

# Cross Sectional Descriptive Study on -Knowledge, Attitude, and Practice (KAP) About Blood Donation in a Rural District Secondary Care Hospital

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## How to cite this article:

Divya N S, Jaikar Sharat Kumar B. Cross Sectional Descriptive Study on -Knowledge, Attitude, and Practice (KAP) About Blood Donation in a Rural District Secondary Care Hospital. Indian J Pathol Res Pract 2020;9(3):283-291.

## Abstract

**Background:** Human Blood is considered as “liquid of life” as it is not replaced by any artificially prepared medicine, though there are tremendous advances in medical sciences. On the other hand advances in medicine have increased the requirement of blood and its products. Globally there is huge disparity between demand and supply. India being the 2<sup>nd</sup> most populous country in the world is not different with global statistics and has a huge blood requirement, but ironically voluntary blood donation is meager. Many studies done outside India have shown that understanding Knowledge, Attitude and Practice (KAP) about blood donation have helped the governments and health care policy makers to fulfill the pitfalls, thereby increasing the number of voluntary blood donations. In a country like India, where myths, misconceptions, taboos and superstitions pose a barrier to deliver healthcare specially hospitals which cater rural population KAP studies will help to understand and devise a system which would encourage voluntary blood donors.

**Objective:** To study Knowledge, Attitude and Practice (KAP) about blood donation, in people attending rural district secondary care hospital.

**Materials and Methods:** A cross sectional descriptive study among outpatients and inpatients attending rural district hospital using self developed questionnaire preferably multiple choice questions (MCQ'S) pattern, with paper and pencil technique. SPSS software and MS excel sheet were used to analyze the data.

**Results:** Analysis of data revealed most of the blood donors were middle aged men compared to their counterpart women. High score knowledge about blood donation was noted among graduates and post graduates with comparable results among voluntary blood donor for more than five times. Middle class people had more number of donors compared to higher class and lower class. Attitude to donate a friend or a relative was common compared to anonymous donation (Altruism)104(28.88%). 231(64.16%)of people knew where blood bank in their locality located.68(18.88%)felt happy and satisfied about blood donation. Only 86(23.88%) donors were encouraged by their family.

**Conclusion:** Knowledge, Attitude and Practice (KAP) about blood donation is affected by regional culture, religion and socioeconomic factors. By accessing KAP of the community shortcomings can be met which could change the KAP in a direction to improve voluntary donations. In continuation to this thought of donating blood can be brought in to practice by using social, mass or print media.

**Keywords:** Attitude; Blood donation; Knowledge; Practice; Voluntary.

## Introduction

The theme for the Blood donor day 2020 is 'Safe Blood Saves Lives' which was promoted with the slogan 'Give blood and make the world a healthier place. Health is a human right; everyone in the world should have access to safe blood transfusions, when and where they need them. Every few seconds, someone, somewhere, needs blood. Transfusions of blood and blood products save millions of lives every year. The world needs enough safe blood for everyone in need. Of the 118.5 million blood donations collected globally, 40% of these are collected in high-income countries, home to 16% of the world's population. Based on samples of 1000 people, the blood donation rate is 31.5 donations in high-income countries, 15.9 donations in upper-middle-income countries, 6.8 donations in lower-middle-income countries and 5.0 donations in low-income countries.<sup>1</sup>

Supreme Court of India banned professional blood donation in 1996, introduced mandatory licensing of blood banks, and directed the government, through National AIDS Control Organization (NACO), to establish the National and State Blood Transfusion Councils (NBTC/SBTC), to develop policies and programmes for improvements in blood banks.

In 2002, NACO adopted the WHO Guidelines on the Clinical Use of Blood. In 2003, the Government of India framed and adopted the National Blood Policy (NBP). In 2013, India was among the 51 countries of WHO participating in the 'Rome declaration' on achieving self-sufficiency in safe blood and blood products based voluntary non-remunerated donation.

According to the World Health Organization (WHO) recommendations, for any country to meet the minimum demand for blood, the donation should be at least 1% to 3% of the population. India has 50% of eligible donors,<sup>2</sup> 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,<sup>3</sup> 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.<sup>4</sup> Blood transfusion services in India are affected by the multiplicity of controls, with licensing being under Drug Controller General of India, policy under National and State Blood transfusion Councils and implementation with the states.<sup>5,6</sup> A mere 2760 blood banks cater to a population of 1.33 billion.<sup>7,8</sup>

along with this myths, misconceptions, taboos and superstitions pose a barrier to blood donations. 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 will be able to appreciate the outlook of the people regarding behavior and suggest relevant remedial measures especially in blood banks which cater rural population. Hence this KAP study was undertaken which would help to understand and devise a system to encourage voluntary blood donors.

