

# Knowledge, Attitude and Practice of Blood Donation among University Students in Kashmir Valley

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## ABSTRACT

**Background:** Young, healthy and physically fit students can play a vital role in blood donation. Youth constitute a good proportion of the Kashmiri population so it is very important that we encourage, inspire and motivate them to donate blood on regular basis voluntarily rather than on need basis. The present study was conducted in Kashmir valley to assess the University student's awareness and attitude towards blood donation.

**Material and Methods:** In this cross sectional study, 800 University students selected at random from various Universities of Kashmir valley using stratified random sampling technique were evaluated using a well-designed validated questionnaire. The information collected on socio-demographic variables, knowledge and attitude of students towards blood donation was assessed using appropriate statistical tools.

**Results:** A total of 800 students, 50% boys and 50% girls were evaluated in present study. The results of our study showed that only (5.5%) of total respondents had a history of blood donation and out of these respondents 90% respondents donate only once. The study reveals that the most mentioned reasons behind not donating blood were; not being asked to donate blood (43.5%); inconsideration of donation (29.5%) and fear of drawing blood (27.0%). The

study also revealed that 53.5% students had adequate knowledge regarding blood donation and 93.5% students understudy showed positive attitude towards blood donation. The male students were more knowledgeable and showed more interest in donating blood than female respondents.

**Conclusion:** The current study showed that inadequate knowledge was prevalent among substantial proportion of University students in Kashmir valley, and there was a significant disparity in Knowledge between male and female students. The study further, showed despite the positive attitude of students towards blood donation, only 5.5% students had history of blood donation. It was concluded that blood donation camps and education programs are necessary to motivate youth and increase awareness towards voluntary blood donation rather than donating blood on need basis.

**Keywords:** Kashmir, Blood donors, Students, Knowledge, Attitude, Statistics

## INTRODUCTION

Blood transfusion is one of the crucial needs of the general public to care and treatment to patients with serious conditions such as trauma, major surgeries, chemotherapy, and patients in need of long term therapies. It is a vital part of worldwide

healthcare and is considered as a life-sustaining and life-saving procedure. It has been reported that over one hundred million units of blood are donated each year throughout the world (Ciepiela et al., 2017). The blood donation is generally performed by inserting a large bore needle (16G or 18G) into a peripheral vein of a patient, usually within the antecubital fossa. In case an individuals who do not have an easily accessible antecubital vein, veins on the dorsum of the hand or other prominent veins of a patient may be used. In 1628, British physician William Harvey discovers the circulation of blood and the first known blood transfusion is attempted soon afterward. The blood was initially transfused directly from blood donor to recipient without intervening storage or transport so this technique was useful for small numbers of patients and only on a small scale. The lists of blood donors, locally available were maintained and at any time of need they were called to donate blood to the patients. There was a time when lists of donors were maintained of persons locally available to be called in to donate to patients at any time as needed. In World War I, soldiers were dying of non-fatal wounds mainly to the inability to perform a timely blood transfusion. Hence necessity drove the development of more flexible donation and blood storage practices. It was noticed that clotting was inhibited by adding citrate to the blood donated (Lewisohn, 1958) and later glucose was added to the solution to allow the red blood cells to remain viable for several weeks when stored in refrigerated conditions (Wang , 2018; Rous and Turner, 1916). The current blood banking system was introduced by US Army Medical Corps, Captain Oswald Hope Robertson of the who collected Group O blood, combined it with glucose, and stored it before the Battle of Cambrai in November 1917. It was a fundamental shift from the prior practices of "direct" blood donation to "indirect" blood donation, significantly separating geographically and temporally the donors

from their recipients which made blood donation and transfusion a much more practical and useful medical intervention (Robertson, 1918). It is important to note that as per American Association of Blood Banks (AABB), the blood donor's vital signs should be monitored, the potential blood donors must be at least 16 years of age (though this age may vary), weigh at least 110 pounds and not be currently ill, have unregulated hypertension, diabetes, or be anemic. Low hemoglobin is the number one cause for donor deferral, accounting for deferral in as many as one out of 10 attempted blood donations. The causes of low hemoglobin may vary, but one of the most common is low dietary iron consumption. A large amount of iron is lost each time a person donates blood. The blood donors must take sufficient fruits, vegetables, iron supplementation to rebuild more quickly iron stores. The study (Sojka, 2003) reported that problems concerning a permanent shortage of blood are observed in blood services all over the globe and the only source of blood is blood donation (Olaiya et al., 2004). It has been reported that recruitment of charitable, non-remunerated blood donors throughout the world poses main challenges to transfusion services (Misje et al., 2010). Students consist a big and healthy group who are capable of providing a huge number of blood donation, however, blood donation is rare amongst the students and the rate of blood donation is low. A number of studies conducted in various parts of the globe reported that students boys as well girls donate blood (e.g., Vasquez et al., 2007, Mamatya et al ., 2012; Mishra et al., 2016; Ciepiela et al., 2017). To attract members of the society for blood donation more attempts should be made. We can increase the hemoglobin level significantly in our body by incorporating vegetables like beetroot, broccoli, fresh green leafy vegetables, Lentils, legumes and pumpkin seeds. Beetroot contains high amounts of iron which when taken in different forms like juice, salads etc for 20 days increases

