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PROFILE AND AWARENESS OF BLOOD DONORS: A STUDY IN BLOOD BANK OF A TERTIARY CARE HOSPITAL OF KOLKATA

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ABSTRACT: Introduction: Blood is the only oxygen transporter in the body and is crucial in saving lives. Research has failed to find a true substitute for blood and blood components The attitude, beliefs, and level of knowledge associated with blood donation will determine whether potential donors will donate blood or not. **Methodology:** A descriptive epidemiological study with cross sectional study design was conducted among blood donors attending the blood bank of SSKM Hospital. **Result:** It was found 67.08% of the donors had a knowledge score of less than 5. It was found that donors from urban areas, higher educational and socio-economic status as well as those who had previous history of blood donation had higher knowledge scores. This was statistically significant ($p<0.05$). Mass media like television and radio had an insignificant role in creating awareness as only 5% and 2% of the donors were made aware through these respectively. The most important source of knowledge for the donors was blood donation camps as an overwhelming 68% were made aware through these camps. **Conclusion:** Volunteering behavior is based on culture and determined by various factors like religion, age, sex, attitude of person, family support, and geographical locations. Our study found that all the respondents were willing to donate blood again if required in future. This positive feeling should be encouraged with proper knowledge regarding blood safety to meet the demand of blood requirement.

INTRODUCTION: Blood is the only oxygen transporter in the body and is crucial in saving lives. Even years of extensive research failed to find a true substitute for blood and blood components may not be available for many years.[1] Therefore, blood donation by humans will continue to be the major source for blood and blood components.

Blood donation is truly 'a gift of life' that a healthy individual can give to others in their community, who are sick or injured.

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In any blood bank blood and the component units available for everybody's requirements should be sufficient. With the advent of modern transfusion medicine the therapeutic use of specific portions – components of blood, e.g. factor VIII concentrates, packed red cells or platelets rather than whole blood is important. But, non-availability of sufficient basic blood units is a problem throughout the country.

The hospitals rely on the relatives of a patient to donate the necessary blood as there are not enough voluntary blood donations to help the needy patients. Maximum blood donation in our blood banks is on replacement basis. Blood banks pressurize the doctors, the nurses and the relatives of the patient and urge them to send replacement donors to maintain their stock. This is not a good practice as the relatives of the patients are compelled in to finding donors. Professional blood

donors are brought to donate blood in guise of being replacement donors. This is a very risky situation as professional donors constitute a group with high-risk behavior leading to greater chances of transfusion-transmitted diseases. [2]

Like in any developing country in India too, there is a dependency on family replacement and remunerated donors. Though the World Health Organization advocates that member states should establish national blood transfusion services that will operate on the basis of voluntary, non-remunerable basis [3], family/replacement donors still provide more than 45% of the blood collected in our blood banks .[4]

In West Bengal out of total 110 blood banks, 58 are State Government run, 16 run by Central government while 36 are run by private institutions. Voluntary blood donation accounted for only 13% of donations in State Government Blood Banks, 43% in Central Blood Banks and about 19% in Private blood Banks. [5]

The attitude, beliefs, and level of knowledge associated with blood donation will determine whether potential donors will donate blood or not. There are lots of publications assessing the knowledge, attitude, and practice of voluntary blood donation. However, very few studies have been conducted in a Hospital Blood bank setting to determine the perception of voluntary blood donors.

This study was thus undertaken among blood donors attending the Blood bank of SSKM Hospital to find out their socio-demographic profile, knowledge and practice regarding blood donation.

MATERIALS AND METHOD:

A descriptive epidemiological study with cross sectional study design was conducted among blood donors attending the blood bank of SSKM Hospital during April-March; 2015. Complete enumeration of the donors who came to donate blood during the study period was done. A total of 165 donors were available during the aforementioned period among which 4 did not give informed verbal consent for the study. The final sample size thus came out to be 161.

An exit interview of the blood donors after donating blood was conducted using a predesigned and pretested structured schedule.

The study variables included age, sex, religion, residence, marital status, education, occupation, per capita monthly income, addiction, knowledge regarding age, contraindications and side effects of blood donation, diseases transmitted by of blood donation, interval between two successive donations, blood groups as well as history of previous blood donation and time since last donation.

The data thus obtained was analyzed using MS Excel.