## Materials and Methods

It was a non experimental cross section quantitative study, done as first come first serve basis, pre-tested structured self administered questionnaire was prepared based on data collection tool adopted by WHO for assessing practices of voluntary blood donation and from previous studies conducted.<sup>9,10,11,12,13</sup> after informed consent. Correct answers were developed from Indian Red Cross donation FAQ.

Before commencement of actual data collection, data collectors were trained and emphasized on objective, methodology of survey and were taught to approach respondents. Through out the study investigators supervised the data collection. Questionnaire needed 15 minutes to be completed, filled questionnaire were collected and checked for accuracy or any blank answers at the time of data collection.

Questionnaire included questions covering 6 areas in demographic data, 14 Questions on knowledge, 5 questions on practice, barrier, and motivation. Based on knowledge those who gave correct answers were given '1' point each and '0' for incorrect or don't know. Question related to attitude were phrased in a '5' point Likert scale with '5' for strongly agree and '1' for strongly disagree. Those who strongly agree and agree were considered to have positive attitude.

Statistical analysis was done by entering data in computer by using Micro Soft excel 2010 and SPSS (Statistical package for social sciences- version 20.0) software for windows for deriving mean value, standard deviation, maximum and minimum values. Correlation was calculated using pearsons formula "p" value of less than 0.05 was considered statistically significant. Man whitney test was used to comparison between two groups.

**Results**

The study included 400 participants out of which 40 were excluded because of incomplete data. The results of 360 people are presented here.

**Table 1:** Frequency and percentage distribution of subjects on the basis of their socio-demographic profile (N = 360).

	n	Percentage
Gender		
- Male	286	79.44
- Female	74	20.55
Age (yrs)		
- 18 to 25	100	27.77
- 26 to 35	184	51.11
- 36 to 45	64	17.77
- 46 to 55	12	03.33
Marital status		
- Married	254	70.55
- Unmarried	106	29.44
Education		
- Literate	87	24.16
- Secondary (10 <sup>th</sup> )	96	26.66
- Senior secondary (12 <sup>th</sup> )	56	15.55
- Graduate	105	29.16
- Postgraduate and above	16	04.44
Occupation		

- Professional	24	06.66
- Semi-professional	77	21.38
- Clerical/shop owner/farmer	167	46.38
- Semi-skilled worker	32	8.88
- Student	60	16.66
Monthly family income in Rupees		
- Below 2000	2	00.55
- 2001 to 5000	45	12.5
- 5001 to 10000	102	28.33
- 10001 to 20000	135	37.5
- 20001 and above	76	21.11

*Demographic characteristics*

Demographic characteristics are presented in Table-1. The maximum participating group was between 26 to 35 years age (51.11%), followed by 18 to 25 years 100 (27.77%). Only 12% of the participants were above 45 years of age, none above 55 years. Males were 286 (79.44%) where as Females were 74 (20.55%). Married participants were 254 (70.55%) as compared to unmarried 106 (29.44%). Majority people had graduation 105(29.16%) and post graduates were 16(4.44%). Most of participants were from middle class, either had own small scale business or were farmers.

**Table 2:** Knowledge on blood donation among the participants (n=360).

Question		n	Percentage
Do you know where blood bank in your locality is?	Yes	231	64.16
	No	129	35.83
Do you know your blood group?	Yes	280	77.77
	No	80	22.22
Do you know about Rh typing?	Yes	206	57.22
	No	154	42.77
Do you know how many types of blood groups are there?	Yes	250	69.44
	No	110	30.55
Do you know which blood group people are universal donors?	Yes	186	51.66
	No	174	48.33
Can donor be infected by donating blood?	Yes	86	23.88
	No*	184	51.11
How often can an individual donate?	I don't know	90	25.00
	Weekly	10	02.77
	Every Month	43	11.94
	Once in 3 months*	192	53.33
	Once in Six Months	68	18.88
Who is able to donate blood?	Yearly	18	05.00
	I don't know	29	08.05
	Men (All ages)	14	03.88
	Women (All ages)	18	05.00
	Young males/ females	110	30.55

