ORIGINAL ARTICLE

Correlates of voluntary blood donation among people in a hill capital in India

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In an attempt to understand the problems and to improve voluntary blood donation at Gangtok, East Sikkim, this study was designed to assess the possible reasons for donating and not donating blood. *Study Design:* Population based cross-sectional study; *Study Period:* 01.01.2004 to 30.03.2004. (Three months activity); *Setting:* Gangtok, East Sikkim; *Interventions:* None; *Study Population:* 300 adults; *Sampling Technique:* Two-stage cluster sampling technique; *Main Outcome Measures:* socioeconomic and demographic variables of voluntary blood donation. *Data Collection Procedure:* Three hundred adults were selected from the adult population of Gangtok, East Sikkim. Then by interview technique the principal investigator Dr. Namgay Shenga collected the data using the pretested, close-ended structured schedule. In 300 adults, the study showed a significant association between attitude towards voluntary blood donation and education. There was a significant association between knowledge about blood donation and attitude towards voluntary blood donation, along with moral obligation, charity and duty parameters. Variables that were not significantly associated with voluntary blood donation were age, sex, religion, marital status, community status, occupation and per-capita monthly income. Several possible reasons have been put forward for not donating blood voluntarily, varying from problems of time, procedure and physical health. The finding of the study indicated that education gives birth to an ocean of difference between the positive attitudes of the general mass towards voluntary blood donation, in true life practice. The results suggested that reinforced steps should be taken to educate the population about voluntary blood donation.

Key words: Attitude, variables, voluntary blood donation

INTRODUCTION

Blood transfusion are often needed for trauma victims, due to accidents and burns, heart surgery, organ transplant, patient receiving treatment for cancer and other diseases, such as sickle cell anaemia and Thalassaemia. Moreover, with an ageing population, and advances in medical treatment and procedures requiring blood transfusions, the demand for blood continues to increase.[1]

Persons living in developing countries are commonly anaemic and are at high risk for traumatic injuries and obstetrics complications. Blood transfusion in these settings can be life saving.[2] About 80% of maternal deaths are due to obstetric complications of pregnancy, labour and puerperium, and the single most cause accounting for a quarter of all deaths is the obstetric haemorrhage (25%), generally occurring during the postpartum period, which can lead to death very rapidly in the absence of prompt lifesaving care, one of which is blood transfusion.[3]

Efforts continue worldwide to establish and maintain sufficient numbers of regular, volunteer blood donors to ensure an adequate and safe blood supply. The constant concern to meet the demands for blood is because of the fact that only a small percentage of the eligible population actually chooses to donate blood on a regular basis.[4,5]

In 2002, the Government of India adopted the National Blood Policy, also known as the "Action Plan for Blood Safety", to ensure an adequate and safe blood supply to its blood banks. This policy relies heavily on voluntary blood donors, as they are usually assumed to be associated with low levels of transfusion-transmitted infections. Voluntary unpaid blood donors are the foundation of a safe blood supply because they are usually assumed to be associated with low levels of transfusion-transmitted infection, including HIV and hepatitis viruses. Voluntary blood donors consider themselves to be healthy, have no infections to their knowledge and come to the blood bank with the intention of helping someone.[6]

In India for a population of 900 million and bed strength of little over half a million, blood needs met in relation to population per thousand are less than 10 donations per year. As is seen, blood is always in short supply and recruitment of donors is never met fully. This state of

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affairs could be overcome to a large extent by optimization of blood usage by way of component therapy. Adoption of novel techniques for the recruitment of voluntary blood donors will motivate people at large to donate blood. Apart from the overall shortage of blood, there is still a dependency on the professional donors and other problems like inadequate infrastructure and shortage of trained personnel.[7]

In India, about three million units are collected annually against the requirement of seven million, for a population of nine hundred million. The blood collection system is still dependent predominantly on replacement family donors. According to the 1997 blood collection figures, 40% of the donors were voluntary, 30% replacement and 30% were paid donors. An autologous and directed blood donation system is not very prevalent.[8]

There should be enough blood units in a blood bank available for everybody's requirement. But nonavailability of sufficient blood units is a problem in Sikkim. 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. The blood is donated maximum on a replacement basis. Blood banks keep their pressure on doctors, nurses and the relatives of the patient and urge them to send replacement donors to maintain their stock. This is not a good system as the relatives of the patients are pressurized to find donors and it is observed many times that professional blood donors are brought to donate blood in the guise of being replacement donors. The voluntary blood donation system in the state of Sikkim is 15%.[9]

In an attempt to understand the problems and to improve voluntary blood donation at Gangtok, East Sikkim, the study was designed to assess the possible reasons for donating and not donating blood.

