

Knowledge, Attitude and Practice Regarding Blood Donation among General Populace: A Cross Sectional Study in a Valley District of Manipur, India

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Abstract

Background: Many patients who require blood transfusion do not have timely access to safe blood and blood products. WHO states that at least 1% of the nation's population should donate blood voluntarily to meet the basic requirements of blood. In India, there is a need for about 8 million units of blood every year. The need is predicted to increase by 5% every year. This study aimed to assess the knowledge, attitude and practices regarding blood donation among the general populace of a valley district in Manipur.

Methods: A cross-sectional study was conducted among the general populace of a valley district in Manipur. Data was collected using a structured questionnaire through face-to-face interview and was summarized using descriptive statistics like mean, standard deviation and percentages. Association between variables of interest was analysed using chi square test.

Conclusion: About one-fourth of the participants in this study had adequate knowledge (25.3%), favourable attitude (27.9%) and had donated blood at least once (27.6%). Males were more likely to have adequate knowledge regarding blood donation and to have donated blood compared to females. There was a significant association between educational qualification and religion with the level of knowledge, attitude and practice of blood donation.

Keywords: Knowledge, attitude, practice, blood donation, India.

Introduction

Human blood is a vital life-saving component capable of saving millions of lives. Nearly 120 million units of blood are donated every year. However, this is not sufficient to meet the global needs. According to WHO, at least 1% of the nation's population

should donate blood voluntarily to meet the basic requirements for blood and blood products.¹ Blood scarcity is frequently encountered in health-care settings and is attributable to an imbalance between increasing demand for safe blood and blood products and failure to organize regular blood supply due to misconceptions, perceived harms and risks, and lack

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of motivation among potential donors. Of the 118.5 million blood donations collected globally, 40% are collected in high income countries, home to 16% of the world's population. In low income countries, up to 54% of blood transfusion are given to children under 5 years of age, whereas in high income countries, the most frequently transfused patient group is over 60 years of age, accounting for up to 75% of all transfusions.¹ An increase of 7.8 million blood donations from voluntary unpaid donors has been reported from 2013 to 2018. About 79 countries collect over 90% of their blood supply from voluntary unpaid blood donors whereas 56 countries collect more than 50% of their blood supply from family/ replacement or paid donors.¹ WHO recommends that all activities related to blood collection, testing, processing, storage and distribution should be coordinated at the national level through effective organisation and integrated blood supply networks. Out of 171 countries, 110 countries have specific legislation covering the safety and quality of blood transfusion including 79% of high income countries, 63% of middle income countries, 39% of low income countries.¹

In India, there is a need for about 8 million units of blood every year out of which only about one-third are obtained from voluntary donors. Replacement/ family donors account for nearly 45% of the blood donations in India. WHO stresses the fact that replacement blood donation needs to be discouraged and replaced by voluntary, nonremunerated blood donations. Paid/professional blood donations has been banned in India since 1998.² In Manipur, only 30% of the collected blood are from voluntary blood donors, making it one of the states with the least number of voluntary blood donors. Less than 0.5% of the state's population donated blood voluntarily. The need for blood donation is predicted to increase by 5% every year. Hence there is a need for massive mobilization about the significance of blood donation.³ Knowledge, attitude, and practice (KAP) studies are a commonly used tool to investigate various aspects of human behavior by assessing what people know (knowledge), how they feel about it (attitude), and what they actually do based on their knowledge and attitude (practice), enabling the investigator to better appreciate the outlook of the people regarding behavior and suggest relevant remedial measures.

This study aimed to assess the knowledge, attitude and practices regarding blood donation among the general populace of a valley district of Manipur.

Materials and Methods

A cross-sectional study was conducted from May 2022 to June 2022 among the general populace aged ≥ 18 years of a valley district in Manipur. There are 6 valley districts and 10 hilly districts in the state. As per Census of India (2011), the district had a total population of 237,399.

Sample size: Taking the prevalence of adequate knowledge regarding blood donation as 32% and an absolute error of 5%, a sample size of 348 was calculated.⁴

Sampling: Convenience sampling was done. Participants were selected from the 3 major marketplaces of the district according to the investigator's convenience.

Study instrument: A pretested structured questionnaire was used for data collection. The questionnaire consisted of 4 sections: background characteristics, knowledge regarding blood donation, attitude towards blood donation and practices of blood donation. For questions regarding knowledge, each correct response was given a score of 1. Incorrect response was given a score of 0. The maximum obtainable score was 13. Those who scored $\geq 75\%$ of the maximum obtainable score was considered as having adequate knowledge. For questions regarding attitude, each positive response was given a score of +1. Negative responses were given a score of -1. Neutral responses were given a score of 0. Maximum obtainable score was 7. Those who scored $\geq 75\%$ of the maximum obtainable score was considered as having favourable attitude.

Data collection: Data was collected through face-to-face interview.

