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**Factors associated with Dropout among voluntary
blood donors attending State Blood Bank, Shimla,
Himachal Pradesh, India.**

By

Omesh Kumar Bharti

(MAE-FETP Scholar 2007-2008)



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January 2009

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attending State Blood Bank, Shimla, Himachal Pradesh, India.**

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(MAE-FETP Scholar 2007-2008)

**Dissertation project submitted in partial fulfillment of the requirements
for the degree of Master of Applied Epidemiology (M.A.E)**

of



**Sree Chitra Tirunal Institute for Medical Sciences and
Technology, Thiruvananthapuram, Kerala – 695 011**

**This work has been done as part of the two year Field
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At



**The National Institute of Epidemiology,
(Indian Council of Medical Research),
R- 127, TNHB, Ayapakkam, Chennai TN- 600077**

January, 2009

CERTIFICATION

This is to certify that this dissertation, entitled '**Factors associated with Drop out among voluntary blood donors attending state blood bank Shimla, Himachal Pradesh, India**', submitted by Omesh Kumar Bharti, in partial fulfillment of the requirements for the degree of Master of Applied Epidemiology, is the original work done by him and has not been submitted earlier, in part or whole, for any other (Publication or degree) purpose.



S. Ram
Director

**National Institute of Epidemiology, Chennai
(Indian Council of Medical Research)**

Dated: 31/10/05

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(Omesh Kumar Bharti)

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Abstract

Title: Factors associated with the drop out among voluntary donors in Shimla blood bank, India.

Background:

India, a country of 1.2 Billion, a bed strength of over 0.90 million and blood requirement of 8.5 million units annually, the availability of blood in India is only 4.4 million units, leaving a shortfall of 4.1 million units, signaling an urgent need to increase the donor population from 0.4% to 2% to meet the shortfall. There is no study to know about the factors associated with the high drop out of donors in the country.

Methods:

A comparative study of drop out voluntary donors (n=80) and regular voluntary donors (n=80), donating blood during reference period of 2006, was undertaken to identify the reasons for high dropout of voluntary blood donors. We calculated frequencies of all possible factors identified on literature review and did univariate and multivariate analysis using Epi-Info software version 3.3.2.

Results:

Multiple logistic regression show that three significant factors associated with drop out of voluntary donors as <25 years age, p=0.008, no knowledge of age one can donate blood, p=0.023 and no opportunity to know about blood donation, p=0.026.

On univariate analysis other significant factors were, not ever called to donate blood by the blood bank, $\chi^2 = 14.4, p=0.0001$, not given blood preferentially to donor when required, $\chi^2 = 9.1, p=0.002$, donor reaction, Yates corrected $\chi^2 = 7.83$, Fisher exact 1 tailed p=0.001.

Conclusion:

Our study clearly demonstrates that being young, less educated and having less knowledge of blood donation process are major factors for dropout of voluntary blood donors. Provider issues from the blood bank side like not calling the donors to donate blood, donor not helped to get blood when they requires it and donor reaction are also important factors for dropout.

Recommendations:

On the basis of this study we recommend to initiate a “National Donor Retention Programme” by the national and state blood transfusion councils, incorporating the factors identified in this study. The efforts to empower the donor with the knowledge of the donation process at an early age and making blood available to them in times of need would go a long way to check the dropout and retain the voluntary donors. A call based donor panel system, providing the donors opportunities to donate, especially in remote areas and making first experience of donation as pleasant, will help in retention.

It is important to create donor-clubs on the lines of successful model of pledge 25 clubs (Zimbabwe). Informative and knowledge based IEC material need to be developed. There needs to be a donor helpline or toll free number and Participatory involvement of more voluntary agencies.

1. Introduction:

Blood still remains an entity that has not been made artificially and needs to be replaced for a patient in need by another healthy human being. A well organised Blood Transfusion Service (BTS) is a vital component of any health care delivery system. An integrated strategy for Blood Safety is required for elimination of transfusion transmittable infections (TTIs) and for provision of safe and adequate blood transfusion services to the people. The main component of an integrated strategy include collection of blood only from voluntary, non-remunerated blood donors, screening for all transfusion transmitted infections and reduction of unnecessary transfusion.

Data generated through the WHO Global Database on Blood Safety (GDBS) summary report (1998-1999), reveal that globally 75 million units of blood are donated each year. Approximately 80% of the world's population has access to only 20% of the global supply of safe blood. 40% of the blood is not screened for various TTIs and only 70% of the countries do ABO and RhD grouping and compatibility testing. A key indicator of a well organized and coordinated national blood programme is a successful programme for the recruitment and retention of voluntary non-remunerated blood donors¹.

In 2002, 39 countries had achieved 100% unpaid voluntary blood donation, of which only five were developing countries. By 2004, 50 countries reported 100% voluntary donation. Of these 11 new countries three were least developed countries².

In Switzerland 11.3% persons donate blood, followed by 7% in Japan and 5.8% in Australia whereas in India only 0.4% people donate blood³.

For a country of 1.2 Billion, a bed strength of over 0.90 million and blood requirement of 8.5 million units annually, the availability of blood in India is only 4.4 million units, leaving a shortfall of 4.1 million units annually, signaling an urgent need to increase the donor population from 0.4% to 2%³ to meet the shortfall.

