pre-tested self-administered questionnaire. Data was analysed using SPSS version 20. The study participants were found to have overall good knowledge level (65.2%), positive attitude (61.9%) and poor practice (62.9%) about blood donation. Major reason for non-donation was being underweight or anaemic (45.7%). Although attitude and practice towards blood donation was slightly higher in males than females, there was no significant association between sociodemographic variables and KAP. The nutritional factors

should be considered seriously as several students stated being underweight and anaemic as causes for not donating blood. Systematic health check-ups along with provision of nutritious meals should be ensured. Also, there exists a need for increasing awareness in the students regarding blood donation.

KEYWORDS: Knowledge, attitude, practice, blood donation.

INTRODUCTION

Blood and blood products are essential for life-saving situations in different medical emergencies, and shortage of blood supply would subsequently have delirious consequences on human morbidity and mortality.[1] Presently, the demand for blood and blood products witnessed a steep increase worldwide, especially among developing countries. However, blood donation does not match with the increasing demands.[2] Blood donation can be voluntary, remunerated, replaced via relatives, family members, or paid donors. It is generally recommended that blood donation to be confined only to voluntary blood donation because of the growing figures of infection transmission during the process of blood transfusion.[3,4]

In this survey, the targeted population to be studied were the pharmacy students, not only because they would be potential healthy large sector blood donors, but also, they are the source of information and health education to the community, and their opinions represent what will be transmitted to the general population, and thus a reflection of the community view of blood donation. Identification of the negative attitudes about blood donation, the motivational factors that may encourage blood donation, and general knowledge about blood donation would facilitate and improve the process of blood donation and help to decrease the gap between the increasing demands and the stationary inadequate supply among different nations. According to the World Health Organisation (WHO), at least 1% of the nation's population should donate blood voluntarily to meet the basic requirement for blood and blood products.[5] The focus was on encouraging 100% non-remunerated, voluntary blood donation from donors of low-risk populations so as to decrease the risk of transfusion-associated infections.[6]

In India, there is a need of about 8 million units of blood every year out of which only about one-third are obtained from voluntary donors.[7] Replacement donors or family donors are people who donate blood to their family, friends, and relatives in time of need and account

for approximately 45% blood donations in India.[8] The WHO stresses the fact that replacement blood donation needs to be discouraged and replaced by voluntary, non-remunerated blood donation. Paid/professional blood donation has been banned in India since January 1998.[9]

Blood scarcity is frequently encountered in health-care settings and is attributable to an imbalance between increasing demand for safe blood and blood products on the one hand and failure to organise regular blood supply due to misconceptions, perceived harms and risks, and lack of motivation among potential donors. The prevalence of voluntary blood donation is reported to be even lower among the females. Thus, there is a need to find the different factors that can contribute toward voluntary blood donation.

Knowledge, attitude, and practice (KAP) studies are a commonly used tool to investigate various aspects of human behaviour.[9] By assessing what people know (knowledge), how they feel about it (attitude), and what they actually do based on their knowledge and attitude (practice), the investigator is better able to appreciate the outlook of the people regarding behaviour and suggest relevant remedial measures.

AIM

The present study aims to evaluate the level of knowledge, attitude and practice concerning blood donation among pharmacy students in South Kerala, India.

OBJECTIVES

- To assess the knowledge level of pharmacy students regarding blood donation.
- To evaluate the attitude of pharmacy students about blood donation.
- To determine the practice of pharmacy students concerning blood donation.
- To determine the association between sociodemographic variables and KAP.

MATERIALS AND METHODS

A cross sectional observational study was conducted over a period of 3 months from December 2019 to February 2020. After attaining clearance from Institutional Research Committee, a self-administered questionnaire was circulated among pharmacy students. The questionnaire was prepared using information and detailed analysis from the literature survey and elements used in earlier research works. The level of KAP on blood donation among respondents was evaluated by using this questionnaire. Students who were willing to

participate were included in the study. The KAP questionnaire consists of a total of twenty seven questions which were divided into 4 sections. First section was on demographic characteristics of participants containing 4 questions, second section comprised of nine questions to evaluate knowledge, third section had twelve questions on positive and negative attitude of respondents and fourth section contains two questions on practice of blood donation among pharmacy students. All the data were entered into Microsoft excel and statistical analysis was performed using Statistical Package For Social Sciences (SPSS) version 20. Descriptive statistics such as mean, median, percentage and frequency were performed. Also, association between sociodemographic variables and KAP were assessed using chi-square test.