	Old males/females	34	9.44
	Any Healthy Adult*	184	51.11
What volume of blood is collected during each donation?	150-200 ml	24	06.66
	300-350 ml*	167	46.38
	700-750 ml	86	23.88
	1000 ml	5	01.38
	I don't know	78	21.66
What is the duration of a donation process?	Less than 20 Min	20	05.55
	20 - 40 min*	132	36.66
	More than 60 min	88	24.44
	I don't know	120	33.33
Is blood required in emergencies?	Yes*	185	51.38
	No	54	15.00
	I don't know	121	33.61
Can blood be stored?	Yes*	201	55.83
	No	54	15.00
	I don't know	105	29.16
Can blood be donated while keeping a fast?	Yes	68	18.88
	No*	186	51.66
	I don't know	106	29.44
Is there any age limitation on blood donation?	Yes*	206	57.22
	No	56	15.55
	I don't know	98	27.22
Can women donate blood if she is pregnant?	Yes	45	12.50
	No*	212	58.88
	I don't know	103	28.66
Do you believe some diseases are transmitted through blood?	Yes*	130	36.11
	No	68	18.88
	I don't know	162	45.00
Do you know laboratory tests are mandatory for donated blood?	Yes*	156	43.33
	No	84	23.33
	I don't know	120	33.33
Can diabetic patient on insulin donate blood?	Yes	94	26.11
	No*	112	31.11
	I don't know	154	42.77
Can an uncontrolled hypertensive patient donate blood?	Yes	102	28.33
	No*	176	48.88
	I don't know	82	22.77
Can people with any blood group donate blood?	Yes*	178	49.44
	No	56	15.55
	I don't know	126	35.00

The data depicting knowledge of blood donors about blood donation is presented in Table 2, and shows, out of 20 questions assessing the knowledge, the mean of right answers number, by participants was 12 answers. The majority of respondents (216:60%) showed sufficient knowledge ( $\geq 16$  right answers to questions assessing knowledge), while (144:40%) showed below average knowledge regarding blood donation. Majority, 231(64.16%) knew where the blood bank was located and 167 (46.38%) knew the time required to donate blood.

A total of 280 (77.77%) blood donors were aware of their blood group and 206 (57.22%) about Rh factor. Encouragingly, 250 (69.44%) knew about different types of blood group and 186 (51.66%) about universal donor group, respectively. A total of 185 (51.38%) donors had knowledge regarding type of patients who need blood transfusion, and 130 (36.11%) donors were aware of the diseases that a person can acquire by receiving infected blood and 156(43.33%) were familiar with the investigations that are done before donating blood.

In terms of attitude towards blood donation depicted in Table 3, most of the people had a positive attitude (strongly agree and agree) regarding blood donation. A total of 184 (51.11%) participants believed that blood donation is important for the community and 196 (54.44%) of them had a positive feeling about blood donation procedure followed in blood banks. Altruism or selfless blood donation to anonymous persons, was seen in 104 (28.88%) in contrast with the fact that 215 (59.72%) persons would donate for their patient relative. 194 (53.88%) believed that gift or money should be rewarded for blood donation. Majority 156 (43.33%) believed donating blood is good habit where as 68 (18.88%) thought it could cause anemia, 94 (26.11%) believed it would lower immunity and 78 (21.66%) believed to have donating blood would harm donors health.

The practice of the donors has been shown in Table 4. It was observed that 96 (26.66%) had donated blood. 8 (2.22%) had donated blood more than 5 times. Remaining 264 (73.33%) had not donated blood. The majority, 74 (20.55%), donated blood in camp or government hospital. 90 (25%) said that they did not feel any side effect due to nation. Many people in the study felt that their family (274:76.11%) or parents (98:27.22%) did not encourage to donate blood. Our study observed requests of blood donation on social media 84 (23.33%) did not influence about voluntary donation. It's discouraging to note that more than 50% people felt that there is not enough encouragement in work place or village panchayat level about voluntary blood donation.