MATERIALS AND METHODS

Study design: Population based cross-sectional study

Study period: 01.01.2004 to 30.03.2004. (Three months activity)

Setting: Gangtok, East Sikkim, India

Interventions: None

Study population: 300 adults between the ages of 18 to 55 years. This age group was taken because of the fact that the blood donors were usually within this age group.

Sampling technique: The samples of 300 adults were recruited for the study. The adults for the study were selected by a two-stage cluster sampling technique. The list of the study population was taken from the electoral roll of 2002, Sikkim, 31 - Gangtok Assembly Constituency, from the Office of the District Collectorate, East Sikkim. There were 15 polling stations under the Gangtok Assembly Constituency, with a total of 12199 voters. Each polling station had a total of 500 to 1200 voters. In the first stage, 10 polling stations were selected randomly through draw of lots. In the second stage, a total of 30 adults were selected from each polling station randomly.

Main outcome measures: Socioeconomic and demographic variables of voluntary blood donation.

Content validity and reliability of study instruments: This study was the dissertation submitted in partial fulfilment of the requirement for the award of the degree of Masters of Public Health at Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India. The survey module on blood donation was developed on the information provided by the global experts, prior to the study, for ensuring feasibility, acceptability, time management, validity and reliability of the institute, with the assistance from the faculty members and other experts.

Study instruments: The research data was collected through a questionnaire survey. This instrument was developed to identify the socio-demographic characteristics of donors, their self-assessment in the donation activities, to encourage new members of the general mass to actively participate in the voluntary blood donation programmes. By initial translation, back-translation and retranslation followed by a pilot study, the questionnaire was custom-made for the study. The interview schedule had two parts: The first part of the interview schedule was on the socioeconomic and demographic characteristics. This included the variable - age, sex, marital status, occupation, religion, community status, and literacy status and per-capita monthly income. The pilot study was carried out at the central blood bank of the STNM Hospital, among blood donors and nondonors, following which some of the questions from the interview schedule were modified.

Data collection: The ethical permission to conduct the study in Gangtok and STNM Hospital was taken from the office of the Secretary, Health and Family Welfare Department, Government of Sikkim, and they granted the approval for data collection. The research was carried out in Gangtok, the capital of the state of Sikkim. The house number was matched with the name and the serial number of the adult subjects. The house number was traced and then the subject randomly selected was identified for the findings of the study. All the participants were explained individually about the purpose of the study and were ensured

strict confidentiality, and then verbal informed consent was taken from each of them before the interview. The participants were given the options not to participate in the study if they did not want to. Then by the interview technique the principal investigator Dr. Namgay Shenga collected the data using the questionnaire. The survey was conducted in the period of five working days per week, from 15 January till 30 March, 2004. On an average five to six interviews were conducted in a day. The attitude was assessed from the answers given for the pretested, close-ended structured schedule during the interview, and the answers were coded. Details of the questionnaire could be provided, if required. Information on blood donation was disseminated in health education sessions to complement the findings of the study.

Statistical analysis: The data collected were thoroughly checked and entered into Excel spread sheets and analysis was carried out using SPSS, Version 11 software. The procedures involved were transcription, preliminary data inspection, content analysis and interpretation. Proportions, Percentages and Chi-square test were used to find the association of attitude correlates with voluntary blood donation.

RESULTS

A total of 300 adults were interviewed. The age of the study population was between 18 to 55 years. The mean age of the participants was 35.33 years. Gangtok being the capital and an urban area, the participants came from the household with a mean size of 4.7 members [Tables 1 and 2].