Level of knowledge, attitude and practice

Knowledge level was categorised into good knowledge or poor knowledge. Participants with a median score of 4 or more were considered as having good knowledge and those with a median score of less than 4 were considered as having poor knowledge. Regarding attitude, study participants with a median score of 9 or more were considered as having good attitude and those who scored a median score of less than 9 were considered as having poor attitude. About practice, participants who have donated once were considered as having good practice and those who have never donated blood were considered as having poor practice.

RESULTS

The KAP questionnaire was distributed to 250 students and a total of 210 students returned the filled questionnaire, showing a response rate of 84%.

1. Demographic characteristics of pharmacy students

210 students participated in the study, 79 (37.6%) males and 131 (62.4%) females. The age groups varied as 18-20 (52.4%), 21-23 (34.8%) and 24-26 (12.8%). The majority of them were females in age group 18-20 pursuing B Pharm graduation. 85.7% of the population were familiar with the common blood groups and 90% of the population knew their own blood group. Only 21 (10%) were still unaware of their blood groups. The most common blood group reported was O+ (23.3%) followed by B+ (21%), A+ (20%), and A- (11.9%). Demographic characteristics of participants are summarized in table 1.

Table I: Demographic characteristics of pharmacy students.

Variable	Category	N	%
Age	18-20	110	52.4
	21-23	73	34.8
	24-26	27	12.8
Gender	Male	79	37.6
	Female	131	62.4
Educational Status	B PHARM	114	54.3
	D PHARM	14	6.7
	M PHARM	5	2.4
	PHARM D	77	36.6
Blood group	A-	19	11.9
	A+	39	20
	AB-	5	2.4
	AB+	14	7.1
	B-	16	8.1
	B+	40	21
	O-	10	6.2
	O+	46	23.3

2. Knowledge relating to blood donation among pharmacy students

The knowledge of blood donation was measured by questions assessing general knowledge about blood donation, knowledge of criteria for donor selection, and knowledge regarding infections that can be transmitted through transfusion of contaminated blood. The responses of the study participants to questions assessing the knowledge are summarised in table II. Among the 210 people, 78.6% of the population was aware of the risk of infection due to blood donation and diseases that are transmitted by blood donation as shown in figure 2. 48.6% of the study population knew the right frequency between each donation, 50% knew the correct duration, 70% of study population are aware of volume of blood taken, 68.1% correctly identified minimum weight required for tranfusion, 40% properly recognised levels of hemoglobin for males and females (51.9%) as summarized in table 2. Only 2.5% students answered correctly the various diseases transmitted by blood transfusion. Merely 7.6% students responded appropriately that men, women and young can donate blood, whereas 92.4% answered it incorrectly that old people can also donate blood.

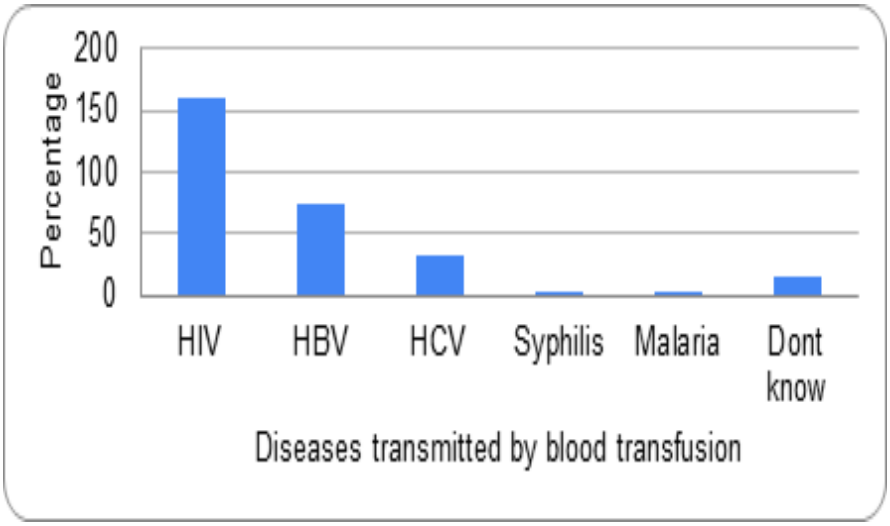

Fig. 1: Diseases transmitted by blood transfusion.

