ORIGINAL ARTICLE

A Cross Sectional Study to assess Beliefs, Behaviours, and Opinions about Blood Donation among visitors of admitted patients at tertiary Care Hospital, Ahmedabad

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ABSTRACT

Background: A significant number of patients admitted to hospitals in low- and middle-income countries face the challenge of not having timely access to a safe and free blood supply and India is no exemption. **Aims & Objectives**: To assess beliefs, behaviours and the exploration of barriers about Blood Donation among visitors of admitted patients. **Methodology**: A cross section study was done among 356 visitors of admitted patients of tertiary care hospital of Ahmedabad city. Visitors were selected through non probability sampling technique from wards of hospital. **Results**: Average age was 39.1 ± 11.2 years and 53.9% were male. Only 21.3% people had done blood donation in the past ever. Male were significantly donated the blood ($p<0.0001$). 94.9% people found blood donation as an important act and 98.3% believed that it can save lives. 39.9% and 12.9% had a knowledge regarding minimum eligible age and weight for blood donor respectively. Donating blood would lead to weakness (37.8%), vertigo (13.3%), infection and HIV (17.8%). **Conclusion:** People may find blood donation as a significant step to prevent many deaths but very few of them had done blood donation in past ever. People are having fear and misconceptions that is preventing them from donating blood.

KEYWORDS

Blood Donation; HIV; Female; Fear

INTRODUCTION

Blood is considered as an essential fluid of body essential to regulate the body's systems and keeping homeostasis.(1) The demand for a safe supply of blood and blood components are increasing on a day to day worldwide, and country like India is no exemption.(2,3) Blood and blood components may come from donors such as unpaid volunteers, directed donors (friends/relatives) (4).

Numerous research studies have highlighted the potential of blood transfusions to save numerous lives and enhance overall health on a yearly basis. However, the quality of blood

and the accessibility of safe blood at an affordable cost continue to pose a significant challenge, especially in developing nations such as India (2–4). The issue of balancing the demand and supply of blood is becoming increasingly worrisome in both developed and developing countries(5,6). A study conducted by Roberts N et. al revealed that out of a total of 195 countries, 61% were found to have inadequate blood supplies to meet healthcare requirements(5). Notably, early findings indicated that India is facing the largest shortage of blood supply globally. It is widely acknowledged that the safest and most effective method of blood donation is through voluntary unpaid donations(7).

Previous studies have indicated that approximately 11% of individuals who required blood did not receive it worldwide in 2017. It is imperative to prioritize increasing public awareness and knowledge about blood donation, as well as fostering a positive attitude towards it, within national blood transfusion centers(8).

Prior research carried out in India observed the perspectives and driving forces behind blood donation among the people, revealing a range of misconceptions including concerns about infertility, reduced strength. Gender-specific barriers were also identified (often due to low haemoglobin levels), while many men claimed they were never approached to donate blood for patients(9–11).

Aims & Objectives:

- To evaluate the beliefs, behaviors, opinions regarding blood donation among visitors of admitted patients
- To explore the barriers to blood donation among visitors of admitted patients

Material & Methods

Study type & Study design: A cross-sectional study was conducted by among visitors of admitted patients at GCS Medical College, Hospital, and Research Centre in Ahmedabad city, Gujarat, India. The sample was selected through nonprobability sampling methods.

Study setting: Different Wards of GCS Medical College, Hospital, and Research Centre in Ahmedabad city, Gujarat, India

Study population: Visitors of admitted patients at GCS Medical College, Hospital, and Research Centre in Ahmedabad city

Study Duration: December 2022 to March 2023

Sample Size Calculation:

Sample size(N) was calculated using below formula,(12)

$N = z2\times(p\times q)/d2$,

The minimum sample size required, denoted as N, can be determined using the following parameters: z, which corresponds to the 95% confidence interval (z = 1.96); p, indicating the prevalence of voluntary blood donors (63.9%) in study done by Ramani K V at all, Study of blood-transfusion services in Maharashtra and Gujarat states, India;(13) q, calculated as (1 – p); and d, representing the acceptable margin of error (5%; 0.05).