In India, of the 0.4% blood donors only 55% are voluntary and among them only 5-10% are repeat donors⁴. Interstate differentials are wide and alarming³.

In Utter Pradesh the voluntary blood donation percentage is merely 13% of total 29,271 blood units donated while projected requirement is 16,61,000 units. In Meghalaya voluntary donation is only 6% of total 3174 units donated while the requirement is 23,000 units. In West Bengal proportion of voluntary donation is 86% of total donations of 5,10,465 units. This may be due to the presence of a strong voluntary movement in the state. In Maharastra also the proportion of voluntary blood donors is 84% of total 3,94,868 units.

(Annexure 5)

In the state of Himachal, in 2007 only 19,374 blood units were collected of which only 12,000 (67%) units were voluntary. This implies that only 1% eligible persons^{*1} donate blood which is not sufficient to meet the demand of 60,000 units. In the state capital Shimla, 8% of the population are blood donors, majority of whom are college students who migrate after completing their studies and are lost.

Eleven years secondary data analysis of blood bank Shimla⁵ records reveals that Seropositivity of hepatitis-B among voluntary donors is 6.8/1000 while that among replacement donors is, almost double, 12/1000.

¹ The population of Himachal is 6 Million.

In 2006 there were a total of 1340 donors of these the voluntary donors were 763,(57%). Of total voluntary donors only 27% were repeat donors and 73% were single time donors. The proportion of repeat donors remained same in 2007 also and is consistent with other Indian studies⁶.

Rationale of the study:

In the wake of increase in demand of blood, it is important to recruit more donors and retain majority of them. No programme to retain voluntary donors exist in India. An important prerequisite to retain voluntary blood donors is to have knowledge about the various factors that are associated with the donor drop out.

The factors associated with drop out of voluntary donors have been studied in detail in different countries. In some studies in U.S. it was found that fear and inconvenience were major barriers to donating blood.⁷ Also some blood donation related adverse events (AEs) can negatively impact the blood donor return rate (BDRR) and decrease donor retention⁸. Recruitment messages appealing to altruism, empathy, and social responsibility values are important in getting people to donate at least once, but the effectiveness of these messages in getting them to donate again may be mitigated by one's previous donation experience or practical concerns like convenience, community safety, or personal benefit, younger donors appear to respond positively to appeals that emphasize how donating blood may help them personally⁹.

Marantidou O et al (2007) in a study done in Greece found that “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 raising awareness among eligible donors. Staff should be educated in soliciting information from potential donors”¹⁰. There are no studies of the factors associated with dropout among voluntary donors in the country, therefore a study was undertaken to identify the factors associated with high drop out amongst voluntary donors attending State Blood Bank Shimla.

2. Objectives: - The objectives of the study were to:-

- Identify the factors associated with drop out of voluntary blood donors attending State Blood Bank Shimla.
- Suggest interventions based on factors identified in (1) to reduce drop out of voluntary blood donors.

3. Methods

3.1. Study Area:- The state blood bank Shimla, caters to the need of 0.16 million population in and around the city. Blood from this blood bank is distributed to the local medical college and private hospitals. An average of 1500 units are distributed from this blood bank annually. Blood collection is mainly through a camp approach organized by various voluntary organizations (NGOs).

3.2. Study design:

A comparative study of drop out voluntary donors and regular voluntary donors donating blood during reference period of 2006 was carried out.

3.3. Study population:

Voluntary blood donors who gave blood in the year 2006 at state blood bank Shimla, doctors, technicians of the blood bank and NGOs who organized blood donation camps for the year 2006, constituted the study population.

3.4. Sample size and Sampling :

Of the 763 voluntary blood donors 80 dropout and 80 regular donors as per estimated sample size were included in the study. Two doctors and 6 of twenty NGOs were also included in the study. Details of sample size estimation are given in Annexure I.

3.4. Human subject protection:

The study protocol was submitted to and approved by the ethical committee of NIE, Chennai prior to the commencement of the study.

3.5. Case definition of dropout and regular donors³

Regular Voluntary Non-Remunerated Blood Donor :(Regular donor):

A voluntary non-remunerated blood donor who has donated at least three times, the last donation being within the previous year, and continues to donate regularly at least once per year.

Drop out donor: (Lapsed voluntary donor): A voluntary non-remunerated blood donor who has given blood in the past but does not fulfill the criteria for a regular donor.

3.6. Data collection Technique:

We interviewed both groups of donors using interview schedule consisting of semi-structured questions to collect information on various factors associated with drop out that were found on extensive literature review. Details of the same are listed in (Annexure IA).

A self- administered semi-structured questionnaire was administered to the healthcare providers of the blood bank i.e. doctors and the technicians to collect information about the facilities available in the blood bank and the problems they face, suggestions to decrease the drop out and staff getting enough financial and administrative support.

A self- administered semi-structured questionnaire was used to collect information from the coordinators of different NGOs selected to elicit information about the difficulties they face in organizing voluntary blood donations camps, help sought from the bank and help given by it and also to know about their opinion on how to bring more volunteers for donation and retain them.