the hemoglobin level significantly. Broccoli, a member of cauliflower family, usually taken as salad contains high amounts of calcium, and is an excellent source of vitamin C plus contains fiber and nutrients which also help in blood cell formation. The leafy vegetables are great source of iron and calcium. The elders in the family told thousands of times to have some green vegetables, and they were right for a reason as the fresh green vegetables like Spinach (Palak), Fenugreek Leaves (Methi) and beans can be used in our daily diet to balance the level of calcium as well as haemoglobin level. The lentils like daal, rajma, sesame seeds (til) are other good source of iron and grains like barley, rice, semolina, bajra, maize can also be included in this category. Legumes of all types like soya nuts, red kidney beans, chickpeas, black-eyed peas, black beans, lentils, fava beans are best plant foods, enriched with iron. The most important duties of the blood transfusion organizations all around the world is the recruitment of low risk potential blood donors (Mulatu, 2017). There is very little literature available in Kashmir valley on awareness and attitude of University students towards blood donation. The University students could be a significant group of blood donors, we conducted present study to evaluate awareness and attitude of university students of Kashmir valley towards blood donation.

## MATERIAL AND METHODS

One of the most crucial needs of the society in multiple diseases and injuries is blood transfusion. The only source of blood is donation and students consist a huge and healthy group who are able of providing a large number of blood donation, however, blood donation is rare amongst students. This study was conducted during 2019-20 to evaluate students' awareness, attitude and practice towards blood donation using a well developed validated questionnaire. In the present cross sectional study, University students in Kashmir valley were evaluated

using a well designed validated questionnaire. The data collected from 800 students (400 boys and 400 girls) using a stratified random sampling technique was analyzed using appropriate statistical tools with the help of SPSS (version 21).

## RESULTS AND DISCUSSION

The data presented in Table 1 shows the distribution of the study population as per the characteristics Gender, Family status, Economic status and Residence. It is observed that majority of the respondents were from nuclear families (78.75%), living in urban areas (68.25%), from middle class families (92.75%) and majority of respondents were pursuing PG (56%).

Table 1: General Characteristics of the studied population

Characteristics	Category	Number of Respondents	%
Gender	Male	400	50
	Female	400	50
Family Status	Joint	85	21.25
	Nuclear	315	78.75
Economic Status	Lower Class	29	7.25
	Middle Class	371	92.75
Residence	Urban	273	68.25
	Rural	127	31.75
Education level	Pursuing UG	176	44.00
	Pursuing PG	224	56.00

The data presented in Table 2, reveals that in response to statement 1, i.e., Blood volume that donated in every blood donation majority of respondents (boys=61.0%, girls=59.0%) had knowledge, in response to statement 2, i.e., The time interval between two successive donations majority of respondents (boys=78.0%, girls=73.0%) had no knowledge, in response to statement 3, i.e., Suitable age for blood donation majority of respondents (boys=63.0%, girls=59.0%) had no knowledge, in response to statement 4, i.e., Minimum weight for blood donation (boys=57.0 %, girls=54.0%) had no knowledge, in response to statement 5, i.e., Should blood be tested before donation majority of respondents (boys=93.0%, girls=91.0%) had knowledge, in response to statement 6, i.e., Do all surgical operations need blood transfusion majority of respondents (boys=79.0%, girls=83.0%) had knowledge

and in response to statement 7, i.e., Could infections be transmitted by blood majority of respondents (boys=94.0%, girls=96.0%)

had knowledge. Statistically, nonsignificant difference was observed between boys and girls in response to all statements ( $P>0.05$ ).

