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Original Research Article

Factors influencing blood donation among the workers of a tertiary care hospital, Chitradurga: a comparative study

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ABSTRACT

Background: Blood donation is very vital to save human life as there is no substitute for human blood. Even though the hospital workers are well aware about blood donation, many of them are not into voluntary blood donation. Hence the present study focuses on the hospital workers.
Methods: A cross-sectional study with purposive sampling was done in the workers of Basaveshwara Medical College. After obtaining verbal consent, the data was collected by a pre-designed, pre-structured, self-administered questionnaire. The data was analyzed using SPSS version 21.
Results: A total of 258 workers participated, the mean age was 30.83±7.44; 97 (37.6%) were donors and 161 (62.4%) were non-donors. The donors were mostly in the age group 31-40 yrs (48.1%), males (63.3%), those who were single (40.2%), graduates (45.4%), belonging to socio-economic class I (56.7%). Most were voluntary donors (70.1%), 48.5% had donated 2-5 times, 24.7% were regular donors with 37.5% donating yearly. The predominant reason for not donating blood among the non-donors was 'no request for blood' (63.4%). Around 175 (67.8%) were willing to be voluntary donors in the future, whereas 57 (22.1%) were willing to donate only for family and friends and 26(10.1%) were not willing to donate blood. Willingness to donate was found to be significantly associated with age, education, occupation, socio-economic class, source of information and the type of donation.
Conclusions: Males and those in higher socio-economic class predominantly donated blood. Donors considered blood donation as a humanitarian cause and felt it gives moral satisfaction than the non-donors. Non-donors thought blood donation leads to weakness/anemia and is harmful to health than the donors.

Keywords: Blood donation, Donors, Non-donors, Voluntary donation

INTRODUCTION

Even though medical science has advanced greatly with new discoveries and inventions, there is still no substitute found for human blood and blood donation is the only option available.[1] Every three seconds someone is in need of blood. A single blood donation can save upto three lives. Any healthy person aged 18-65 years, weighing atleast 50 kgs can donate blood every 3 months.[2]

Donating blood not only helps the recipient, but also improves the health of the donor. It balances the iron levels in the body, regulates blood flow by correcting the hypercoagulability, burns the extra calories and reduces the cholesterol level.[2,3] Since the donor gets a mini-physical done simultaneously, infections and diseases are diagnosed early. It is also found that regular blood donors are 88% less likely to suffer from a heart attack, have a longer life and have lower risk of developing heart

disease, hypertension, diabetes, hypercholesterolemia and embolic episodes when compared with the non-donors.[4-6]

The World Health Organization estimates that blood donation by 1% of the population is generally the minimum needed to meet a nation's most basic requirements for blood.[7] In India, during the year 2006-2007, Voluntary Blood Donation (VBD) was only 54.4% and it increased to 79.4% during the year 2010-2011.[8]

The ever increasing demand of blood these days due to implementation of newer and aggressive surgical and therapeutic methods increases the need to ensure its sufficient supply immensely, as no hospital can function effectively without an efficient blood supply.[9,10]

The blood banks stress and urge the relatives of the patient to send replacement donors as blood donor recruitment and retention is important to maintain their stock.[11] Therefore it is crucial to understand the processes whereby first-time donors become repeat donors.

Even though the hospital workers are aware about it, many of them are not into voluntary blood donation. Hence the present study focuses on the hospital workers to compare the socio-demographic differences between the donors and non-donors, and also to explore the factors that motivate or discourage them from donating blood.

Objectives

1. To compare the socio-demographic factors between the donors and non-donors.
2. To find out the factors influencing blood donation among the workers.
3. To know the reasons for not donating blood among the non-donors.
4. To assess the factors affecting the willingness to donate blood in the future.