Regarding residence an area under Panchayat was considered rural while those under Municipality were urban

A person above 7 years of age who was unable to read, write and understand any language was considered illiterate. Primary education was class 4 passed, middle school education was class 8 passed secondary education was class 10 passed and higher secondary education was Class 12 passed.

Addiction was defined as any substance/drug which is self administered for nonmedical reasons, in quantities and frequencies which may impair an individual's ability to function effectively, and may result in social, physical or emotional harm. A person was considered to be addicted if he/she had consumed the substance even once in last 6 months.

The medicines that prevent donor to donate blood if taken within 72 hours were antibiotics, alcohol, steroids, anti rabies vaccination, aspirin and vaccination.

18- 60 years was considered as correct age of blood donation and correct interval between two successive blood donation was 3 months.

RESULT AND ANALYSIS:

Table 1 shows the distribution of the study population according to their socio-demographic profile. It was found that 36.02% of the donors

belonged to the age group of 29-38 years followed by nearly 35% who belonged to the age group of 19-28 years. Over 90% of the study population was males and 68% were Hindus.

TABLE 1: DISTRIBUTION OF THE STUDY POPULATION ACCORDING TO THEIR SOCIO-DEMOGRAPHIC CHARACTER (N=161)

Age in years	Number	Percentage
19-28	56	34.78
29-38	58	36.02
39-48	36	22.36
49-58	11	6.83
Sex	**Number**	**Percentage**
Female	15	9.32
Male	146	90.68
Religion	**Number**	**Percentage**
Hindu	110	68.32
Muslim	51	31.68
Residence	**Number**	**Percentage**
Rural	91	56.52
Urban	70	43.48
Marital status	**Number**	**Percentage**
Divorced	1	0.62
Married	119	73.91
Unmarried	41	25.47
Education status	**Number**	**Percentage**
Primary and non formal education	21	13.04
Middle school	49	30.43
Secondary	40	24.84
Higher secondary & above	50	31.06
Occupation	**Number**	**Percentage**
Student	14	8.7
Housewife	11	6.8
Service	41	25.47
Business	32	19.88
Driver	14	8.7
Farmer	26	16.15
Labourer	17	10.56
Other (Cook, tailor)	6	3.73
PCMI	**Number**	**Percentage**
Lower	24	14.91
Upper lower	36	22.36
Lower middle	39	24.22
Upper middle	28	17.39
Upper	34	21.12
History of previous blood donation	**Number**	**Percentage**
Yes	69	42.86
No	92	57.14

Most of the study population (56.52%) came from rural areas and nearly one fourth of them were unmarried. 13 % of the study population were illiterate, non -formally educated or primary educated. Nearly one fourth of the donors were engaged in service followed by business (19.88%). Most of them (24.22%) belonged to lower middle class and upper lower class (22.36%). Again only 43% of the donors had previous history of blood donation. All the donors were either family or replacement donors for patients admitted in the Hospital.

More than half (55.3%) had some form of addiction **(Fig.1)** and only about 27% were unaware of their own blood group **(Fig.2)**