**Table 2: Knowledge of students regarding blood donation in Kashmir valley**

S.No.	Statement	Gender	Yes (%)	No (%)	No Idea (%)	Chisquare	P-value
1.	Blood volume that donated in every blood donation	Boys	244(61.0)	94 (23.5)	62 (15.5)	0.901	>0.05
		Girls	236 (59.0)	92 (23.0)	72 (18.0)		
2.	The time interval between two successive donations	Boys	312 (78.0)	48 (12.0)	40 (10.0)	3.138	>0.05
		Girls	292 (73.0)	64 (16.0)	44 (11.0)		
3.	Suitable age for blood donation	Boys	252 (63.0)	99 (24.75)	49 (12.25)	1.415	>0.05
		Girls	236 (59.0)	112 (28.0)	52 (13.0)		
4.	Minimum weight for blood donation	Boys	228 (57.0)	84 (21.0)	88 (22.0)	4.202	>0.05
		Girls	216 (54.0)	108 (27.0)	76 (19.0)		
5.	Should blood be tested before donation	Boys	372 (93.0)	8 (2.0)	20 (5.0)	3.353	>0.05
		Girls	364 (91.0)	17 (4.25)	19 (4.75)		
6.	Do all surgical operations need blood transfusion	Boys	0(0.0)	316 (79.0)	84 (21.0)	2.079	>0.05
		Girls	0(0.0)	332 (83.0)	68 (17.0)		
7.	Could infections be transmitted by blood	Boys	376 (94.0)	12(3.0)	12(3.0)	1.684	>0.05
		Girls	384 (96.0)	8(2.0)	8(2.0)		

The data presented in Table 3, reveals that in response to statement 1, i.e., Blood donation is a good habit, majority of respondents (boys= 98.0%), girls=96.0%) agree, in response to statement 2, i.e., There is no need to give incentives to those who donate, majority of respondents (boys= 82.0%), girls=87.0%) had no idea, in response to statement 3, i.e., Blood donation is safe, majority of respondents (boys=54.0%), girls=56.0%) agree, in response to statement 4, i.e., I will donate if friend needs blood (boys=83.0%), girls=81.0%) majority of respondents agree, in response to statement 5, i.e., I will donate if there is a campaign, majority of respondents (boys= 43.0%), girls=39.0%) had no idea, in response to statement 6, i.e., I will donate if there is an emergency situation, majority of respondents (boys=77.0%), girls= 61.0%) agreed, in response to statement 7, i.e., I will accept blood donation, majority of respondents (boys=77.0%), girls=80.5 %) agreed, in response to statement 8, i.e., Do you encourage relatives/friends to donate blood, majority of respondents (boys=83.0%), girls=77.0%) reported no, in response to statement 9, i.e., Blood donation does not lead to anemia, majority of respondents (boys=63.0%), girls=59.0%) agreed. Statistically, nonsignificant difference was observed between boys and girls in response to 1,2,3,4, 7 statements ( $P>0.05$ ) and significant difference was observed in statement 5, 6 and 8.

**Table 3: Attitude of students towards blood donation in Kashmir valley**

S.No.	Statement	Gender	Yes (%)	No (%)	No Idea (%)	Chisquare	P-value
1.	Blood donation is a good habit	Boys	392 (98.0)	0 (0.0)	8 (2.0)	2.749	>0.05
		Girls	384 (96.0)	0 (0.0)	16 (4.0)		
2.	There is no need to give incentives to those who donate	Boys	328 (82.0)	28 (7.0)	44 (11.0)	3.820	>0.05
		Girls	348 (87.0)	20 (5.0)	32 (8.0)		
3.	Blood donation is safe	Boys	216 (54.0)	68 (17.0)	116 (29.0)	4.599	>0.05
		Girls	224 (56.0)	84 (21.0)	92 (23.0)		
4.	I will donate if friend needs blood	Boys	332 (83.0)	20 (5.0)	48 (12.0)	0.621	>0.05
		Girls	324 (81.0)	24 (6.0)	52 (13.0)		
5.	I will donate if there is a campaign	Boys	172 (43.0)	92 (23.0)	136 (34.0)	6.521	<0.05
		Girls	156 (39.0)	124 (31.0)	120 (30.0)		
6.	I will donate if there is an emergency situation	Boys	308 (77.0)	24 (6.0)	68 (17.0)	24.203	<0.01
		Girls	244 (61.0)	36 (9.0)	120 (30.0)		
7.	I will accept blood donation	Boys	308 (77.0)	12 (3.0)	80 (20.0)	5.064	>0.05
		Girls	322 (80.5)	19 (4.75)	59 (14.75)		
8.	Do you encourage relatives/friends to donate blood	Boys	56 (14.0)	332 (83.0)	12 (3.0)	23.940	<0.01
		Girls	44 (11.0)	308 (77.0)	48 (12.0)		
9.	Blood donation does not lead to anemia	Boys	252 (63.0)	20 (5.0)	128 (32.0)	1.426	>0.05
		Girls	236 (59.0)	24 (6.0)	140 (35.0)		