$N = (1.96)2\times0.639\times (1 - 0.693)/ (0.05)2 = 354.$

Inclusion criteria: Those visitors who had given consent were selected for the study.

Data collection: Questionnaire was validated through senior community Medicine & Pathologist Expert and validated questionnaire through pretesting by pilot test. Interviews were taken with the help of pretested and semi-structured questionnaire containing demographic details, belief, behaviours, opinions and exploration of barriers regarding blood donation. Questionnaire was introduced to visitors of admitted patients in different wards of hospital in physical format and 356 interviews were taken those who have given consent. Non probability sampling technique was used to select visitors from the different wards of the GCS Hospital of Ahmedabad city.

Ethical issues & informed consent:

Institute's scientific and ethical committee's approval was taken for the current study (No. GCSMC/EC/Project/Approve/2022/449 dated 19th November 2022). Informed consent was taken from the selected participants.

Data entry and Analysis:

Data entry was carried out in Microsoft Excel 2021 and analysis was done using EpiInfoTM Version 7.2. A scoring system was developed to assess the knowledge of the participants. Participants were asked knowledge related questions and answer were scored as follows: 0 for wrong/no reply and 1 for correct reply.

The total scores obtained were classified categorically as: <3 'Poor', 3-6 'Average' and >6 'Good'. Pilot study was done to validate the scoring system.

RESULTS

Demographic details:

A total of 356 responses were documented, with 192 (53.9%) being males and 164 (46.1%) females. The largest group, 99 (27.8%), fell between the ages of 18 - 30 years, followed by 97 (27.2%) aged between 40 – 50 years. The mean age of the participants was 39.10±11.2 years. Among the 356 respondents, 123 (34.5%) were graduates, 60 (16.8%) had completed primary education, 72 (20.2%) had completed secondary education, 63 (17.6%) had completed tertiary education, and 11 (3%) were postgraduates. Among 356 participants, 104 (29.2%) were doing service, 116 (32.5%) were housewife, 53 (14.8%) were doing business and 33 (9.2%) were labourer.

Behaviour, Attitude and Opinion of Participants Towards Blood Donation:

Out of all the 356 participants, a mere 76 individuals (21.3%) have engaged in blood donation at some point in the past. The majority of the participants hold the belief that blood donation is a crucial deed and consider it a moral obligation that has the potential to save lives. Majority 351 (98.6%) would accept blood donation from other people. Figure 1 depicts detailed information on participant's attitude and opinion.(Figure 2)