METHODS

A cross-sectional study with purposive sampling was done in the workers of Basaveshwara Medical College & Hospital, Chitradurga from June 2015 to September 2015. All the workers working in the institute were approached. Those who were not willing to participate in the study were excluded. A total of 258 workers responded and participated in this study. After obtaining the written consent, the data was collected by a pre-designed, pre-structured, self-administered questionnaire. The questionnaire consists of background information, details about blood donation and willingness to donate blood in the future. A three point likert scale was used for the questions on the myths and the reasons for not donating blood; with 1 being agree, 2 being neither agree nor disagree and 3 being disagree. Those workers who had atleast once donated blood were considered as "donors" and those who never donated blood were "non-donors**"**. The data thus obtained was compiled and analyzed using SPSS version 20. Chi-square test was applied wherever necessary, p value of <0.05 was considered as statistically significant.

RESULTS

A total of 258 workers participated in the study. They aged from 19 – 54 yrs, the mean age being 30.83±7.44. Gender distribution was almost equal, 128 (49.6%) were males and 130 (50.4%) were females. The donors were mostly in the age group 31 – 40 yrs (48.1%), males (63.3%), single (40.2%), graduates (45.4%), belonging to socio-economic class I (56.7%). However statistically significant association for blood donation was found only for gender and socio-economic status (Table 1).

In this study, 97 (37.6%) were donors and 161 (62.4%) were non-donors. Table 2 shows the blood donation details of the donors.

More donors considered blood donation as a humanitarian cause (99%) and felt it gives moral satisfaction (97.9%) than the non-donors (p=0.001). Non-donors thought blood donation leads to weakness/anemia (39.1%) and is harmful to health (29.8%) than the donors (p=0.000). However it was donors who believed that blood donation can transmit HIV infection more than the non-donors (p=0.000). Donors also thought blood donation leads to accelerated aging, infertility and loss of vitality more than the non-donors, but it was not statistically significant (p>0.05) (Table 3).

The predominant reason for not donating blood among the non-donors was 'No request for blood' (63.4%), followed by Never had opportunity to donate (60.9%), Medically unfit to donate (57.1%), Never thought about it (52.8%), No time for donating (32.9%), Fear of weakness from blood donation (31.7%), Fear of pain of needle (24.8%), Fear of contracting disease (23%), Discomfort at the sight of blood (14.9%), Donation process is long and boring (14.3%), My blood will be misused by blood bank (8.7%), My blood will be wasted (6.2%) (Figure 1).

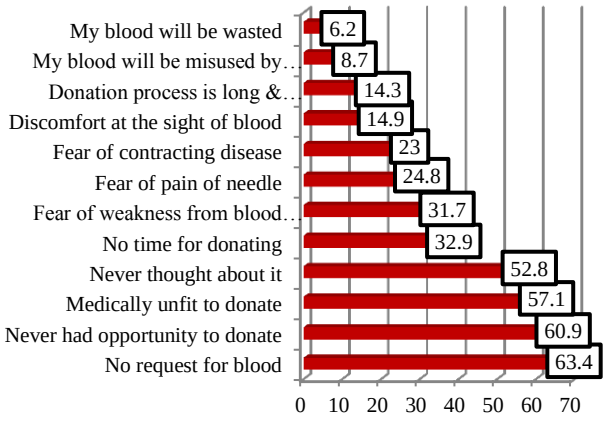

Figure 1: Reasons for not donating blood among the non-donors.

Table 1: Socio-demographic factors affecting blood donation.