Table II: Knowledge relating to blood donation among pharmacy students.

Knowledge questions	Response	N	%
Can a person be infected by receiving blood transfusion?	Yes	165	78.6
	No	20	9.5
	Don't know	25	11.9
What are the diseases transmitted by blood transfusion?	HIV, HBV, HCV, MALARIA, SYPHILIS	5	2.4
	Incorrect answer	205	97.6
How often can an individual donate?	3 months	102	48.6
	Incorrect answer	108	51.4
Who should donate blood?	Men, Women, Young	16	7.6
	Incorrect answer	194	92.4
What volume of blood is collected during each donation?	500 ml	147	70
	Incorrect answer	63	30
What is the duration of a donation process?	<20 minutes	105	50
	Incorrect answer	105	50
Minimum weight for blood donation?	50 kg	143	68.1
	Incorrect answer	67	31.9
Minimum haemoglobin for male donation?	13.5 g/dl	84	40
	Incorrect answer	126	60
Minimum haemoglobin for female donation?	12 g/dl	109	51.9
	Incorrect answer	101	48.1

3. Pharmacy students attitude towards blood donation

i. Negative Attitude on blood donation among pharmacy students

55.7% disagreed to the statement that best way to donate blood is at the request of relatives and 70% disagreed that paid donation is the best method to donate blood. 53.3% of the population believed that the blood donors does not require anything in exchange and majority

disagreed to the fact that blood donors could contract disease and are temporarily weakened (Table III).

ii. Positive Attitude on blood donation among pharmacy students

91% of the population positively responded that blood donation could save lives and is a moral activity. 91.4% agreed that young people should donate more often than elderly and 83.8% agreed that people with more knowledge donate more often. Majority (84.3%) accepted that the best way to donate blood is voluntary non- remunerated and 90.5% agreed that person should disclose correct information before blood donation (Table III).

Table III: Attitude on blood donation among pharmacy students.

Negative Attitude questions	**Response**	**N**	**%**
In my opinion the best way to donate blood is at the request of relatives.	Uncertain/agree/strongly agree	93	44.3
	Disagree/strongly disagree	117	55.7
In my opinion the best way to donate blood is paid donation.	Uncertain/agree/strongly agree	63	30
	Disagree/strongly disagree	147	70
I think people who donate blood should receive something in exchange.	Uncertain/agree/strongly agree	98	46.7
	Disagree/strongly disagree	112	53.3
I think people who donate blood can contract disease.	Uncertain/agree/strongly agree	87	41.4
	Disagree/strongly disagree	123	58.6
I think people who donate blood are temporarily weakened.	Uncertain/agree/strongly agree	70	33.3
	Disagree/strongly disagree	140	66.7
I donate blood to get free investigations.	Uncertain/agree/strongly agree	85	40.5
	Disagree/strongly disagree	125	59.5
Positive Attitude Questions	**Response**	**N**	**%**
I think blood donation saves life.	Uncertain/disagree/strongly disagree	19	9
	Agree/strongly agree	191	91
I think blood donation is a moral activity.	Uncertain/disagree/strongly disagree	19	9
	Agree/strongly agree	191	91
I think young people should frequently donate blood rather than old.	Uncertain/disagree/strongly disagree	18	8.6
	Agree/strongly agree	192	91.4
I think people having more knowledge on blood donation donate more often.	Uncertain/disagree/strongly disagree	34	16.2
	Agree/strongly agree	176	83.8
In my opinion the best way to donate blood is voluntary non-remunerated.	Uncertain/disagree/strongly disagree	33	15.7
	Agree/strongly agree	177	84.3
I think every person should always disclose correct information about his/her health before donating blood.	Uncertain/disagree/strongly disagree	20	9.5
	Agree/strongly agree	190	90.5

4. Practice on blood donation among pharmacy students

Out of the 210 study participants, only 78 (37.1%) had donated blood so far (Table IV). Of these 33 (42.30%) were males and 45 (57.69%) were females.