The mean household income per month was Rs 1025, with a range between Rs 100 to Rs 3167. Here, total monthly expenditure was taken as a proxy for income. Almost 80% of the respondents were married and only 20% of them were single. The single included unmarried, divorced and separated. The maximum number of unmarried belonged to the age group less than 30 years. In Sikkim there are not many industries or factories. People mostly depend on government service, so Gangtok being the capital of the state, 41% of the participants were office goers and the rest were businessmen, unemployed and others who comprised of housewives, drivers, students and farmers. A very small percentage (4%) of the study population was illiterate. Per capita monthly income when categorized into three groups, by taking the 33.3rd and 66.67th percentile, was found to be as follows: 39.3% belonged to low income, 26.3% belonged to the middle income and 34.3% belonged to the high income Group [Table 3].

The majority of the study population was Hindus followed by Buddhists and others, which included Christians and Muslims [Table 4].

The schedule tribe and the number of other backward classes were more among the participants, which might be due to the fact that the two communities belonging to other backward classes had been included in schedule tribe category from the year 2002 [Table 5].

In the multivariate analysis the attitude towards voluntary blood donation was found to be statistically significant with education (Odds ratio 1.54; 95% CI 1.24 - 1.925, $P < 0.001$). It was found that odds of having a more positive attitude towards voluntary blood donation was 1.5 times more in those with a higher education level than those with a lesser education level [Table 6]. Attitude variables that were not significantly associated with voluntary blood donation

Table 1: Socio demographic features of the study population (n = 300)

Characteristics	Mean	Median	Standard deviation	Range
Age in completed years	35.3	35.0	7.9	18-55
Household size	4.7	4.5	1.7	1-13
Total monthly expenditure in Rs/month*	4361.4	4000.0	2146.1	800-12000
Monthly household per capita expenditure in rupees*	1025.9	816.6	610.7	100-3167

(* Expenditure was taken as a proxy for income)

Table 2: Age distribution (n = 300)

Age in years	Number of subjects	Percentage
<30	83	27.7
30-39	132	44.0
≥40	85	28.3
Total	300	100

Table 3: Socioeconomic characteristics of the study population

Characteristics	Number of subjects	Percentage
Marital status		
Married	238	79.3
Single	62	20.7
Total	300	100
Occupational status		
Unemployed	49	16.3
Office goers	123	41.0
Businessmen	88	29.3
Others	40	13.3
Total	300	100
Literacy status		
Illiterate	14	4.7
Primary school completed	32	10.7
Junior school completed	65	21.7
Secondary school completed	96	32.0
Senior secondary and above	93	31.0
Total	300	100
Percapita monthly income		
<700	118	39.3
700-1100	79	26.3
>1100	103	34.3
Total	300	100

Table 4: Cultural characteristics of the study population

Religion	Number of subjects	Percentage
Hindus	159	53
Buddhists	113	37.7
Others	28	9.3
Total	300	100

Table 5: Ethnicity of the study population

Community status	Number	Percentage
Other backward classes	109	36.3
Schedule tribe	101	33.7
Schedule caste	20	6.7
Others	70	23.3
Total	300	100

Table 6: The results of multivariate analysis, attitude towards voluntary blood donation with education and per-capita monthly income

Variables	Odds ratio	95% confidence interval	*P* value
Education			
<Junior school	1		
≥Junior school	1.549	1.247 - 1.925	< 0.001
Per capita monthly income			
<700	1		
700-1100	0.880	0.486 - 1.592	0.672
>700	1.333	0.771 - 2.303	0.303

were age, sex, religion, marital status, community status, occupation and per-capita monthly income [Tables 6 and 7].

The results of the bivariate analysis showed a significant association between attitude towards VBD and education and per capita monthly income with a *P* value of .004 and 042, respectively [Table 8].

Several possible reasons have been put forward for donating and not donating blood voluntarily. The respondents, 51.60% of them, who were not in favour of blood donation, gave health problems as their reason, 25.26% of them were afraid of the painful procedure they would have to undergo while donating blood, 15.78% were of the opinion that blood donation would make them weak and harm them physically and the rest had no time [Table 9].