Data analysis: Data collected was checked for completeness and consistency and entered into IBM SPSS 21 for Windows (IBM Corp.1995,2012). It was then summarized using descriptive statistics like mean, standard deviation and percentages. Chi square test was used to check for association between variables of interest. *P* value of less than 0.05 was taken as statistically significant.

Ethical issues: Ethical approval was obtained from the Research Ethics Board of Regional Institute of Medical Sciences, Imphal (No. A/206/REB/Prop(SP) 171/146/08/2022). Informed written consent was taken from all the participants. Identifiers like name and address were not taken and a unique code was allotted for each participant. Data was accessed only by the investigator.

Results

A total of 348 participants were included in the study. The median (IQR) age of the participants was 38 (17) years. Table 1 shows the background characteristics of the participants.

Table 1: Background characteristics of the participants (N=348)

Background characteristics	N (%)
Age*	
< 38 years	167 (47.9)
≥ 38 years	181 (52.1)
Sex	
Male	190 (54.6)
Female	158 (45.4)
Highest educational qualification	
No formal education	14 (4.3)
Class I-V	35 (10.0)
Class VI-X	72 (20.6)
Class XI-XII	135 (38.7)
Graduate and above	92 (26.4)
Occupation	
Health Care Worker	29 (33.3)
Non-Health Care Worker	319 (66.7)
Religion	
Christianity	62 (17.8)
Hinduism	203 (58.4)
Islam	21 (6.0)
Sanamahism	62 (17.8)

* Median age of the participants was 38 years

In this study, 88 participants (25.3%) had adequate knowledge regarding blood donation. About 27.9% (n=97) of the participants had favourable attitude towards blood donation. Only 27.6% (n=96) of the participants had ever donated blood of which more than half of them (n=55, 57.3%) had donated only once. About 57.3% (n=55) of those who had donated blood were replacement donors and the rest were voluntary donors. The most common reason for not donating blood was not being approached for blood donation (n=127, 50.4%) followed by fear of needle prick (n=41, 16.3%) and fear of self-harm (n=38, 15%). Only 7.5% (n=26) of the participants had ever

received blood transfusion of which more than half (n=18, 69.3%) had received transfusion only once.

Table 2 shows results of univariate analysis between background characteristics and level of knowledge. Males were more likely to have adequate knowledge regarding blood donation than females ($P=0.04$). Health care workers were more likely to have adequate knowledge regarding blood donation than non-health care workers ($P=0.00$). There was a significant association between educational qualification and religion with the level of knowledge ($P=0.00$ each).

Table 2: Association between variables of interest and knowledge regarding blood donation (N=348)

Variables of interest	Level of Knowledge		P
	Inadequate n (%)	Adequate n (%)	
Age*			0.35
< 38 years	121 (72.5)	46 (27.5)	
≥ 38 years	139 (76.8)	42 (23.2)	
Sex			0.04
Male	134 (70.5)	56 (29.5)	
Female	126 (79.8)	32 (20.2)	
Highest educational qualification			0.00
No formal education	14 (100.0)	0 (0)	
Class I-V	33 (94.3)	2 (5.7)	
Class VI-X	65 (90.3)	7 (9.7)	
Class XI-XII	104 (77.0)	31 (23.0)	
Graduate and above	44 (47.8)	48 (52.2)	
Occupation			0.00
Health Care Worker	3 (10.3)	26 (89.7)	
Non- Health Care Worker	257 (80.6)	62 (19.4)	
Religion			0.00
Christianity	43 (69.4)	19 (30.6)	
Hinduism	141 (69.5)	62 (30.5)	
Islam	19 (90.5)	2 (9.5)	
Sanamahism	57 (91.9)	5 (8.1)	

* Median age of the participants was 38 years

Table 3 shows results of univariate analysis between background characteristics and attitude. Health care workers were more likely to have a favourable attitude regarding blood donation

than non-health care workers ($P=0.00$). There was a significant association between educational qualification and religion with attitude ($P=0.00$ each).

Table 3: Association between variables of interest and attitude towards blood donation (N=348)

Variables of interest	Attitude		P
	Unfavourable n (%)	Favourable n (%)	
Age*			0.19
< 38 years	115 (68.9)	52 (31.1)	
≥ 38 years	136 (75.1)	45 (24.9)	
Sex			0.22
Male	132 (69.5)	58 (30.5)	
Female	119 (75.3)	39 (24.7)	
Highest educational qualification			0.00
No formal education	13 (92.9)	1 (7.1)	
Class I-V	33 (94.3)	2 (5.7)	

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Class VI-X	63 (87.5)	9 (12.5)	
Class XI-XII	93 (68.9)	42 (31.1)	
Graduate and above	49 (53.3)	43 (46.7)	
Occupation			
Health Care Worker	11 (37.9)	18 (62.1)	0.00
Non-Health Care Worker	240 (75.2)	79 (24.8)	
Religion			
Christianity	46 (74.2)	16 (25.8)	0.00
Hinduism	134 (66.0)	69 (34.0)	
Islam	17 (81.0)	4 (19.0)	
Sanamahism	54 (87.1)	8 (12.9)	

* Median age of the participants was 38 years

Table 4 shows results of univariate analysis between background characteristics and the practice of blood donation. Males were more likely to have donated blood than females ($P=0.00$). Health care workers were more likely to have donated blood

than non-health care workers ($P=0.00$). There was a significant association between educational qualification and religion with the practice of blood donation ($P=0.00$ each).