Table IV: Practice on blood donation among pharmacy students.

Practice Question	Response	N	%
Have you donated before?	Yes	78	37.1
	No	132	62.9

Reasons for non-donation

The table V shows the reason for non- donation. Majority (45.7%) of the students were unfit to donate being underweight (<50 kg) or were anaemic (low level of Hb than the normal (Figure 5). 29.5% were not willing to donate due to non-payment, 20.5% students had fear of needles, 6.7% had fear of knowing status, 15.2% believed that donated blood might be sold and 14.3 % were not satisfied to donate themselves.

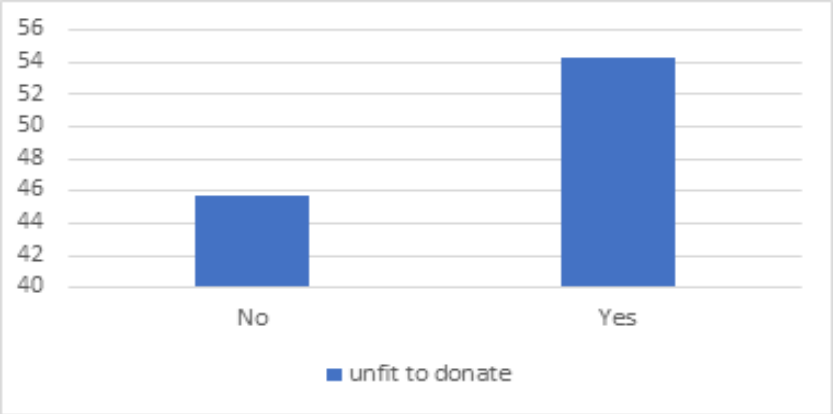

Fig 2: Main reason for non-donation.

Table V: Reasons for non-donation.

Reason	Category	N	%
Not satisfied to donate	Yes	30	14.3
	No	180	85.7
Unfit to donate (underweight or anemic)	Yes	96	45.7
	No	114	54.3
Need to donate for friends or relatives in future	Yes	158	75.2
	No	52	24.8
Fear of needles	Yes	43	20.5
	No	167	79.5
Fear of knowing my status	Yes	14	6.7
	No	196	93.3
Donated blood may be sold	Yes	32	15.2
	No	178	84.8
No payment	Yes	62	29.5
	No	148	70.5

Summary of knowledge, attitude & practice towards blood donation

In the present study, majority of the pharmacy students proved that they had good knowledge (65.2%) and positive attitude (61.9%) towards blood donation, but when it gets to the practice, students had poor practice (62.9%) towards blood donation.

Table VI: Summary of knowledge, attitude & practice towards blood donation.

Variable	Category	N	%
Knowledge (Median score = 4)	Good knowledge	137	65.2
	Poor knowledge	73	34.8
Attitude (Median score = 9)	Good attitude	130	61.9
	Poor attitude	80	38.1
Practice	Good practice	78	37.1
	Poor practice	132	62.9

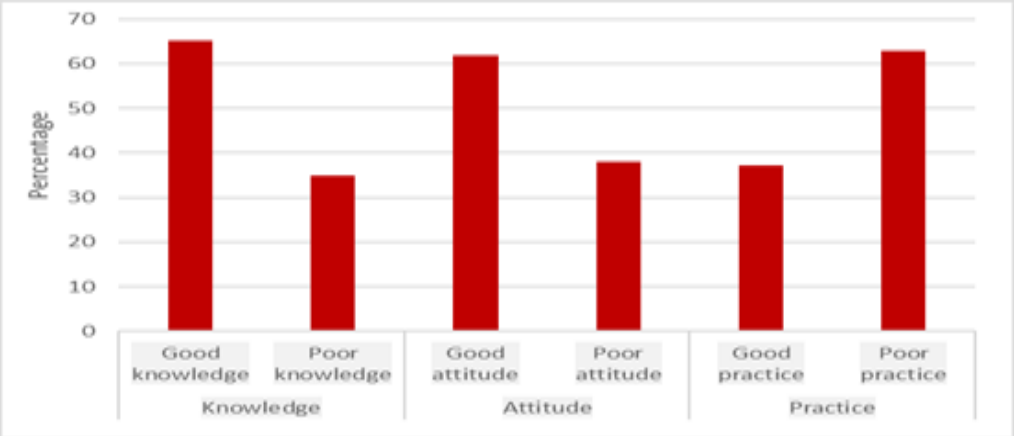

Fig. 3: Summary of knowledge, attitude and practice.