Sixty-nine percent of the respondents who showed a positive attitude towards blood donation, indicated blood donation as a duty of an individual to the community; 26% as a charitable contribution and only 7.98 percent donated because of a sense of moral obligation [Table 10].

When the respondents were further asked in which of the conditions they would donate blood. Half of them (49%) responded for an assurance of free blood for the donor or his direct relative in the future, 25.3% did not want anything for donating blood, 20.3% wanted nonmonetary

Table 7: Attitude towards voluntary blood donation with different variables, which is found to be not statistically significant

Variables	Attitude towards donate blood voluntarily (Number/%)		Frequency	Chi-square (*P* value)
	Positive	Negative		
Age group				0.187
<30	44 (53.0)	39 (47.0)	83	
30-39	58 (43.9)	74 (56.0)	132	
≥40	36 (42.4)	49 (57.6)	85	
Total	138 (46.0)	162 (54.0)	300	
Sex				0.991
Male	104 (46.2)	121 (53.8)	225	
Female	34 (45.3)	41 (54.7)	75	
Total	138 (46.0)	162 (54.0)	300	
Marital status				0.874
Married	108 (45.4)	130 (54.7)	238	
Unmarried	30 (48.4)	32 (51.6)	62	
Total	138 (46.0)	162 (54.0)	300	
Occupation				0.430
Unemployed	18 (36.7)	31 (63.3)	49	
Office goers	60 (48.8)	63 (51.2)	123	
Businessmen	41 (46.6)	47 (53.4)	88	
Others	19 (47.5)	21 (52.5)	40	
Total	138 (46.0)	162 (54.0)	300	
Religion				0.379
Hindus	77 (48.4)	82 (51.6)	159	
Buddhists	48 (42.5)	65 (57.2)	113	
Others	13 (46.4)	15 (53.6)	28	
Total	138 (46.0)	162 (54.0)	300	
Community status				0.33
Schedule tribe	42 (41.6)	59 (58.5)	101	
Schedule caste	9 (45.0)	11 (55.0)	20	
OBC	54 (49.5)	55 (50.4)	109	
Others	33 (47.1)	37 (52.9)	70	
Total	138 (46.0)	162 (54.0)	300	

Table 8: Attitude towards voluntary blood donation and variables - Education and per-capita monthly income were found to have significant association

Variables	Attitude towards voluntary blood donation		Number	Chi-square (*P* value)
	Positive	Negative		
Education				0.004
Illiterate	4 (28.6)	10 (53.5)	14	
Primary school completed	8 (25.0)	24 (75.0)	32	
Junior school completed	24 (36.9)	41 (63.1)	65	
Secondary school completed	45 (46.9)	51 (53.1)	96	
Senior secondary and above	57 (61.3)	36 (38.7)	93	
Total	138 (46.0)	95 (31.7)	300	
Per-capita monthly income				0.042
<700	52 (44.1)	31 (26.3)	118	
700-1100	32 (40.5)	33 (41.8)	79	
>1100	54 (52.4)	31 (30.1)	103	
Total	138 (46.0)	162 (54)	300	

Table 9: Reasons for not donating blood (n = 95)

Reasons	Number	Percentage
Health problems	49	51.60
Fear of painful procedure	24	25.26
Blood donation will harm one physically	15	15.78
Have no time	7	7.36
Total	95	100

Table 10: Reasons for donating blood (n = 138)

Reasons	Number	Percentage
Blood donation is a duty of an individual to the community	91	65.94
Blood donation is a charitable contribution	36	26.08
Donate blood because of a sense of moral obligation	11	7.98
Total	138	100

benefits like time off from the office, some kind of certificate or recognition, while 4.3% wanted monetary benefit [Table 11].

DISCUSSION

Voluntary blood donation (VBD) system is by far the best and it needs to be strengthened. Thus, the study of understanding the various factors that could change the perception and awareness about blood donation among the general population may turn out to be useful for the successful implementation of the blood donation programme in the state, especially in improving the VBD system. In India, voluntary blood donors go to the blood bank with altruistic motivations. It is a tragic situation as a significant number of deaths could be avoided if every hospital had consistent access to the safe supply of this lifesaving resource. So far there has been no study done in this field in the state of Sikkim and to the horizon of our knowledge this was one of the first studies from the North East part of India.