Figure 1: Attitude and Opinion of Participants Towards Blood Donation

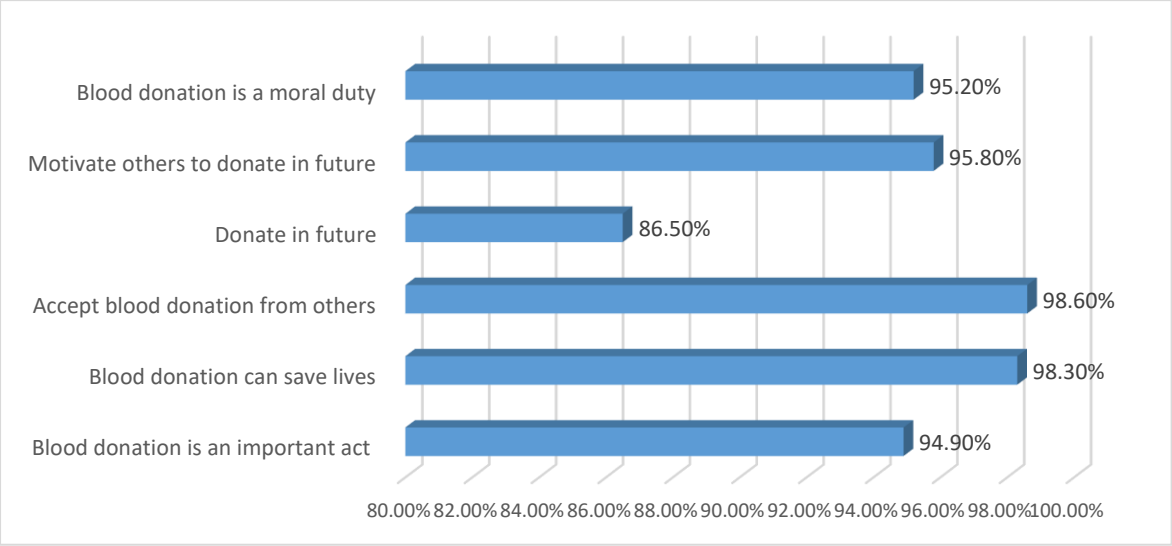


Table 1: Association of Demographic Variables and Participants Ever Donated Blood in Past

Socio Demographic Details		Frequency (N=356)	Ever Donated Blood		Chi-Square Test values P value Degree of freedom (df)
			Yes (%)	No (%)	
Gender	Male	192	71	121	X^2 =58.6
	Female	164	5	159	P<0.0001
					df=1
Age Group	18-30	99	20	79	X^2 =5.18
	30-40	92	20	72	p= 0.15
	40-50	97	27	70	df=3
	>50	68	9	59	
Education	Illiterate	27	0	27	X^2 =25.8*
	Primary/secondary/Higher secondary	195	29	166	P<0.0001
					df=3
	Graduate	123	41	82	
	Post graduate/professional	11	6	5	
Occupation	Service	104	33	71	X^2 =48.9*
	Business	53	22	31	P<0.0001

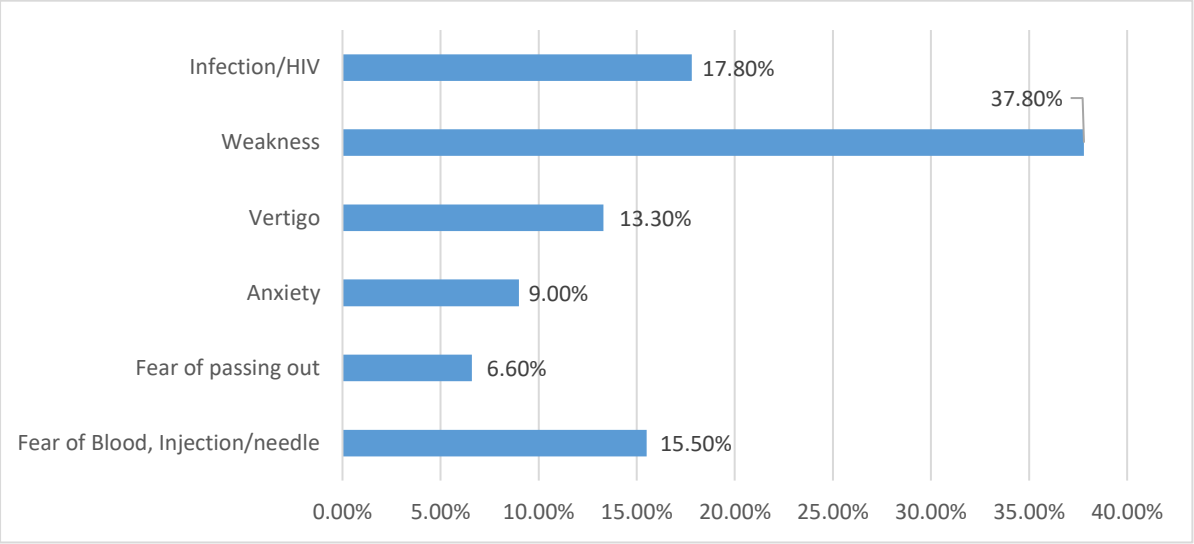
Socio Demographic Details	Frequency (N=356)	Ever Donated Blood		Chi-Square Test values P value Degree of freedom (df)
		Yes (%)	No (%)	
Housewife	116	0	116	df=4
Labourer	33	7	26	
Other	50	14	36	
*** Yates' correction was applied**				

Table 1 suggest that gender, education and occupation were statistically significant with participants ever donated blood in past.