Using a check list, observational visits were made to different sections of the blood bank to observe the process of blood donation in the bank and to assess the behavior of the staff, survey other facilities, identify deficiencies, if any,

and to assess, if standard operating procedures (SOPs) were being followed..

4. Data quality issues:

4.1. Quality assurance:

All the data were collected by the principal investigator. All questionnaires were pilot tested, and modified accordingly and translated in local language as per requirement. Daily scrutiny of the filled questionnaire for completeness and correctness was done and any missing/incorrect fields, were completed and corrected respectively. Data were cleaned, edited and validated before entry and analysis.

4.2. Data analysis:

Using computers and Epi-Info software version 3.3.2, we calculated frequencies of all factors identified in both the groups and compared them using χ^2 test for proportions to verify their statistical significance.

5. Results:

An equal number of regular (n=80) and dropout donors (n=80) were taken for study and the responses were received as follows:

5.1. Profile of study subjects:

Out of a total donor population under study 77% were male and 40% of the donor population mainly consisted government servants, 32% of students, 21% businessmen, and 11% journalists. The donors mainly constituted Hindus (92%) and general cast (87%). 30% of the donors did not like to disclose their income and those who disclosed it (54%) belonged to higher economic group with mean family income of Rs. 15307/- (Sd 21838/-).

Among the dropouts 71% were males and 42.5% were aged <25 years and 22% were educated below 10+2.

Among the regular donors, 84% were males and 80% of them were above 25 years of age, 89% of them were either graduates or post graduates.

5.2. Factors significantly associated with drop out donor:

Many factors were found to be significantly associated with dropout among voluntary donors like, age less than 25 years, education less than 12 years, distance of the blood bank more than 10 KM, less knowledge of age one can donate blood, less opportunity to know about blood donation, more than one year delay in eligible age and donation, not called to donate by the blood bank and not getting blood from the blood bank when required. Detailed list of factors associated with dropout is attached in Annexure 1. Each factor is described below in detail.

5.2.1.1. Age:

The median age in both the drop out and regular donors was found to be 18 years with a range from 18 years to 56 years. There was significant difference

between the different age groups under study with 64% of the donors in the middle age group (25-44 years) and 31% donors below 25 years of age. We found 42.5% dropouts in younger age group of < 25 years and this was significantly associated ($\chi^2 = 14.8$ df 3, p=0.002).

5.2.1.2. Education less than graduation:

Only than 39% of the dropout donors were post-graduates compared to the more than 56% of regular donors and the lower education was found to be significantly associated with the dropout, ($\chi^2 = 4.9$ df 1, p=0.026).

5.2.1.3. Distance of blood bank more than 10 KM:

More than 35% of the dropouts had to travel 10 kilometers or more to reach the blood bank while only 15% of the regular donors are away from the blood bank and this difference was significant, $\chi^2 = 8.8$, Df= 2, P = 0.01. With increasing distance the proportion of drop out increased significantly (χ^2 for trend is 8.604, p=0.0034).

5.2.1.4. No Opportunities to know about blood donation:

Nearly 30% of dropout donors had no opportunity to know about the blood donation compared to 7.5% of regular donors and the difference was found to be statistically significant, ($\chi^2 = 13.3$, df=1, P = 0.0002).

5.2.1.5. Not having Correct knowledge of age when blood can be donated:

39% of the dropouts did not know the correct age at which donors become eligible to donate blood compared to only 12.5% of regular donors and the difference was found to be statistically significant, ($\chi^2 = 14.4$, P = 0.0001).

5.2.1.6. Delay in donation from eligible age:

35% of regular donors donated blood within a year of their eligibility to donate while only 20% drop outs donated blood within 1 year of their

eligibility and this was significantly associated, ($\chi^2 = 4.5$, df=1,p=0.03);

Median delay in all the donors was 2 years with 0-35 years as the range.

5.2.1.7. Opinion that Donating blood is not beneficial to the body:

More than one fourth of the dropouts,(26%) said that donating blood is not beneficial to the donor compared to only 10% of regular donors saying so and the difference was statistically significant, ($\chi^2 = 8.2$, Df=1,P = 0.01).

5.2.1.8. Donor reaction:

More than 11% of dropout donors suffered mild reaction compared to the 0% in the regular donors and the difference was statistically significant.(Yates corrected $\chi^2 = 7.83$, Fisher exact 1 tailed p= 0.001).

5.2.1.9. Not called to donate by the blood bank:

While 69% of the regular donors were called to donate blood by the blood bank, only 39% of the dropout donors were called to donate and the difference was statistically significant; ($\chi^2 = 14.4$,df=1,p= 0.0001). However of those who were called, 87% of regular donors donated blood compared to only 68% of the dropout donors and difference was statistically significant ($\chi^2 = 4.77$, df=1,p= 0.03).

5.2.1.10. Not given blood when required by the donor:

Out of those donors who required blood for themselves more than 48% of dropouts said they were not given blood compared to only 14% of regular donors. The difference was statistically significant, ($\chi^2 = 9.1$,df=1, P = 0.002).