In general, the socio-demographic pattern of our study population matched the national data. In our study, the households had a mean size of 4.7 members. In Sikkim the average household size is 4.8 persons for an urban area, 5.5 persons for a rural area and 5.4 persons for the state as a whole and India.[9] The literacy rate of the population was more than the general population of Sikkim as the state capital of Gangtok has the highest literacy rate.[10] In Sikkim, 60% of the population is Hindu, 33% is Buddhist, 5% is Christian and 1% is Muslim, which matched our study population. With regard to the ethnicity in Sikkim, 7% belong to the schedule caste, 28% belong to schedule tribe, about one-third belong to other backward classes and less than one-third do not belong to any of these group.[11]

Table 11: Conditions for voluntary blood donation

Conditions	Number	Percentage
Donate blood for assurance of free blood for donor or a relative in future	147	49.0
Donate blood but do not want anything	76	25.3
Donate blood for nonmonetary benefit	61	20.3
Donate blood for monetary benefit	13	4.3
Cannot say anything	3	1.0
Total	300	100

We found a significant association between intention towards VBD and education. There was also a significant association of voluntary blood donation with moral obligation, charity and duty parameters. Variables that were not significantly associated with VBD were age, sex, religion, marital status, community status and occupation. With regard to per capita monthly income, the analysis of our data was not conclusive enough to have a significant association with the positive motive towards VBD. Several possible reasons have been put forward for not donating blood voluntarily, varying from problems of time, procedure and physical health.

The insertion is not valid. Keep the original as: A study conducted among the students of Chulalongkon University, Thailand showed that 80% of the participants knew about blood donation and 11% of the study population had ever donated blood voluntarily. The study did not find any significant correlation of gender, age, and educational level with knowledge about blood donation. The findings of the study concluded that greater knowledge about blood donation does not lead to donation and specific campaigns are needed to convert this into actual voluntary donation.[12]

Another similar study among the students of the University of Dhaka, Bangladesh, showed that 80% of the participants showed a positive attitude towards blood donation; however, only 16% of the respondents in this study had actually ever donated blood voluntarily. Physical harm and fear were found to be the common reasons for not donating blood. The results also showed that a high number of respondents had a negative attitude towards blood donation.[13]

Another study in Baltimore, Maryland Metropolitan Area, showed that low rates of VBD by the general public have been attributed to a variety of socioeconomic, medical and attitudinal factors. Lack of awareness of the need for donation, fear of donating blood, related to perceived risk of contracting HIV and loss of physical vitality after donation have been proposed as the potential reasons for ethnic and racial disparities in blood donation.[14]

Several possible reasons have been put forward for donating and not donating blood. A similar study on blood donation

and behaviour and beliefs among a group of high school students in Mmabatho showed that donating blood was a health risk or they were uncertain if donating blood was safe. The study recommended that public appeals for blood donors should include information to dispel myths about dangers of blood donation.[15]

Researchers have found that if people have a strong positive attitude about blood donation they may be willing to donate blood even if they have a strong negative feeling. (John Cacioppo, Professor of Psychology at Ohio State University.) In this context, the results of a study in Umea, Sweden, concluded that the majority of effects elicited in blood donors by blood donation were positive, like feelings of satisfaction, greater alertness and increased well being. The positive effect did not differ from the negative with regard to the time of onset, yet their duration was reported to be significantly longer. The important finding in this study, namely, high frequency of the positive long-lasting effect elicited in blood donors by blood donation is of great importance for the recruitment of new blood donors; there by blood donation can be made less frightening and perhaps even attractive.[16]

In Lithuania, paid donors comprised 89.9% of the respondents. Research findings show that 93% of the paid donors give blood on a regular basis; while among the nonremunerated donors the same figure amounted to merely 20.6%. The idea of the necessity for remuneration is supported by 78.3% of the paid donors, while 64.7% of the non-remunerated respondents believe that remuneration is not necessary. The absolute majority of the paid donors (92%) think they should be offered a monetary compensation for blood donation, while more than half of the nonremunerated donors (55.9%) claim they would be content with a mere appreciation of the act. Provided no remuneration were offered, 28.44% of the respondents would carry on doing it, 29.6% would do it only in an emergency, 29.6% would donate blood merely to their family or friends, and 12.3% would quit it completely.[17]