Note:  $p<0.01$ : Significant at 0.01 level and  $p<0.05$ : Significant at 0.05 level

The data presented in Table 4, reveals that majority of respondents (boys= 81.0% and girls=73.0%) reported that they donated blood as relative's need blood, boys=6.0 % and girls=16.0 % reported that they donate blood for moral satisfaction, boys=7.0 % and girls=9.0 % reported that they donate blood as an experience and boys=8.0% and girls= 2.0% donate blood being in a group of donors. Statistically, nonsignificant difference was observed between boys and girls in response to all statement 3 ( $P>0.05$ ) and in response to other statement significant difference was observed ( $p<0.01$ )

**Table 4: Causes/Readiness of blood donation among University students under study**

S.No.	Cause of blood donation	Gender	Number of Respondents (%)	Z	-value	P-value
1.	Moral satisfaction	Boys	24 (6.0)	4.58		<0.01
		Girls	64 (16.0)			
2.	Relative's need	Boys	324 (81.0)	2.70		<0.01
		Girls	292 (73.0)			
3.	As an experience	Boys	28 (7.0)	1.32		>0.05
		Girls	36 (9.0)			
4.	Being in a group of donors	Boys	32 (8.0)	3.93		<0.01
		Girls	08 (2.0)			

Note:  $p<0.01$ : Significant at 0.01 level and  $p<0.05$ : Significant at 0.05 level

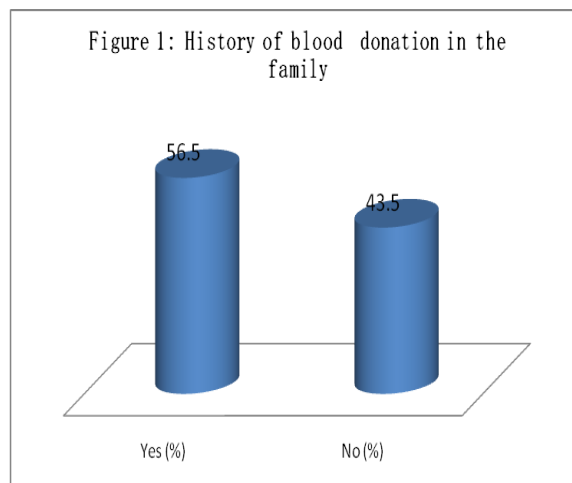
The data presented in Table 5, reveals that regarding statements related to causes of non-blood donation, 24.0% boys and 21.0% girls reported that they never thought about blood donation, 39.0% boys and 44.0% girls reported that they were not being asked to donate, 7.0% boys and 4.0% girls reported that they don't know how, when, where to donate, 17.0% boys and 21.0% girls reported that they fear of drawing blood, 9.0% boys and 7.0% girls reported that they fear of transmitted diseases and 4.0% boys and 3.0% girls reported that there is no specific cause for non-blood donation. Statistically, nonsignificant difference was observed between boys and girls in response to all statements ( $P>0.05$ ).

**Table 5: Main Causes of blood non-donation among University students under study**

S.No.	Cause of non-blood donation	Gender	Number of Respondents (%)	Z	-value	P-value
1.	Never thought about blood donation	Boys	96 (24.0)	1.02		>0.05
		Girls	84 (21.0)			
2.	Were not being asked to donate	Boys	156 (39.0)	1.44		>0.05
		Girls	176 (44.0)			
3.	Don't know how, when, where to donate	Boys	28 (7.0)	1.87		>0.05
		Girls	16 (4.0)			
4.	Fear of drawing blood	Boys	68 (17.0)	1.44		>0.05
		Girls	84 (21.0)			
5.	Fear of transmitted diseases	Boys	36 (9.0)	1.04		>0.05
		Girls	28 (7.0)			
6.	No specific cause	Boys	16 (4.0)	0.77		>0.05
		Girls	12 (3.0)			