5.2.1.11. Multiple logistic regression analysis for dropout of voluntary donor:

Multiple logistic regression showed three significant factors associated with drop out of voluntary donors, viz <25 years age, p=0.008, no knowledge of

age one can donate blood, $p=0.023$ and no opportunity to know about blood donation, $p=0.026$.

5.2.2. Factors that are associated with drop out donor but not statistically significant:

Other factors studied but not found to be statistically significant were female sex, preference to donate blood, fears related to donation, income of the donors, persons in the household, age heard about donation, number of family members donating blood, time and money spent for donation, knowledge of the blood group and purpose for which blood is used, opinion if blood donation causes any harm or if donated blood is restored or not, deferral by the blood bank staff, if donors required blood for themselves or family, behaviour of the blood bank staff, expectations from the blood bank and what is that donor wanted to know about blood donation.

5.2.3. Interview with blood bank doctors:

The doctors who manage the blood banks in Shimla were of the opinion that the reason for dropout is lack of motivation and counseling and donor not getting blood when in need. They also wanted more staff and funds for better equipment and IEC and better space and facilities for the staff and the donor. They demanded more provision of funds to organize motivational camps with a target focus approach. Blood Bank need to be autonomous body so that they may not succumb to pressures from high ups. More trainings need to be organized for clinicians of the hospitals that require blood, on rational use of blood and use of components rather than whole blood.

5.2.4. Interviews with NGO coordinators:

The NGO coordinators opined that major reasons for dropout are ignorance, fear of weakness, no contact by the blood bank, not getting blood when

required resulting in negative feedback, behaviour of staff and lack of attraction to donate. They wanted a printed performa saying, in case of a camp by NGO what facilities will be provided by the blood bank. There needs to be a donor helpline or toll free number so that anyone could know about blood donation and ask any questions. Similarly there should be digitalized database of donors and so that a donors can be sent a message once in 6 months on short messaging service (SMS). The organizers suggested that doctors should also donate blood. Blood should not be given on recommendations of ministers/IAS/HAS and should be available to the donor in need. Donors should get free health checkup and tests like Hemoglobin (Hb), Blood sugar and other facilities like preference for examination in hospitals etc.

5.2.5. Interviews with Blood bank Technicians:

The reasons to not to donate again by the donors cited by the technical staff were no call from the blood bank, blunt needle of blood bags, not getting blood when required and lack of leadership of the blood bank in-charge. Their suggestions were , good quality materials should be available in the blood bank especially needle quality should be good so that it does not hurt much. There should not be shortage of technical staff. Vehicle need to be there for emergency calls. More camps need to be planned in winters. Slogan to donate on each birthday should be popularised. Donors should get blood when they require it.

5.2.6. Observations with Checklist:

On observations we found that at least on one occasion a regular donor did not get blood for himself as it was not available and another donor did not get the refreshment due to stock out of refreshment. No mechanism for pre and

post donation counseling of first time donors in the blood bank or blood donation camp was in place. No blood bank vehicle was available to carry or bring the donors on call. There is not enough space to organize a blood donation camp in the blood bank as not more than 10 persons can sit in the blood bank. No hemoglobin (Hb) testing done before taking blood and no mechanism to treat donors found anemic on examination. There was no register of patients to whom blood could not be provided by the blood bank due to non availability and therefore it is difficult to calculate exact requirement of blood from the blood bank. There was no record of donors deferred and no formal mechanism to check that donor found to be positive for any of TTIs so that they do not donate again. Generator was non-functional.

6. Discussion:

Factors significantly associated with dropout of voluntary donors are discussed below:

6.1. Young age:

Our findings of higher dropout in younger age are consistent with that of other studies like the one by Karen et al (2007) in U.S., found that Younger and minority donors were less likely to return in 12 months^{11, 9, 12}.

6.2. Sex:

Female donors constitute a small number of total donations in our study like many other studies in India⁶, but the dropout among female donors was not significantly associated unlike studies from abroad¹³. Contrary to our findings where male dropout is double than the female dropout in case they experience adverse donor reaction, more female dropouts is there and studies observe that it may be due to more negative effects experienced by females than males as concluded by Sojka BN et al (2003) Sweden¹⁴ This may be due to the fact that male donors give blood more frequently than female donors in India. In another study in Canada , Marc Germain et al¹³ (2007), found that in repeat donors, lapsed status was significantly associated with being younger and female.

6.3. Less education:

Like our findings that drop out is associated with less education, a study by Thomson RA¹⁵ et al, (1998) finds a higher proportion of those unlikely to return were first-time donors, minority-group donors, and donors with less education.

6.4. Motivation:

In our study we found that regular donors were more motivated and donated blood within same year they became eligible to donate, whereas donors who dropped out seemed to be less motivated at the outset and delay in first donation after becoming eligible to donate was more than one year.

So need is to motivate the first timers at the very first contact in the blood bank or in the blood donation camp, by the counselors or the staff, to retain them in future. We have the example of “club 25 Model in Zimbabwe” where a new pool of low risk donors was created and the students, in the age group of 16 -19, became so motivated that they created the Pledge 25 Club, committing to make at least 25 blood donations before the age of 25¹⁶.