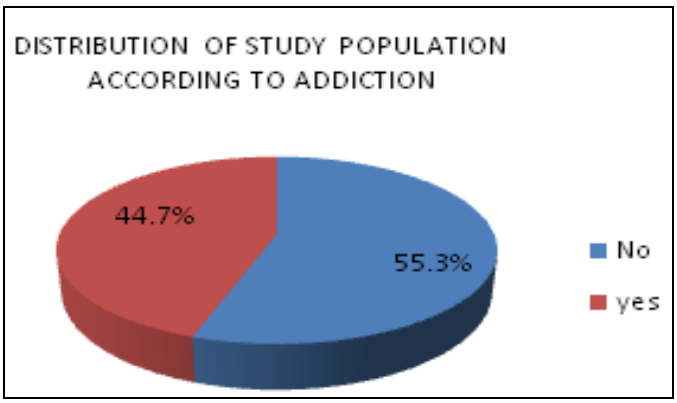

FIG. 1: DISTRIBUTION OF STUDY POPULATION ACCORDING TO ADDICTION

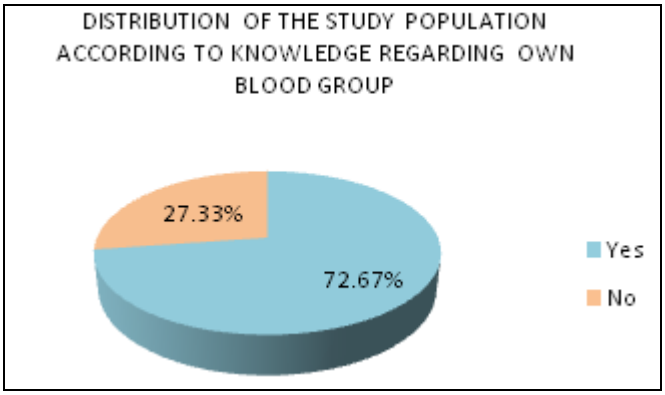

FIG. 2: DISTRIBUTION OF THE STUDY POPULATION ACCORDING TO KNOWLEDGE REGARDING OWN BLOOD GROUP

The knowledge variables assessed were knowledge regarding diseases and medicines preventing blood donation, correct age of blood donation, interval between two successive donations and transmission transmitted diseases. For each correct response one mark was allotted while same was deducted for each incorrect response. No marks were given for not responding or "don't know" response. Thus the final knowledge score was calculated. The minimum score obtained was 0 whereas maximum score was 10. It was found 67.08% of the donors had a knowledge score of less than 5 **(Table 2)**.

TABLE 2: DISTRIBUTION OF THE STUDY POPULATION ACCORDING TO THEIR TOTAL KNOWLEDGE SCORE

Knowledge score	Number	Percentage
<5	108	67.08
≥5	53	32.92

TABLE 3: DISTRIBUTION OF THE STUDY POPULATION ACCORDING TO THEIR KNOWLEDGE SCORE AND SOCIO-DEMOGRAPHIC PROFILE

Age (in years)	Knowledge score<5	Knowledge scoe≥5
19-28	38	18
29-38	40	18
39-48	22	14
49-58	8	3
	Chi square=0.85, p>0.05	
Sex	Knowledge score<5	Knowledge scoe≥5
Female	12	3
Male	96	50
	Chi square=0.69, p>0.05	
Religion	Knowledge score<5	Knowledge scoe≥5
Hindu	73	37
Muslim	35	16
	Chi square=0.01, p>0.05	
Residence	Knowledge score<5	Knowledge scoe≥5
Rural	69	22
Urban	39	31
	Chi square=6.36, p<0.05	
Marital status	Knowledge score<5	Knowledge scoe≥5
Married	83	36
Unmarried	25	17
	Chi square=1.04, p>0.05	
Educational status	Knowledge score<5	Knowledge scoe≥5
Primary and non formal education	21	1
Middle school	38	11
Secondary	35	5
Higher Secondary & above	14	36
	Chi square=52.59, p<0.05	
Socio-economic status	Knowledge score<5	Knowledge scoe≥5
Lower	15	9
Upper lower	34	2
Lower middle	31	8
Upper middle	17	11
Upper	11	23
	Chi square=34.24, p<0.05	
History of previous blood donation	Knowledge score<5	Knowledge scoe≥5
Yes	33	36
No	75	17
	Chi square=18.78, p<0.05	

Table 3 shows the distribution of the study population according to their knowledge score with respect to their socio-demographic profile. It was found that donors from urban areas, higher educational and socio-economic status as well as those who had previous history of blood donation had higher knowledge scores. This was statistically significant ($p<0.05$). Regarding the source of knowledge regarding blood donation, it can be said that mass media like television and radio had an insignificant role in creating awareness as only 5% and 2% of the donors were made aware through these respectively **(Fig. 3).** The most important source of knowledge for the donors was blood donation camps as an overwhelming 68% were made aware through these camps.

39 % of the study population did not have any knowledge regarding the adverse effects during or after blood donation whereas 35% stated that there will be no adverse effects during or after blood donation. However 26% stated that there will be

some adverse effects. Majority of the study population (69.2%) reported dizziness as an adverse effect during or following blood transfusion, followed by weakness (30.7%) and fainting attacks (7.6%).