**Table 3:** Attitude toward blood donation among the participants (n=360).

Question	n	Percentage	
Do you think that donating blood is a good habit?	Yes*	156	43.33
	No	104	28.88
	I don't know	100	27.77
Do you think that donating blood would harm donor's health?	Yes	78	21.66
	No*	180	50.00
	I don't know	102	28.33
Do you think that donating blood leads to anemia?	Yes	68	18.88
	No*	206	57.22
	I don't know	86	23.88
Do you think donating blood lowers immunity?	Yes	94	26.11
	No*	168	46.66
	I don't know	98	27.22
Will you donate blood when a patient relative needs?	Yes	215	59.72
	No	85	23.61
	I don't know	60	16.66
Will you donate blood to anonymous patients?	Yes	104	28.88
	No	159	44.16
	I don't know	97	26.94
Should donors be giving a gift/money for donation?	Yes	194	53.88
	No	100	27.77
	I don't know	66	18.33
Do you feel that donation is important for community?	Yes	184	51.11
	No	93	25.83
	I don't know	83	23.05
What is your feeling about the procedure in blood banks\hospitals?	Positive	196	54.44
	Negative	85	23.61
	Neutral	79	21.94
Do you agree that voluntary blood donation is best source to make blood safe	Yes	158	43.88
	No	56	15.55
	I don't know	146	40.55
Do you think blood donation is a religious duty?	Yes	112	31.11
	No	98	27.22
	I don't know	150	41.66

**Table 4:** Practice of blood donation among the participants (n=360).

Questions		n	Percentage
Have you ever donated blood before?	Yes	96 (66-M) (30-F)	26.66 (18.33-M) (8.33-F)
	No	264	73.33
If donated blood before ... How many times?	Once	40	11.11
	Twice	12	03.33
	Three to four times	36	10.00
	More than five times	8	02.22
	I have not donated blood	264	73.33
	When was the last time you donated blood	In the current year	18
Before one year or more		78	21.66
I have not donated blood		264	73.33
If you are a donor, where was the last time you donated your blood?	In the camp or blood bank in government hospital	74	20.55
	In private hospitals or blood bank	22	6.11
	I have not donated blood	264	73.33
If you donated blood before, will your last experience motivate you to donate again?	Yes	68	18.88
	No	28	07.77
	I have not donated blood	264	73.33
If you are a donor, did you donate blood regarding someone asking for in social media websites (Twitter, Face book, What's app ... etc.)	Yes	12	03.33
	No	84	23.33
	I have not donated blood	264	73.33
	Did you feel any side effects after donating blood?	Yes	6
No		90	25.00
I have not donated blood		264	73.33
If you have donated blood, Why did you donate blood in your last donation?	A friend or relative needed blood	65	18.05
	Voluntary	8	02.22
	Rewarding	23	06.38
	I have not donated blood	264	73.33
Have you ever seen any public media that calls people to donate blood?	Yes	114	31.66
	No	80	22.22
	I don't know	166	46.11
Do you encourage relatives/friends to donate their blood voluntarily?	Yes	245	68.05
	No	115	31.94
Does your family encourage you to donate blood?	Yes	86	23.88
	No	274	76.11
	What is your parent's attitude regarding blood donation?	Supportive	59
Against blood donation		98	27.22
Neutral		103	28.61
I don't know		100	27.77
Have you ever received blood before?	Yes	65	18.05
	No	293	81.38
	I don't know	2	00.55
Have you had lectures/courses regarding the importance of blood donation organized at your working place or village panchayat.	Yes	6	01.66
	No	354	98.33



Has your working place or village panchayat organized a blood donation camp, or regulars ones, since you attended it?	Yes	16	04.44
	No	344	95.55
If your working organization or village panchayat organizes a blood donation camp within, would you participate and donate blood	Yes	189	52.50
	No	171	47.50

Table 5 demonstrates the major barriers for blood donation. 78 (21.66%) stated health reason for not donating blood which was highest among the reason for non volunteering, followed by “no

time” 45(12.5%), fears 44(12.22%), “no one asked me to donate about the blood” 29(8.05%) respectively. Besides majority 243(67.50%) felt giving money or gift would boost voluntary act of blood donation.