6.5. Less opportunities to know about blood donation:

From our study we observed that those who had less opportunities to learn about blood donation dropped more than those who had this opportunity. Bir Singh et all did a cross sectional study in Delhi and found that 22.4% of the subjects studied were not even aware that blood could be donated. Only 7.7% had been ever donors. Fear of disease, not having the opportunity or not being one's responsibility response reflects a situation in which blood is donated largely for a family member in need¹⁷.

6.6. Close relative or friend donating blood:

In our study , it is seen that there were 65% donors had a close relative / friend as a donor, though we did not find a significant difference between family members and friends not donating blood as a factor for dropout but other studies find that donation by the family members has a significant influence to

retain donors. Surg et al (2005), found that immediate family member or close relative of 21% Indian donors had donated blood previously^{6, 18, 19}.

6.7. Donor reaction:

In our study we found that all the donors who had even mild donor reaction dropped out and 45% had some fear or the other related to blood donation. Fergusan et all (2007), reported from Athens, Greece, that the role of emotional regulation i.e. anticipated anxiety and vaso-vagal reactions, is central for intention to donate blood²⁰. Germain Marc et al (2007), in a study in Canada, concluded that a positive donation experience appears to be a major determinant of donor return behavior²¹.

Even some regular donors in our study think that donating blood causes harm to the body show that the donor knowledge is inadequate and need to be updated. France CR, (2008), studied that the efforts to address common donor fears and to provide useful coping suggestions may improve the effectiveness of blood donation recruitment materials^{22, 23, 24}.

6.8. Distance of blood bank:

From our study we observed that as the distance from the blood bank increases there is significant increase in dropout donors. Schreiber GB (2006) , in a study done in Southern California, found that Not having a convenient place to donate was most commonly cited as an important or very important reason for not returning by the donors²⁵

6.9. Call by the blood bank or contact with the donor:

In our study it was seen that less number of the drop outs were called to donate blood by blood bank and majority of the donors when called actually donated. A study by Joseph R. Ferrari et al (2006) in a study from N Y, U.S., reported

that reminder calls were effective in prompting donor return. Interventions other than calling the donors tried in other countries like FM radio panel discussions, email, letters, phone calls and telling the donors their screening results and telling them how special their blood group may be helpful to recruit more donors and retain them. (Literature review Annexure I, 1.2).

6.10. Donors not getting blood when required by donor:

Many of the donors did not get blood when required signifies that dropouts may have been associated with the un-fulfillment of the requirement for blood by the donor themselves, as 14% of the regular and 48% of the dropouts donors did not get blood when required. We did not find other studies to compare this aspect of dropout.

6.11. No correct knowledge of age blood can be donated:

One of the major finding of this study was low knowledge about the blood donation process as a whole in dropouts than in regular donors. If the donors do not know the correct age of donation how can they be expected to be regular donors. We did not find other studies to compare this aspect of dropout.

6.12. Behaviour of the blood bank staff:

The majority donors wanted that the staff of the blood bank should be supportive to the donor and help ease their apprehensions about donation.

Thomson RA et all (1998), reported in Maryland, USA., that the highest projected loss among "safe" donors was seen for those who gave a fair to poor assessment of their treatment by blood center staff or of their physical well-being during or after donating¹⁵. Many of the donors said that at least staff should help the needy to get blood and put in efforts for that rather than plainly refusing blood.

6.5. Seasonal variations:

Data analysis clearly show a trend of seasonal variations (Annexure 6) in donation pattern in Shimla as less number of donors turnout for donation during the winters due to extreme cold conditions which is in contrast to an interesting study by *Hoekstra T .et al (2007)*, done in Netherlands underlining that there is definite relationship between the donor deferral and the environmental temperature and this is more in case the variation is more²⁶ leading to more deferral during summers.

Summary:

To sum up the discussion we can say that various factors that need to be addressed to check the high drop out among voluntary blood donors are less knowledge about the donation process, less motivation and conviction to donate, fear of donation process, no contact by the blood bank and non availability of blood to donor in need. Less knowledge at young age and failure to keep in touch with them restricts the number of donations by the donor.

7. Conclusions:

Our study clearly demonstrates that being young, less educated and having less knowledge of blood donation process are major factors for dropout of voluntary blood donors. Provider issues from the blood bank side like not calling the donors to donate blood, donor not helped to get blood when they requires it and donor reaction are also important factors for dropout.

8. Recommendations: On the basis of this study we recommend to initiate a “National Donor Retention Programme” by the national and state blood transfusion councils, incorporating the factors identified in this study.

More efforts to empower the donor with the knowledge of the donation process at an early age is crucial for their retention. For the pre donation and post donation counseling to the donors at the very first contact with the blood bank, one counsellor and one donor recruitment officer in each blood bank need to be provided as also recommended by NACO in its policy document, National Blood Policy, 2007, that also recommended a separate cadre and promotional opportunities to suitably trained staff in the blood bank.

We need to modify the donor recruitment form (Annexure V), to say that the blood bank staff will do its best to make blood available to the donor in case they need it in emergency and remove the lines that absolves the blood bank of any consequence arising out of the process of donation thereby putting fears and apprehensions in the mind of donors.