Particulars		Frequency N (%)	Donors N (%)	Non-donors N (%)	χ2 value	df	P value
Age groups	≤ 30 Yrs	150 (58.1)	49 (32.7)	101 (67.3)	5.607	2	0.061
	31 - 40 Yrs	81 (31.4)	39 (48.1)	42 (51.9)			
	> 40 Yrs	27 (10.5)	9 (33.3)	18 (66.7)			
Gender	Male	128 (49.6)	81 (63.3)	47 (36.7)	71.427	1	0.000
	Female	130 (50.4)	16 (12.3)	114 (87.7)			
Religion	Hindu	250 (96.9)	93 (37.2)	157 (62.8)	0.762	1	0.374
	Muslim	8 (3.1)	4 (50)	4 (50)			
Residence	Urban	160 (62)	63 (39.4)	97 (60.6)	0.568	1	0.451
	Rural	98 (38)	34 (34.7)	64 (65.3)			
Marital Status	Single	87 (33.7)	35 (40.2)	52 (59.8)	1.522	2	0.467
	Married	169 (65.5)	62 (36.7)	107 (63.3)			
	Widow	2 (0.8)	0	2 (100.0)			
Type of family	Nuclear	163 (63.2)	65 (39.9)	98 (60.1)	5.171	2	0.075
	Joint	47 (18.2)	11 (23.4)	36 (76.6)			
	Three Generation	48 (18.6)	21 (43.8)	27 (56.3)			
Education	Illiterate	10 (3.9)	1 (10.0)	9 (90.0)	8.895	4	0.064
	Primary School	15 (5.8)	5 (33.3)	10 (66.7)			
	High School	41 (15.9)	16 (39.0)	25 (61.0)			
	PUC	73 (28.3)	21 (28.8)	52 (71.2)			
	Graduate	119 (46.1)	54 (45.4)	65 (54.6)			
Occupation	Nurse	92 (35.7)	31 (33.7)	61 (66.3)	2.880	3	0.411
	Technician / Pharmacist	45 (17.4)	19 (42.2)	26 (57.8)			
	Clerk	34 (13.2)	10 (29.4)	24 (70.6)			
	Group D	87 (33.7)	37 (42.5)	50 (57.5)			
Socio-economic class	Class I	30 (11.6)	17 (56.7)	13 (43.3)	12.232	4	0.016
	Class II	67 (26)	31 (46.3)	36 (53.7)			
	Class III	73 (28.3)	21 (28.8)	52 (71.2)			
	Class IV	75 (29.1)	26 (34.7)	49 (65.3)			
	Class V	13 (5)	2 (15.4)	11 (84.6)			
Total		258 (100)	97 (37.6)	161 (62.4)			

Table 2: Blood donation among the donors.

Particulars		Frequency	Percentage (%)
Type of donation	Voluntary	68	70.1
	Replacement	29	29.9
First time donated for	Friends	15	15.5
	Family	6	6.2
	Relatives	14	14.4
	Unknown	62	63.9
Frequency	Once	29	29.9
	2 - 5	47	48.5
	6 - 10	12	12.4
	> 10	9	9.3
Regular donation	Yes	24	24.7
	No	73	75.3
Frequency of regular donation	3 Months	8	33.3
	6 Months	7	29.2
	Yearly	9	37.5

Table 3: Factors affecting blood donation.

S.No.	Blood donation	Donors (%)	Non-donors (%)	χ^2 value	df	P value
1.	Saves lives	95 (97.9)	159 (98.8)	1.687	2	0.430
2.	Is a humanitarian cause	96 (99)	143 (88.8)	9.199	2	0.010
3.	Gives moral satisfaction	95 (97.9)	134 (83.2)	14.122	2	0.001
4.	Can transmit HIV infection	64 (66)	73 (45.3)	16.644	2	0.000
5.	Leads to weakness/anaemia	25 (25.8)	63 (39.1)	4.983	2	0.083
6.	Donation is harmful to health	11 (11.3)	48 (29.8)	15.548	2	0.000
7.	Leads to accelerated aging	15 (15.5)	13 (8.1)	4.712	2	0.095
8.	Leads to infertility and loss of vitality	7 (7.2)	11 (6.8)	0.803	2	0.669

Table 4: Factors affecting the willingness to donate blood in the future.