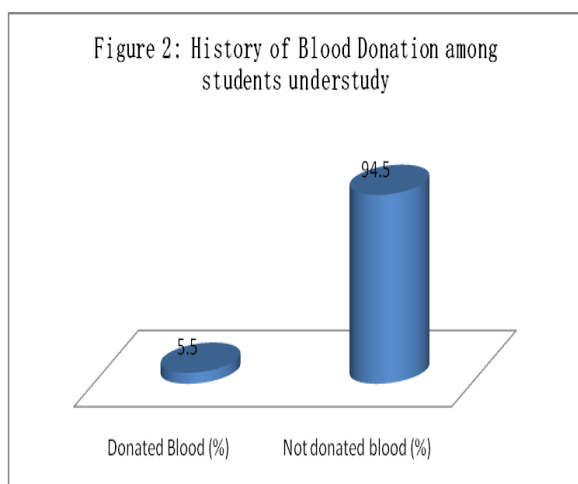
Note:  $p<0.01$ : Significant at 0.01 level and  $p<0.05$ : Significant at 0.05 level

The data presented in Figure 1, reveals that 56.5% respondents reported that they witnessed their family member donating blood to any own family member or relative/friend. It is a fact that in Kashmir, we face shortage of blood as we have frequent accidents, killings, injuries due to ongoing armed struggle in Kashmir. Every family willingly or unwillingly is supposed to be ready for blood donation. The respondents further revealed that in hospitals poor and helpless people are not supported in case of emergency. They are forced to manage blood of their own.





The data shown in Figure 2, reveals that 5.5% respondents reported that they have donated blood and 94.5% reported that they never donated blood. The reason for not donating blood as per respondents was lack of awareness and motivation towards blood donation.



The current work is the first attempt to know the attitude of University students for blood donation in Kashmir valley. It forms the base line data to know the importance of voluntary blood donations. The study enables to know the various methods and causes that influence the person to become voluntary blood donors. The present result showed that males constituted more percentage for blood donation compared to females which was in corroboration with the findings of Shenga

and Sengupta (2008) and Sabuet al., 2011 which is attributed to the fact that female donors believe it may lead to anemia in them (Montazeri et al., 2016). Although, the present result showed the lack of awareness in terms of health benefits among the students for blood donation to become voluntary blood donors. The present study revealed that that only 5.5% of the respondents had the history of blood donation and among them only 90% had positive attitude towards blood donation. The main reason for this can be attributed to the fact that people mostly believe that blood donation causes anemia, weakness and mostly makes person's immune system weak (Zaller et al., 2005). Further, result indicated that both boys and girls had willingness to donate blood although continuous awareness is mandatory to motivate them (Lemmens et al., 2005). The current study is highly in line with the findings of Abdel Gader et al. (2011) who in their study found that most of the donors give direct blood to their friends and family members only at the time of need so as to reduce the risk of contagious diseases. Our findings are in coherent with the results of Olaiya et al. (2004) who found about 54.4% of the people in Nigeria studying in University Teaching Hospital believed that blood donation is the main cause for the spread of AIDS and Hepatitis.



Figure 3: Students participating in blood donation camp.

Despite of the positive attitude among the university students of Kashmir still the voluntary donation percentage of students is very low so need of the hour is to make various educational programmes to start the initiative of blood donation camps so as to motivate students for Voluntary blood donation to keep blood stored in blood banks rather than to give blood at the time of need. The information regarding the benefits of long term blood donation is essential as it reduces the danger of cardiovascular diseases. The current study was the attempt to motivate the students towards voluntary blood donation (Wiwaniitkit, 2002).

The pictures show above reveals that students are happily participating in blood donation camp. It is encouraging that students, boys as well as girls are interested in such activities provided they are properly guided about the benefits of blood donation.

## CONCLUSION

The current study revealed that inadequate knowledge was prevalent among a substantial proportion of university students in Kashmir, and there was a significant disparity in knowledge and attitude towards blood donation between male and female students understudy. Furthermore, despite the positive attitude among students towards blood donation, only 5.5% of them reported a history of blood donation. There are many areas of improvement by which we can motivate youth to donate blood voluntarily. The current study reported that fear, lack of awareness and facilities for blood donation are the main barriers to blood donation. The students should be made aware about the importance of blood donation as their blood can save someone's life and by taking fruits and vegetables a person can easily increase the level of hemoglobin. The blood level can be increased significantly in our body by incorporating vegetables like beetroot, broccoli, fresh green leafy vegetables, Lentils, legumes and pumpkin seeds. Further, the Unani doctors suggest intake of

Magzeyat, Magzey Badam, Akhroot, Pista, Pomegranate, Grapes, dry fruits can improve blood level in our body.

Educational programs, religious awareness and blood donation camps are necessary to motivate and increase awareness of university students towards voluntary blood donation rather than donating blood on need.

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