To organize the donors and to remain in touch with them for calling them to donate, it is important to create donor-clubs on the lines of successful model of pledge 25 clubs (Zimbabwe). This could be through “red ribbon clubs” & “Life Savers Clubs” in all colleges and recognition of donors with a special badge “I am a voluntary donor- Healthy and Fit” or “I save lives”.

Better and knowledge based IEC material need to be developed. There needs to be a donor helpline or toll free number so that anyone could know about blood donation and ask any questions if any. Participatory involvement of more voluntary agencies, flexible funds for blood banks, more awareness camps in rural areas and donor appreciation mechanisms, will help in retention

of voluntary blood donors.

Limitations of study:

The study was restricted to the donors attending state blood bank in Shimla and did not consider donors attending other two blood banks due to logistic and time constraints.

This may be considered a pilot study and factors associated with dropout donors may be studied further in other blood banks.

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ANNEXURES

Annexure 1

Literature review

The shortage of blood has always been a problem not only in developing countries but in developed countries as well. There have been many studies that advocate ways to promote voluntary blood donation, but these have achieved limited success till date.

While recruitment of donors is itself a daunting task to retain them is still difficult especially at a time when there is no programme for retention of the blood donors in India.

Therefore the retention of blood donors is one of the major problems in making a stable donor base to fall back upon in emergencies. Some of the factors associated with drop outs among voluntary donor are discussed below based on review of existing literature.

1. Age :

1.1: Young age:

In a study by Karen¹ et al (2007), younger and minority donors were less likely to return in less than a year period, 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 high intention to return.

In a study by Shimian Zou et al (2008), Changing age distribution of the blood donor population in the United States², they found that Donations by repeat donors 50 years or older as a proportion of total donations increased from

22.1 percent in 1996 to 34.5 percent in 2005, or 1.4 percent per year, whereas donations from repeat donors of 25 to 49 years decreased from 49.1 percent in 1996 to 37.1 percent in 2005, or 1.3 percent per year, In another study the largest differences in prior donations were by age and donor status, with older and current donors having given more frequently. Another study by Lemmens (2005), show that Among students, determinants of the intention to become a blood donor include self-efficacy, attitude, personal moral norm regarding blood donation, and subjective norm (perceived social support)³.

1.2: Interventions tried to increase the donation:

1.2.1: FM radio :

Jean-Pierre Allain et al. (2008), in Sub-Saharan Africa, reported that FM radio interaction with prospective donors was five times more effective in repeat donations from donors compared to other volunteer donors. Use of FM radio in a culturally and socially adapted environment to make the gift of blood a pleasurable and festive experience generated a new pool of blood donors spontaneously repeating donations.⁴

1.2.2: e-mail:

Similarly email campaign proved effective as demonstrated by Geyer ME (2005) an appeal to donors through email helped in increasing donor base by 74%, and email by the blood bank was more effective than through other organizations.⁵ Chamla JH et al (2006), concluded that prospective donors were sent a recruitment letter that included information about their own blood type and the percentage of the general population with the same blood type who donated, 43% more likely to return to donate.⁶

1.2.3: Medical testing of donors:

Nguyen DD et al (2008) concluded Medical testing was the most highly rated incentive for future donations, followed by frequent donor programs and convenient donation times and locations.⁷

1.2.4: Recruiting by telling the blood group:

Chamla JH et al (2006), concluded that Experimental participants were sent a recruitment letter that included information about their own blood type and the percentage of the general population with the same blood type who donated, 43% more likely to return to donate⁶.

1.2.5: Reminders calls:

The results of another study by Joseph et al (2006), indicated that a reminder call was effective in prompting pledged donors to attend a college drive. The phone call prompt might have been effective because of the social pressure which the recruiter exerted on the donors⁸.

1.2.6: Model 25 of Zimbabwe:

International federation of red cross and red crescent societies 2007 reports an example of club 25 Model in Zimbabwe where a new pool of low risk donors was created and the students, in the age group of 16 -19, became so motivated that they created the Pledge 25 Club, committing to make at least 25 blood donations before the age of 25.

2.Sex:

A study by Shimian Zau et al, done in U.S. (2007), show that the effective number of donors decreased by more than 10 percent in female and male repeat donors of age 20 to 49 years and female and male repeat donors of age 25 to 39 years decreased by greater than 40 percent therefore the aging patterns of blood donors suggest the need for improved recruitment and retention in the young adult and middle-aged groups².

3.Income as a determinant of donor dropout:

It is difficult to say that income influences the decision to donate and there are limited studies to substantiate this as fact. One Indian study found that Maximum donors (84.33%) belonged to middle socioeconomic classes (Upper middle, middle and lower middle) followed by upper class (14%)⁹.

4. Donation by family and friends:

4.1:Family and friends as motivators to donate:

The results of a study by Randy P et al (2006) suggest that both friends and, to a lesser extent, family members appear to have an impact on past, present, and future donation behavior¹⁰.

4.2: influence of active donors:

Logistic regression analysis by Geston G et al (2007) indicated that for new donors, intention and age were the only determinants of donor behavior¹¹.