Particulars		Blood donation in the future			χ2 value	df	P value
		No N (%)	Only if family/friends require N (%)	Yes, as a voluntary donor N (%)			
Blood donation	Donors	2 (2.1)	11 (11.3)	84 (86.6)	26.118	2	0.000
	Non-donors	24 (14.9)	46 (28.6)	91 (56.5)			
Gender	Male	8 (6.3)	27 (21.1)	93 (72.6)	4.680	2	0.096
	Female	18 (13.8)	30 (23.1)	82 (63.1)			
Age groups	≤ 30 yrs	11 (7.3)	42 (28)	97 (64.7)	11.815	4	0.019
	31 - 40 yrs	9 (11.1)	11 (13.6)	61 (75.3)			
	> 40 yrs	6 (22.2)	4 (14.8)	17 (63)			
Education	Illiterate	5 (50)	2 (20)	3 (30)	26.733	8	0.001
	Primary school	3 (20)	1 (6.7)	11 (73.3)			
	High school	3 (7.3)	12 (29.3)	26 (63.4)			
	PUC	9 (12.3)	17 (23.3)	47 (64.4)			
	Graduate	6 (5)	25 (21)	88 (74)			
Occupation	Nurse	4 (4.3)	21 (22.8)	67 (72.8)	16.410	6	0.012
	Technician / Pharmacist	2 (4.4)	6 (13.3)	37 (82.2)			
	Clerk	6 (17.6)	11 (32.4)	17 (50)			
	Group D	14 (16.1)	19 (21.8)	54 (62.1)			
Socio-economic class	Class I	0	10 (33.3)	20 (66.7)	25.265	8	0.001
	Class II	2 (3)	13 (19.4)	52 (77.6)			
	Class III	8 (11)	12 (16.4)	53 (72.6)			
	Class IV	11 (14.7)	19 (25.3)	45 (60)			
	Class V	5 (38.5)	3 (23)	5 (38.5)			
Source of information	Books	2 (3.9)	17 (33.3)	32 (62.8)	16.775	6	0.010
	Media / Internet	4 (11.8)	7 (20.6)	23 (67.6)			
	Heard from other people	16 (16.5)	23 (23.7)	58 (59.8)			
	Blood Bank	4 (5.3)	10 (13.1)	62 (81.6)			
Type of donation	voluntary	2 (2.9)	3 (4.4)	63 (92.6)	11.442	2	0.003
	replacement	0	8 (27.6)	21 (72.4)			

In this study, 175 (67.8%) were willing to be voluntary donors in the future, whereas 57 (22.1%) were willing to donate only for family and friends and 26 (10.1%) were not willing to donate blood. Most of the donors (86.6%) were willing to be voluntary donors than the non-donors (56.5%), which is statistically significant (p=0.000) (Table 4).

DISCUSSION

Everyone might be in need of blood in their life at one point or the other. Since human blood donation is the only way to get the blood, it is important to find out what factors predominantly motivates the donors to donate

voluntarily and repeatedly, and what prevents the non-donors to do the same.

In this study, 37.6% were donors, similar when compared to a study conducted on physicians, whereas more when compared to the studies done on the students.[12-15] The donors were predominantly in the age group 31–40 years, with both the lesser and the higher age groups donating less. However, among the socio-demographic factors significant association for blood donation was found only for gender and socio-economic status; with males donating more than the females (p=0.000) and those from the higher socio-economic class donating more than the lower classes. (p=0.016). Such male predominance among the donors was observed in other studies as well.[15-18]

The reasons for donation and non-donation of blood were similar to those of previous studies. Those who donated blood more often, did it because they found moral satisfaction.[12,15] The main reason for not donating was because they were not approached for it or no opportunity to donate.[12,13,15,18]

It was also seen that voluntary donors donated more repeatedly than the replacement donors[18] and they were more willing to donate in the future as well (p=0.003). Though 89.9% were willing to donate in the future, only 67.8% of them were ready for voluntary donation, the rest 22.1% opted to donate only for friends and family. The remaining 10.1% didn't wish to donate blood. Since willingness to donate was found significantly associated with age group, education, occupation, socio-economic class, source of information, previous donation and the type of donation, these factors can be further explored to increase the number of donors.

CONCLUSION

Males and those in higher socio-economic class predominantly donated blood. Donors considered blood donation as a humanitarian cause and felt it gives moral satisfaction more than the non-donors. Non-donors thought blood donation leads to weakness/anaemia and is harmful to health than the donors. Most of the donors were willing to be voluntary donors in the future than the non-donors. The non-donors had not donated blood mainly because they were not approached. Therefore it is can be concluded that more donors can be recruited for voluntary donation by proper motivation and adequate awareness through campaigns. The idea of voluntary blood donation needs to be intensively promoted to get regular, non-remunerated, donors.

Limitations

Since it is done in a specific group (hospital workers), the results can not be generalised to the whole population.

Recommendations

Similar studies can be conducted on people of other occupations as well as the general public and the results can be further evaluated, so that appropriate measures can be taken for the recruitment of the donors.

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