In Greece, data on demographics, donation behaviour, incentives, risk perception and attitude towards donation and transfusion were analysed separately for volunteer and replacement donors and nondonors. The results showed that women and young people donate the least in Greece. Also, many donors do not donate because they are not reminded to. A small percentage of donors confessed to having concealed part of the truth to background questions. Overall, incentives to donate were considered important and included future availability of blood for self or family, paid leave from work and free blood tests. Recruitment and retention efforts should include better communication with current donors, and raise awareness among eligible donors. Staff should be educated in soliciting information from potential donors, and incentives should be better aligned to avoid conflict with ethical values and ensure honesty in the prescreening process. Although the most commonly cited reason for volunteers to not have donated are health problems (this may include rejection due to health problems), other important reasons are time constraints and lack of reminders. Regular donors had different motivations and most of them reported waiting to donate when someone in their environment was in need.[18]

The study by Blood Systems Research Institute, the Department of Laboratory Medicine, California, evaluated correlations between overall satisfaction with the donation process and donor demographics and its effect on a donor's intent to return. Blood donor satisfaction varies among demographic and donation history subgroups and is positively correlated with the intent to return for future donation. Although the primary motivation among all donors was altruism, incentives for future donation may need to be tailored according to demographic subgroups.[19]

National Heart, Lung and Blood Institute Retrovirus Epidemiology Donor Study was done to predict future blood donation behaviour and improve donor retention to understand the determinants of donor return. Younger and minority donors were less likely to return in 12 months. Predictors of donor return were higher prior donation frequency, higher intention to return, a convenient place to donate and having a good donation experience. Most factors associated with actual donor return were also associated with a high intention to return. Although not significant for actual return, feeling a responsibility to help others, higher empathetic concern and a feeling that being a blood donor means more than just donating blood were related to a high intention to return. Clearly, donor behaviour is dependent on more than one factor alone. Altruistic behaviour, empathy and social responsibility did not enter our model to predict an actual return. A donor's stated intention to give again is positively related to an actual return and while not a perfect measure, might be a useful proxy when donor return cannot be determined.[20]

The study at Spain was set in the field of social marketing and more specifically in the context of blood donation. Its principal objective focused on segregating potential donors by using inhibitors or barriers to blood donation behaviour as criteria. The study revealed that people differed significantly in their predisposition to donate, in their intrinsic and extrinsic motivations for donating blood and in the incentives that encouraged them to donate blood.[21]

In the Retrovirus Epidemiology Donor Study, most blood donors appear to have high levels of the primary prosocial

characteristics (altruism, empathy and social responsibility) commonly thought to be the main motivators for donation, but these factors do not appear to be the ones most strongly related to donation frequency. Traditional donor appeals based on these characteristics may need to be supplemented by approaches that address practical concerns like convenience, community safety, or personal benefit.[22]

In the study at the Blood Centre of Umeå University Hospital, Sweden, no statistically significant differences were found between male and female blood donors with regard to the general reasons and motives related to donating blood. The most frequently reported reasons for giving blood the first time were 'influence from a friend' (47.2% of the donors) and 'request via media' (23.5% of the donors). Among the general reasons/motives with highest ranking of importance: the most commonly reported motive for donating blood was 'general altruism' (40.3%), 'social responsibility/obligation' (19.7%) and 'influence from friends' (17.9%). General altruism' and 'social responsibility/obligation' were also the most frequent reasons for continuing to donate blood (68.4 and 16.0%, respectively). The most commonly reported obstacle to becoming a regular blood donor was 'laziness' (19.1%) followed by 'fear of needles' (10.5%).[23]