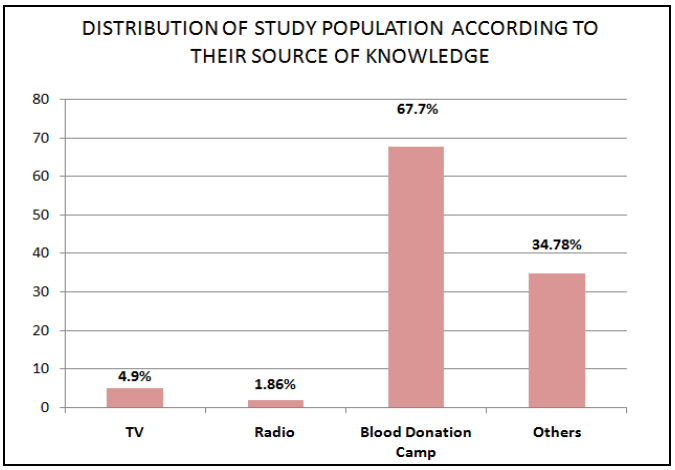

FIG. 3: DISTRIBUTION OF STUDY POPULATION ACCORDING TO THEIR SOURCE OF KNOWLEDGE

DISCUSSIONS: In the current study about 35% of the study population belonged to 19-28 years age group. A study Uma et al [6] in Chennai found increased numbers of young donors who were in the age group of 18-25 years (61%).In contrast, Sampath et al [7]., showed that 48.4% of the donors were in the age group of 26-50 years.

The number of female donors in our study was very low as compared to males. This is corroborated by similar findings in the Chennai study as well as a study by Agarwal et al [8] There may be various reasons for the low percentage of female donors like low haemoglobin values, low weight, and fear of pain. In a study which was done by Hollingsworth [9], female donors constituted only 1% of the donor population.

In our study, the donor population was characterized by only 31% of the study population with higher secondary or above level education, which was a contrast to the findings of the studies which were done by Allain et al[10], and Hinrich et al.[11]. A study by Agarwal et al [8] found that while among illiterates 81 percent of the respondents knew about blood donation, among the post graduates the same ratio was found to be almost cent-percent.

In our study 57% of the donors were first time donors. In a study among students in Nepal by Amatya M [14] it was found that 82% had not donated blood previously. Again a study by Nigatu A[12] determined that 76.4% of the study participants had not donated previously.

In contrast a study by Zaller et al's [13] showed that only 17.5% of the donors were first time donors. This brings out the fact that there is still lack of awareness among people for voluntary blood donations.

Our study found that most (73%) of the donors were aware of their own blood group. This is similar to a study conducted by Amatya M [14] which found that about 70% of the study population was aware of their own blood groups. A study by Nwogoh et al [15] in Nigeria found a greater level of awareness (94%) regarding own blood group among health care workers

The observation that knowledge score increased with education levels ($p<0.05$) seems to be logical since education would also increase awareness about all possible information related to blood donation. There is also a higher probability of having been exposed to a voluntary blood donation camp in one's educational institute since these camps are common in educational institutes. This is in agreement with study [16] carried out in Tanzania where voluntary blood donation correlated with secondary school attendance.

A study conducted by Ahmed et al [17] in Karachi found that there was no statistically significant difference between age groups and place of residence regarding blood donation. However in our study it was observed that people from urban areas had higher knowledge score. Again donors who had previously donated blood had statistically significant knowledge score ($p<0.05$). This can be explained from the fact that the most important source of knowledge for the donors was blood donation camps as an overwhelming 68% were made aware through these camps.

In our study donors with higher socio-economic status had better knowledge. This was statistically significant ($p<0.05$). However this is in contrast to

the study by Uma S et al [6] where the socio economic status did not have any statistically significant association with knowledge (p>0.05).

CONCLUSION: The demand for blood products is ever increasing. Concurrently, blood donor recruitment becomes more and more difficult. In this situation volunteer blood donation should be promoted, especially among the youngsters, as they can supply blood continuously. Volunteering behavior is culturally based and determined by various factors like religion, age, sex, attitude of person, family support, and geographical locations. Volunteer donors feel it as a responsibility to help others, regardless of personal connection. Our study found that all the respondents were willing to donate blood again if required in future. This positive feeling should be encouraged with proper knowledge regarding blood safety to meet the demand of blood requirement.

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CONFLICT OF INTEREST: We declare that there is no conflict of interest.

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