ORIGINAL ARTICLE

Assessment of Knowledge about blood donation and Perception of risks due to blood donation in undergraduate Medical Students

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ABSTRACT

Introduction: This study was conducted to find out the factors influencing dismal blood donation statistics in the region by obtaining inputs from undergraduate medical students regarding factors contributing or detrimental to blood donation, reasons for deferral, misconceptions and myths regarding donation, existing blood donation practices, suggestions for improvement of blood donation services and level and source of knowledge about donation.

Materials and Methods: Three expert community and family medicine consultants in the field of research methodology validated the questionnaire. It includes three parts; the first part enquires about socio-demographic characteristics. The second part deals with knowledge of blood donation, while the third part includes questions about attitude of the students towards blood donation.

Results: The subjects were graded into three groups based on their knowledge of blood donation and transfusion, as determined by the interview method. This was again found to have a highly significant association with donation behavior (p<0.00001).

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

Keywords: Blood donation, Medical Students, Misconceptions, Knowledge

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Introduction:

Blood is considered the elixir of life and its importance has increased with advances in the field of surgery, research in utilization of blood components and increase in the number of road traffic accidents. In India, there is a severe imbalance in the demand and supply. Despite the efforts of National AIDS Control Organization (NACO), only 10.9 million units of blood were collected in the year 2015-16 against the estimated annual requirement of 12 million units. Apart from the quantity of blood, safety of the transfused blood is another important issue. Donors across the world are classified into three categoriesvoluntary donors, who donate blood regularly without any remuneration; replacement donors, who donate to procure blood for a relative, or friend who requires blood; and commercial donors, who donate blood in exchange for money.

The World Health Organization (WHO) estimates that blood donation by 1% of the total population is generally the minimum needed to meet a nation's most basic blood requirements.² As most of the population is eligible for blood donation, abundant availability of blood is possible and expected. Yet, a permanent shortage of blood remains,³ because only a small proportion of eligible people donate in developed and even fewer in developing countries.⁴

In this study, we targeted the undergraduate students as the youth constitutes a healthy population, having an open mind and are a potential source of safe blood. This study was conducted to find out the factors influencing dismal blood donation statistics in the region by obtaining inputs from undergraduate medical students regarding factors contributing or detrimental to blood donation, reasons for deferral, misconceptions and myths regarding donation, existing blood donation practices, suggestions for improvement of blood donation services and level and source of knowledge about donation. Understanding their attitudes, motivations and misconceptions about blood donation may help frame policies accordingly and recruit them into the inadequate donor pool of our country.

Materials and Method:

This was a cross-sectional observational study conducted by the Department of Pathology from a tertiary care centre in the Jaipur, India on undergraduate medical students after obtaining permission from the Institutional Ethics Committee. A total of 400 students who consented to participate in the study after being explained the nature and purpose of the study were enrolled after taking written informed consent.

Data were collected using a special selfadministered pretested structured questionnaire designed for the purpose of the study based on literature review 7,9,12 and WHO guidelines for blood

donation.¹³

Three expert community and family medicine consultants in the field of research methodology

validated the questionnaire. It includes three parts; the first part enquires about socio-demographic characteristics. The second part deals with knowledge of blood donation, while the third part includes questions about attitude of the students towards blood donation. After an informed consent, the participants were briefed about the purpose of the study and how to fill the questionnaire. It was emphasized that participation in the study was voluntarily and all data collected were strictly confidential and would not be used for anything except for this study.

The data collected were entered into Excel spread sheets and analysis was carried out using SPSS (version 17) software. Descriptive statistics and Pearson's Chi-square test were used in this study to analyse the data.

Results:

Out of the study population consisting of 400 students, only 80 (20%) undergraduate students had donated blood. The age for both the groups ranged from 18-25 years with an average age of 22 ± 3.5 .