Barriers toward Blood Donation:

Figure 2 describes that out of 356 participants only 45 (12.6%) had given the reason for not donating blood and among them majority of participants found weakness (37.8%) followed by infection/HIV (17.8%) followed by fear of blood, injection/needle (15.5%) as reason for not donating the blood.

Figure 2: Participant's Reasons for Not Donating Blood (n-45)



Knowledge and motivations about blood donation:

Approximately 39.8% of respondents had correct knowledge regarding eligible age for blood donation and only 12.9% had correct knowledge regarding eligible weight for blood donation. Out of 356 participants, only 19.9% knew which blood group is universal blood donor. Majority of the participants knew that during pregnancy (99.1%), menstruation (93.5%) and lactation (98.3%) one could not donate blood. According to the study survey, 18.8% of the participants stated that a person in good health can donate blood twice a year. In contrast, 42.4% and 12.9% of the respondents mentioned donating three and four times a year, respectively. 71.9% participants would prefer to donate in blood bank. Approximately 43.5% participants would donate blood to save lives and 19.1% would donate blood for family members only. Out of 356 participants, 23% refuse to donate blood regardless of reason. Regarding motivational factors, 37.4% believed that donor should be paid to promote blood donation and 85.4% believed that token gift or appreciation certificate should be given to donor as a motivational factor. Among study participants, 84% the individuals involved in the study expressed a desire to donate blood if granted time off from work.

Table 2: Relationship between Specific Demographic Factors and Awareness of Blood Donation Among Study Participants

Socio Demographic Details		Knowledge (score)			Chi-Square Test values
		Poor (<3)	Average (3-6)	Good (>6)	
Gender	Male	4 (2.1%)	174 (90.6%)	14 (7.3%)	X2 =7.20*
	Female	0 (0%)	138 (84.1%)	26(15.9%)	p=0.02; df=2
Age Group	18-30	4 (1.1%)	312 (87.7%)	40(11.2%)	X2 =1.37*
	30-40	1 (1%)	89 (90%)	9 (9%)	p=0.96
	40-50	2 (2.2%)	79 (85.8%)	11 (12%)	df=6
	>50	1 (1%)	86 (88.7%)	10(10.3%)	
Education	Illiterate	0 (0%)	58 (85.3%)	10(14.7%)	X2 =4.00*
	Primary/secondary/Higher secondary	4 (1.1%)	312 (87.7%)	40(11.2%)	P=0.67 df=6
	Graduate	0 (0%)	22 (81.5%)	5 (18.5%)	
	Post graduate/professional	4 (2.1%)	168 (86.1%)	23(11.8%)	
Occupation	Service	0 (0%)	112 (91.1%)	11 (8.9%)	X2 =7.07*
	Business	0 (0%)	10 (90%)	1 (1%)	p=0.52
	Housewife	4 (1.1%)	312 (87.7%)	40(11.2%)	df=8
	Labourer	2 (2%)	94 (90.4%)	8 (7.6%)	
	Other	0 (0%)	46 (86.8%)	7 (13.2%)	

*** Yates' correction was applied**

As table 2 depicts only gender was found statistically significant with the knowledge regarding blood donation among participants

DISCUSSION

In the current study, out of total 356 participants, 53.9% were male. Among total participants, only 21.3% people had done blood donation in the past ever. 94.9% people found blood donation as an important act and 98.3% believed that it can save lives. 39.9% and 12.9% had a knowledge regarding minimum eligible age and weight for blood donor respectively.