**Table 5:** Barriers and motivators to donate blood among the study sample (n=360).

Question		n	Percentage
If you are a non-donor, why have you not donated blood yet?	Fears	44	12.22
	Health reason	78	21.66
	No time	45	12.50
	Common stereotype	38	10.55
	No specific reason	30	08.33
	No one asked me to donate	29	08.05
	I have donated blood before	96	26.66
If you are a donor, why do you think non-donors do not donate their blood?	Fears	8	02.22
	Health reason	14	03.88
	No time	16	04.44
	Common stereotype	28	07.77
	No specific reason donate	30	08.33
	I have not donated blood	264	73.33
	What is the best motivation to donate blood?	Money/Gift for each donation	243
Approved certificates		117	32.50

## Discussion

The purpose of the study was to explore Knowledge, attitude and practice about blood donation in rural based district hospital of Karnataka. (India)

In our study most of the blood donors were in the age group of 26 to 35 years and male donors outnumbered the females in blood donation (68.75-M) Vs (31.25-F) which is similar observation noted in many studies in India<sup>14-18</sup> and other countries like Nigeria,<sup>19</sup> Israel,<sup>20</sup> and Iran<sup>21</sup> which is not the case in western countries. The reasons for less number of female donors were due to temporary deferrals like health reason (underweight, low hemoglobin levels) fear and socio cultural taboos (common stereotype) which is similar to the study conducted in north India<sup>22</sup> and WHO data base.<sup>23</sup>

Among pool of donors, one time donors represented 36(10%), twice donated by 12(3.33%), three to four times by 40(11.11%) and 8(2.22%) donated more than 5 times respectively.

Rate of blood donation was more among married middle aged men. Majority belonged to age group between 26 to 35. Educated and people who had already donated blood had more knowledge about blood donating practices, this is similar to other studies.<sup>24-27</sup>

In our study, the level of knowledge about blood donation services remains satisfactory similar to various studies conducted.<sup>28-31</sup> and also the fact that there is positive association between level of knowledge and education status of the donor, similar to studies done by Wiwanitkit et al,<sup>31</sup> Mousavi et al,<sup>32</sup> Shenga N et al,<sup>14</sup> and Sabu et al.<sup>33</sup>

Our study showed that study group knew about their blood group (77.7%) and its different types (69.4%). Most of them also had knowledge about location of blood bank services (64.16%). They also had good knowledge regarding age limits for blood donation (57.2%),but here was lack of knowledge about Transfusion transmitted infections (36.1%), and mandatory laboratory tests performed

on donated blood (43.3%). Most of them were unaware about side-effects of blood donations, who cannot donate blood eg. Certain medications like uncontrolled Diabetes mellitus (31.1%), and un-treated Hypertension (48.8%) . Blood donation drives and propaganda by blood bank and other NGOs may significantly contribute by educating people especially rural population where the role of social media and internet services are of limited use.

Attitude towards voluntary blood donations in blood donation camps are found much satisfactory and also reminders by blood bank personnel in motivating voluntary donation plays a significant role.<sup>34,35</sup> Most of donors knew about importance of blood in emergencies (51.1%). Attitude towards blood donation for incentives was 53.8% which is similar to other studies<sup>14,15,16,36 37</sup> and they also believed that voluntary donation is a safest option when compared to replacement donors (43.8%). In our study group main reason for hesitation and unwillingness to donate blood was the fear (12.22%) and citing simple health issues (21.66%), especially in female donors.

Regarding practice of blood donation most of donors were first time donors 40( 11.11%) especially in blood camps and didn't had any experience about motivation (73.3%) and social media exposure(73.3%) and neither received any educational lectures from educational institutions like universities, colleges, village panchayats and other cultural gatherings.

Religious activity play a major role in motivating local population to donate blood. Similar to most studies,<sup>38</sup> most of our donors think blood donation is a religious activity and it's an act of pleasing God., which is in contrast to the Nigerian study , where refusal of blood transfusion was observed due to religious beliefs. Thus religious factor could have either a positive or negative impact on blood donation.

## Conclusion

This study shows that having adequate knowledge, favorable attitude and safe practices had an positive impact on blood donation. On doing comparative analysis and assessing each individual blood donors through questionnaires not only improves knowledge, attitude and practices among blood donors but also clears myths and misconceptions associated with blood donation.

By understanding the knowledge, attitude and practice among community. Governments, national

health authorities and national blood services will know and work together to ensure systems and infrastructure are in place to increase collection of blood from voluntary, regular unpaid donors. Establish and strengthen quality assurance systems for blood and blood products to ensure safe blood, its products and also provide quality donor care to promote and implement appropriate clinical use of blood and oversee the whole chain of blood transfusion by disseminating information about the importance of giving blood.

However impact of KAP study will be known only when comparative analysis is done on a large scale to impart knowledge, improve practice and clear myths, misconceptions, taboos and superstitions about voluntary blood donation.

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