Other study by Nilsson B et al (2007), found that altruism was the most common general motive for donating blood. However direct influence from

'friends/relatives', 'media appeal' and other types of recruitment were more commonly reported as reasons to retain these subjects as active blood donors¹².

Misje AH et al (2005) studied that the single, most important, recruitment channel was the influence of active blood donors. Five dimensions of blood-donor motivation were identified by factor analysis. These were: altruism and empathy; social reasons (such as the influence of friends and family); strengthening of one's self-esteem; positive experiences associated with donation; and a moral obligation to donate¹³.

DJ Oborne et al reported in their study that a large proportion (44.5%) of donors stated that they had donated blood because of contact with other donors. It was further observed that 17.3% donors had a close relative / friend as a donor. However there was no peer pressure to donate blood¹⁴.

5. Reasons for dropout:

In a study in Malaysia, less than satisfactory donor services carried out by rotational staff or nurses called in on ad hoc basis to serve blood bank. The lack of dedicated staff is because these nurses prefer looking after patients rather than donors as they are not trained in donor care¹⁵.

Thomson RA et al, studied that a higher proportion of those unlikely to return were first-time donors, minority-group donors, and donors with less education. The highest projected loss among "safe" donors was seen for those who gave a fair to poor assessment of their treatment by blood center staff or of their physical well-being during or after donating¹⁶. Bharucha in his study found that In the South-East Asia region (SEAR) lack of resources, lack of professional

management, myths and misconceptions arising from cultural and social differences form a barrier to blood donation¹⁷.

Surg Lt Cdr Sougat Ray, in a study undertaken the motivational factors leading to voluntary blood donation and understanding the psychosocial variables of blood donors. 27% of the donors had donated blood previously. The common motivational factors to donate blood were for 'a good cause', 'for the society' and 'to save a life'. 4.67% of them donated blood for self satisfaction⁹.

6. Adverse donor reactions and decision to donate:

Mathew SM et all (2007) found that fear and inconvenience were major barriers to donating blood¹⁸.

Steele WR(2008), studied that younger donors appear to respond positively to appeals that emphasize how donating blood may help them personally¹⁹.

7 Intention to donate:

In a study by Barbara M et al (2008) in a psychological model based study reported that moral norm, donation anxiety, and donor identity indirectly predicted intention through attitude highlighting the importance of considering in the future how donors' motivations for donating blood may evolve as a function of the number of prior donations²⁰.

Another study by Marc Germain et al (2008) show that lapsed status was inversely associated with satisfaction with the last donation experience in both first time ($p = 0.043$) and repeat ($p < 0.001$) donors²¹.

Murphy et al (2006) in a study done in California, found that a T-shirt incentive had no apparent effect, but an empathetic message significantly improved the

return donation rate.²²

8 Seasonal variation and blood donation:

A study by *Hoekstra T .et al (2007)*, done in Netherlands underlining that there is definite relationship between the donor deferral and the environmental temperature and this is more in case the variation is more²³ leading to more deferral during summers whereas the highest Hb deferral of 11.1 percent was observed for female whole-blood donors on days with a maximum temperature of 25 degrees and above. In all four donor categories a gradual increase with temperature was observed with 1.7-2.2 times higher deferral rates on hot days ($\geq 25^{\circ}\text{C}$) compared to cold days ($< 5^{\circ}\text{C}$).

To conclude, young donors and the influence of family and friends to motivate them to donate is important factor to retain donors. Innovative interventions to retain donors are important. To translate the intention of the donors to donate again also need special strategies to be in place by the blood bank.

Annexure I A:

A detailed search of the literature and also focus group discussion with the donors and individual interviews with the known regular donors points out the following factors as de-motivation to donate blood :

Blood bank related

- Un-pleasant first donation.
- Maltreatment by blood bank staff.
- Deficiency of care during or after donation.
- Blood bank not nearby or suitable convenient place / camp
- No call from blood bank or regular contact with the blood bank or blood donation camp.
- No counseling in blood bank.

Individual perceptions

- Education and knowledge.
- No peer pressure to donate or no family member is donor- or no contact with regular donor.
- No Knowledge of beneficial effects of donation apart from social concern.
- Fear of weakness/ lack of correct information.
- Apprehension of improper use of blood by the blood bank or blood wastage.
- Fear of contaminated needle and subsequent infection like HIV.
- Lack of Motivation
- Lack of counselor in blood bank
- Apprehension that they would not get blood in need.
- 16. Fear of adverse donor reaction

Annexure II: Sample size:

All 763 voluntary blood donors, two doctors ,four technicians and twenty NGOs involved in the blood bank for the year 2006 constituted study population.

Sample size estimation¹:

Formula for Estimating proportion.

$$n = Z_{(1-\alpha)}^2 P(1-P)/d^2$$

P = anticipated population proportion

Z = Z value corresponding to value of $1-\alpha$

(1 - α) = Confidence interval

d= estimated precision

Category	Sampling Frame	Assumption	Sample size
Regular voluntary donors	All the 763 vol. donors	P=27%	$(1.96)^2 \frac{26(100-26)}{10 \times 10} = 75$
Drop out donors	968 drop out donors	P= 73%	$(1.96)^2 \frac{26(100-26)}{10 \times 10} = 76$
Doctors	2	All will be taken	2
Technician	4	All will be taken	4
NGOs	20	Every third NGO will be included in the study.	6

1.Blood donors:

Using right size software we calculated the sample size with a target population size of 763 voluntary donors, estimated proportion of 73% of dropout donors among them with a confidence interval of 95% and an error of 10%,yielded a sample size of 76, rounded off to 80.The same number of regular donors were taken for comparison.