Based on the demographic data of the participants, a larger proportion were male in comparison to female, with the majority falling within the young age bracket of 18 to 30 years. Comparable results were documented in the KAP research conducted by Dubey(2), Samreen(14) and Uma(15).

The participants expressed favorable beliefs, actions, and viewpoints regarding blood donation. Additionally, most of them concurred that blood donation is a significant gesture that aids in saving lives. Joshi and Meakin carried out research on Indian non-donors residing in England and found a range of attitudes, mostly positive. Olaiya conducted a survey on Nigerian citizens, a developing nation, and noted that 92.9% of the respondents donated blood and exhibited positive attitudes towards blood donation. On the other hand, Majdabadi et al. documented moderate attitudes among medical students in Tehran(8).

In this research, the majority of participants cited weakness as the primary reason for not donating blood, followed by fear of infection/HIV, and fear of blood or injection/needle. A study conducted at a tertiary care center in Uttar Pradesh revealed that among those who had never donated blood, the main reasons were fear of pain/needle (47.8%), ill-health/co-morbidities (41.3%), and lack of opportunity (65.8%). Other reasons included lack of awareness (23.9%), nervousness (22.3%), belief that it is harmful for health (19.0%), and inconvenience(3.8%)(16,17,18). Abdurrahman and Saleh identified various barriers among blood donors, such as health problems, fear of blood, medical errors, time constraints, lack of necessary conditions for donation, and fear of acquiring infections like HIV(19).

The current research has effectively demonstrated that individuals in India display positive attitudes, opinions, and motivations towards blood donation. These study results are in line with previous research conducted in

various developed and developing nations. In essence, the study has showed a widespread and consistent pattern of positive attitudes and perceptions regarding blood donation across various geographical regions and economic backgrounds.(2,18,19)

In the present research, most of the participants suggested tokens, work leave, and financial funds as motivational rewards for blood donation. The results were quite similar to Alfouzan et al.'s study, which emphasized a day off (81.4%), tokens (31.5%), and money (18.9%) as important motivating factors. Likewise, Baseer et al. conducted a survey among university students and found that saving lives (98.4%), serving humanity (96.9%), and supporting family and friends (95.3%) were the primary motivations for donating blood.(20,21) Similar findings were present in study done by Samreen.(14)

Conclusion & recommendation

Blood donation is widely recognized as a crucial deed that has the potential to save lives. However, a mere fraction of individuals have actually engaged in this noble act in the past. Lack of knowledge regarding blood donation was found among participants and people are having fear and misconceptions that is preventing them from donating blood. There is a need for training and IEC activities like organizing blood donation camps and awareness programs to increase people's knowledge and specially among female for donating blood and remove their misconceptions as well as to motivate them for donating blood.

Limitation of the study

In the current study, Non probability sampling technique was used, it may introduce selection bias. Similar research can be done with representative sample to eliminate the bias.

Relevance of the study

This research, which focuses on attitudes, opinions, and motivations toward blood donation, can offer valuable insights into the overall blood supply situation not just in India but globally as well. This study also explored the barriers for the blood donation, which can be eliminated and therefore rate of the blood donation can be increased.

Authors Contribution

HP: Design, Definition of intellectual content, Literature search, Data acquisition, Data analysis, Statistical analysis, Manuscript preparation, editing, review, Guarantor **AP:** Concepts, Design, Definition of intellectual content, Literature search, Data acquisition, Data analysis, Statistical analysis, Manuscript preparation, editing, review, Guarantor **MM:** Design, Literature search, Data acquisition, Data analysis, Manuscript preparation, editing, review, Guarantor **SC:** Design, Literature search, Data acquisition, Data analysis, Manuscript preparation, editing, review, Guarantor

Financial Support and Sponsorship

NIL

Conflict of Interest

There are no conflicts of interest.

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Declaration of Generative AI and AI Assisted Technologies in the writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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