Table 4: Association between variables of interest and practice of blood donation (N=348)

Variables of interest	Ever donated blood		P
	No n (%)	Yes n (%)	
Age*			
< 38 years	121 (72.5)	46 (27.5)	0.98
≥ 38 years	131 (72.4)	50 (27.6)	
Sex			
Male	126 (66.3)	64 (33.7)	0.00
Female	126 (79.7)	32 (20.3)	
Highest educational qualification			
No formal education	14 (100.0)	0 (0)	0.00
Class I-V	32 (91.4)	3 (8.6)	
Class VI-X	62 (86.1)	10 (13.9)	
Class XI-XII	104 (77.0)	31 (23.0)	
Graduate and above	40 (43.5)	52 (56.5)	
Occupation			
Health Care Worker	7 (24.1)	22 (75.9)	0.00
Non- Health Care Worker	245 (76.8)	74 (23.2)	
Religion			
Christianity	45 (72.6)	17 (27.4)	0.00
Hinduism	135 (66.5)	68 (33.5)	
Islam	19 (90.5)	2 (9.5)	
Sanamahism	53 (44.9)	9 (17.1)	

* Median age of the participants was 38 years

Discussion

Knowledge and attitude are important predictors that determine the practice of a health behaviour. Hence it is important to assess the existing level of knowledge and attitude regarding the health behavior of interest so as to determine the optimal course of action for its improvement which reflects directly in the practice of the said behaviour.

In this study, about one-fourth (25.3%) of the participants had adequate knowledge regarding blood donation. This is similar to the findings of a community based cross-sectional study conducted by Ramraj B et al in Tamil Nadu (32% of the participants had adequate knowledge).⁴ On the contrary, Almutairi SH et al, in a study conducted in Saudi Arabia, found that more than 90% of the general public had good knowledge regarding blood donation.⁵ This might be reflective of the country wise variations in the level of awareness regarding the importance of blood donation. Only about one-fourth (27.9%) of the participants in this study had favourable attitude towards blood donation. Whereas in the studies conducted by Al Asadi JN et al and Aslami AN et al among medical students, a high proportion of the participants had positive attitude (74% and 90% respectively).^{6,7} Though the high proportion of positive attitude among the medical fraternity is encouraging, efforts must be taken to achieve a similar proportion among the general population. In this study, only 27.6% of the participants had donated blood. This is similar to the findings if Ramraj B et al who found that 38% of the participants had donated blood.⁴ On the other hand, Almutairi SH et al found that 61.2% of the participants had donated blood.⁵ This might be reflective of the higher prevalence of good knowledge regarding blood donation in that study. A low proportion of blood donation were observed in the studies conducted among medical students by Al Asadi JN et al, Aslami AN et al and Dawadi P et al (13%, 10% and 22.2% respectively).^{6,7,8} The reasons for such a lower proportion of blood donors among medical students in spite of a higher level of knowledge must be looked in to.

More than half (57.3%) of those who had donated blood in this study were replacement donors. This further stresses the importance of encouraging voluntary blood donation in the state. In this study,

the most common reason for not donating blood was not being approached for blood donation. Malako D et al, in a study conducted in Ethiopia, had similar findings.⁹ This indicates the importance of community blood donation campaigns which gives individuals who are willing for blood donation an opportunity to do so. On the other hand, Ramraj B et al reported that the most common reason for not donating blood was the lack of awareness regarding blood donation.⁴ This highlights the importance of good knowledge as a prerequisite for good practice.

In this study, participants who lacked adequate knowledge were educated regarding the importance of blood donation after the interview. Participants' self-reported blood donation practices could not be verified. Awareness programmes to improve the knowledge and attitude of the general population needs to be conducted so that more people will be motivated to donate blood voluntarily.

Conclusion

About one-fourth of the participants in this study had adequate knowledge and favourable attitude towards blood donation. Around one fourth of the participants had donated blood at least once of which more than half of them were replacement blood donors. Males were more likely to have adequate knowledge regarding blood donation and to have donated blood compared to females. Health care workers were more likely to have adequate knowledge, favourable attitude and donated blood compared to non-health care workers. There was a significant association between educational qualification and religion with the level of knowledge, attitude and practice of blood donation.

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