Association of sociodemographic variables with KAP

Association was explored among different sociodemographic factors and KAP. There was no association between sociodemographic variables and knowledge level, attitude and practice (Table VII and VIII) and was not statistically significant ($p>0.05$).

Table VII: Association of gender with level of attitude.

		Level of attitude		Total
		Poor attitude	Good attitude	
Gender	Male	28	51	79
	Female	52	79	131
Total		80	130	210

Table VIII: Association of gender with level of practice.

		Level of practice		Total
		Good practice	Poor practice	
Gender	**Male**	33	46	79
	Female	45	86	131
Total		78	132	210

DISCUSSION

This study aimed to assess the KAPs relating to voluntary blood donation among pharmacy students in Kerala, India. Two hundred and ten students were enrolled in the study, out of which 37.7% were male and 62.3% were female. The study participants were found to have good overall knowledge about blood donation (78.2%). Comparable results have been reported by Kumari and Raina (81.5%) among college students in Jammu and in a KAP study among Thai students by Wiwanitkit.[10,11]

Knowledge about own blood group is important for rapid arrangement of blood at time of emergency. According to this study, 90% of students were aware of their blood group and only 10% had no idea about their blood groups. Doing blood group determination in anatomy and physiology experiments may be the reason for this high level of awareness. This finding indicates that teaching organizations had a great role in providing knowledge and creating positive attitude towards voluntary blood donation.

The study population had good knowledge about some donor selection criteria like minimum weight required, minimum haemoglobin required, volume of blood taken, duration and correct frequency between blood donation. Conversely a wide gap in knowledge has been observed in information about infections transmitted by transfusion such as HCV, malaria and syphilis. Their awareness about means of transmission of HCV, malaria and syphilis were moderately poor[12,13] Also, majority of students were unaware of the people who can donate blood. Therefore, there is a need for arranging awareness generation classes about voluntary blood safety and donation for the pharmacy students, so that they could advance their knowledge and feel relaxed of unnecessary fears and negative attitudes.

In spite of having a general positive attitude towards blood donation, 78.6% of population felt that blood donation may lead to infections. While this could reflect ignorance on the part of participants, it also raises a concern regarding the negative perception of the quality of blood

bank services and donor safety in the minds of the public. Correlation between sociodemographic parameters and KAP were not found to be statistically significant.

Blood donation practice was found to be more in males than females, but not statistically significant. The prevalence of blood donors in this study was 37.1%. Similar findings have been reported in studies by Kumari and Raina (13.81%)[14,15] and Desai and Satapara (21.3%).[16] Our study results are in line with other studies that have reported a low prevalence of blood donation in spite of good overall knowledge (65.2%) and favourable attitude (61.90%).[16] Even though the students were ready for blood donation, they could not do so due to minimum haemoglobin requirement (12.5%) or being underweight (<50 kg). So the present study recommend the necessity to consider nutritional deficiencies among students, need for prophylactic management and deworming. It is necessary to make the students be nutritionally aware of a balanced diet, so that the required body weight and normal haemoglobin can be achieved that makes them eligible for blood donation.

CONCLUSION

This study concludes that the study population had relatively good knowledge and a favourable attitude about voluntary blood donation. However, the prevalence of blood donation among the students is still low. This necessitates need for continuing educational activities that inspires voluntary blood donation among students. The nutritional factors should be considered seriously as several students stated being underweight and anaemic as causes for not donating blood. Systematic health check-ups together with provision of nutritious meals should be ensured. Also, there exists a need for increasing awareness in the students regarding blood donation.

ACKNOWLEDGMENT

The authors would like to express our sincere appreciation to all the staff members and students of Ezhuthachan College of Pharmaceutical Sciences for their valuable support in the successful completion of the study.

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