In the study in Ireland the data included socio-demographic history, donation status as well as barriers/deterrents to donation. Of the donors, 13% had donated blood within the last two years. Current donors cited 'awareness of patient needs' (88%), 'trust in the blood transfusion service' (70%) and 'an advertising campaign' (70%) as reasons encouraging them to donate blood. Lapsed donors and nondonors cited 'more frequent mobile clinics/sessions' (30% lapsed donors; 53% nondonors),' if I was asked' (28% lapsed donors; 53% nondonors), and 'more flexible opening hours' (23% lapsed donors; 44% nondonors) as reasons that would encourage them to donate. The main reasons cited by nondonors for never having donated included 'medical reasons' (41% Republic of Ireland; 43% Northern Ireland), 'lack of information' (20% Republic of Ireland; 22% Northern Ireland), 'fear of needles' (15% Republic of Ireland; 17% Northern Ireland), and 'time constraints' (12% Republic of Ireland; 13% Northern Ireland). Among the nondonor group, 10% (Republic of Ireland) and 6% (Northern Ireland) claimed that they were not permitted to donate. Replacing regular donors is a major challenge for the transfusion service providers. This study shows that by facilitating the general public by introducing more mobile clinics/sessions, more flexible opening hours and having a better level of knowledge in the community about blood donation, may encourage lapsed donors and new donors to become regular donors.[24]

A good number of regular and volunteer donors is required to ensure an adequate and safe blood supply. The results of the present study reveal interesting facts regarding people's behaviour and perception towards VBD. Intensive health education efforts were made through multiple sessions of Behaviour Change Communication (BCC) interventions to effectuate changes in willingness to donate blood.

CONCLUSIONS

The finding of the study indicated that education gives birth to an ocean of difference between the positive attitudes towards voluntary blood donation in true life practice among the general mass. We should spend some extra time counselling close associates and relatives of the recipient. A regular flow of relative donors will have a cumulative effect on the different strata of society leading to reduction in unnecessary fear associated with voluntary blood donation. We have to sincerely enquire about the family history separately to motivate them in a socio-cultural setting both inside the hospital as well as in the community. We can get even safe blood from relative donors provided there is a proper selection of donor and we should highlight it.

Limitations of Study

This was an interesting study on a serious and important theme. Still there were obviously some forms of limitations, as we had done the study in one state capital of North-eastern India. Moreover, this study was done as part of the dissertation submitted in partial fulfilment of the requirement for the award of the degree of Masters of Public Health programme, as detailed in 'METHODS'. The native state of the principal investigator Dr. Namgay Shenga was a long way from where the study was initiated. So, there were resource constraints and the study could not be developed as well as followed-up after the academic calendar was over.

Recommendations

India is a multicultural, multilingual and geographically uneven country. Any short-term solution may not help us to reach the goal of universal voluntary blood donation in the near future.

Given the findings in the present study, the following recommendations are made:

Health education

To improve knowledge about blood donation among the people with lesser educational level, preferably based on audiovisual techniques. The health system should create a wider awareness on the importance of voluntary blood donation and encourage more people to become regular donors. School curriculum could include materials to allay fears hovering around voluntary blood donation.

Removal of yths and misconceptions

The information education and communication system should have some productive plans to motivate the people for voluntary blood donation. The advertisements need to address the fear factor, which is of great concern to all the blood donors. It must also focus on clearing the myths and misconceptions about blood donations and keep the people well informed about the importance of saving life through blood donation.

Provision of incentives

The general public must be encouraged and motivated to donate blood. The provision of standard incentives, such as, future assurance of free unit/s of blood for the donor or a blood insurance scheme may be initiated. Nonmonetary incentives like certificate of recognition/free newsletters may also be other motivating factors to improve voluntary blood donation.

Provision of better facilities

Warm receptions in the blood banks, spreading awareness about the advantages of blood donation not only for the recipient, but also for the donor himself could be a motivating factor. Making people aware of recent findings, for e.g., frequent blood donation is associated with a lower risk of cardiovascular events, can motivate population to be regular donors. Proper selection of the donor is also important, even in cases of replacement and relative donors.

Provision of professional counsellors

To materialise the volumetric increase of voluntary blood donation, the blood banks as well as health services should employ professional counsellors to improve the people's knowledge and attitude with regard to blood donation.

The undisputed long-term solution to promote blood donation lies in changing the philosophical upliftment of a given population through long-term painstaking Behavior Change Communication (BCC) in a multipronged manner. The health professionals alone will not be able to meet this mammoth task.

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