		Donors (%)	Non-Donors (%)	Total (%)
Age (years)		22±2.9	22±3.5	21±2.8
Gender	Male	21 (26.2)	63 (19.6)	84 (21)
	Female	55 (68.7)	261 (81.5)	316 (78)
Family Income (x10 ³ per month)	< 10	0 (0.0)	8 (2.5)	8 (2.5)
	10-50	5 (6.2)	8 (2.5)	13 (3.2)
	50-100	20 (25)	27 (8.4)	47 (11.7)
	>100	50 (62.5)	281 (87.8)	331 (82.7)

Table 1: Demographic profile of the study population

The subjects were graded into three groups based on their knowledge of blood donation and transfusion, as determined by the interview method. This was again found to have a highly significant association with donation behaviour (p<0.00001). Figure No.1

Figure 1: Knowledge about blood donation in the study population



		Donors (%)	Non-Donors (%)	Total (%)
Knowledge	Poor	0 (0.0)	8 (2.5)	8 (2)
	Satisfactory	14 (17.5)	150 (46.8)	164 (41)
	Good	61 (76.2)	167 (52.1)	228 (57)

All the students' perception regarding risks due to blood transfusion was gathered. 20 (25%) donors and 125 (39.8%) non-donors felt that blood donation carries risks. The perception of risk was found to have a statistically significant impact on donation behaviour (p=0.026146). Students who perceived blood donation as risky were directed to grade the risk on a three-part Likert scale. The perception of degree of risk also affected donations significantly (p=0.001778

The commonest risk perceived by donors was that of transfusion transmitted infections and by non-donors was that of post-transfusion anaemia or weakness. **Table No. 2**

 Table 2: Perception of risks due to blood donation

		Donors (%)	Non-	Total (%)
			donors(%)	
Does blood transfusion	Yes	20 (25)	125 (39.0)	145 (36.2)
pose any risk?	No	56 (75.7)	199 (61.6)	255 (63.7)
Nature of risk	Anaemia	9 (11.2)	161 (50.3)	170 (42.5)
	Infection	13 (16.2)	8 (2.5)	21 (5.2)
	Sexual dysfunction	0 (0.0)	0 (0.0)	0 (0.0)
	Others	0 (0.0)	0 (0.0)	0 (0.0)
Grade of risk	High	0 (0.0)	14 (3.8)	14 (3.8)
	Medium	14 (17.5)	32 (10)	46 (11.5)
	Low	9 (11.2)	84 (26.2)	93 (23.2)

Discussion:

The rate of donation of 18.04% correlated well with other studies conducted on students in developing countries like11% in Thailand, ⁵14.3% in Brazil, ⁶15% in Nigeria, ⁷16% in Bangladesh, ⁸17.5% in Mmabatho, ¹⁸8% in Pakistan, ¹⁹9.02% in KSA, ^{24%} in Greece, ^{28.5%} in Nepal, ¹³ with higher values in some developed countries like USA(49% in African Americans), ¹⁴ and Serbia (41.4%). ¹⁵ Indian studies showed a huge variation, from 55.4% in the east, ¹⁶ 12.32% in the west, ¹⁷ and less than 1% in the south. Most studies conducted on students have found a male pre-disposition in donation behaviour. In our study, similar to some other global studies, though donation behaviour is higher in males, the difference is not statistically significant ^{5'20} The role of family income, which has been found to be significant in this study (p=0.00004), has not been explored in students and was found to be insignificant ²¹

The participants reported that moral responsibility or need of relatives or friends for blood were the reasons for blood donation. The need of receiving money or an incentive for blood donation is low in this study. Studies in different countries also concluded that people donate blood for humanity reasons.

The retention of a donor is as important, if not more, than donor recruitment, to attain the ideal of 100% nonremunerated blood donation. It is here that further strategic intervention is required to prevent dropouts. However blood donation services in the area, though not robust, have played a role in influencing donor behaviour, as blood donation camps organized, were found to be the single most important source of knowledge and motivation, unlike other studies, where ¹⁸ family, friends or media provided information. The donation experience was also considered good by 58.6% students, with no subject rating it as bad. Adverse effects reported were similar to other studies and included weakness and pain.

Conclusion:

Altruistic motives are primarily responsible for voluntary donation. On the other hand, malnutrition, especially in females, apathy, irrational fears and misconceptions hinder blood donation. Non-donors often have an exaggerated perception of risk, which is another de-motivating factor for them. As knowledge and socio-economic variables have a significant impact on donor behavior, it is essential to create awareness. Furthermore, despite the positive attitude towards blood donation, only 13% of them reported a history of blood donation. Educational programs 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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