A total of 160 donors were included in the study 80 each of regular and dropped outs.

2. All the two doctors and four technicians of the state blood bank were included.
3. The SIX regular NGOs were included through systematic sampling every third NGO was included.

¹ .Sample size determination in health studies Lwanga SK, Lemeshow,S, WHO, Geneva, 1991,page 25.

ANNEXURES-III

INFORMATION SHEET FOR VOLUNTARY BLOOD DONORS PARTICIPATING IN THE RESEARCH ON THE SUBJECT

Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India .

I am ...Dr. Omesh Bharti. Working in the state blood bank D.D.U. Hospital, Shimla.

Low turn out of voluntary blood donors is a major problem in our district. We are trying to study the factors associated with low turn out of voluntary blood donors in the state blood bank, Shimla.

Purpose:

The purpose of this study is to generate information on the Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India .

The information generated through the study will assist in planning suitable interventions to further improve the voluntary donation and retain the voluntary donor.

Procedures We invite you to take part in the study to answer the some research questions. You will be interviewed using semi structured questionnaire and your answers to the questions in the questionnaire to be filled by the principal investigator. The study is totally risk free for you. The study does not involve any invasive procedure or tests. The study will not implicate or hold you responsible for the results, and no harm will be caused to you.

Benefits:

The information generated through the study will assist in planning suitable interventions to dispel your doubts about blood donation and also improve the services of the blood bank for blood donors.

Incentives:

You will not be provided with any incentive to take part in the research

Confidentiality:

The information that we collect from this research project will be kept confidential. Information about you that will be collected from the study will be stored in a file which will not have your name on it. Which number belongs to which name will be kept under lock and key, and will not be divulged to anyone except to the data processing unit.

Right to refuse or withdraw:

Your participation in the study is entirely on a voluntary basis. You can choose to leave the study at any time.

Alternatives to participation:

If you do not want to participate in the study, you are free to do so.

Whom to contact:

This proposal has been reviewed and approved by the Institutional Ethics Committee of National Institute of Epidemiology, Chennai-77 which is a committee that makes it sure that research participants are protected from harm. If you wish to ask questions later, you may contact :

Local Principal Investigator:

- (1) Name:..... Dr. Omesh Bharti. Working in the state blood bank
D.D.U.
Hospital, Shimla.....
Phone number 9418120302

ANNEXURES-IV

INFORMATION SHEET FOR INCHARGE BLOOD BANK PARTICIPATING IN THE RESEARCH ON THE SUBJECT

Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India .

I am ... Dr. Omesh Bharti. Working in the state blood bank D.D.U. Hospital, Shimla. Low turn out of voluntary blood donors is a major problem in our district. We are trying to study the factors associated with low turn out of voluntary blood donors in the state blood bank, Shimla.

Purpose:

The purpose of this study is to generate information on the Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India .

The information generated through the study will assist in planning suitable interventions to further improve the voluntary donation and retain the voluntary donor.

Procedures:

We invite you to take part in the study to answer the some research questions.

You will be interviewed using semi structured questionnaire and your answers to the questions in the questionnaire to be filled by the principal investigator. The study is totally risk free for you. The study does not involve any invasive procedure or tests. The study will not implicate or hold you responsible for the results, and no harm will be caused to you.

Benefits:

The information generated through the study will assist in planning suitable interventions to further improve the availability of blood in the blood bank by focused planning keeping in view the factors identified for drop out and retention of voluntary blood donors.

Incentives:

You will not be provided with any incentive to take part in the research

Confidentiality:

The information that we collect from this research project will be kept confidential. Information about you that will be collected from the study will be stored in a file which

will not have your name on it. Which number belongs to which name will be kept under lock and key, and will not be divulged to anyone except to the data processing unit.

Right to refuse or withdraw:

Your participation in the study is entirely on a voluntary basis. You can choose to leave the study at any time.

Alternatives to participation:

If you do not want to participate in the study, you are free to do so.

Whom to contact:

This proposal has been reviewed and approved by the Institutional Ethics Committee of National Institute of Epidemiology, Chennai-77 which is a committee that makes it sure that research participants are protected from harm. If you wish to ask questions later, you may contact :

Local Principal Investigator:

Name: Dr. Omesh Bharti. Working in the state blood bank D.D.U.
Hospital, Shimla
Phone number 9418120302

ANNEXURES-V

INFORMATION SHEET FOR TECHNICIAN BLOOD BANK PARTICIPATING IN THE RESEARCH ON THE SUBJECT

Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India .

I am Dr. Omesh Bharti. Working in the state blood bank D.D.U. Hospital, Shimla. Low turn out of voluntary blood donors is a major problem in our district. We are trying to study the factors associated with low turn out of voluntary blood donors in the state blood bank, Shimla.

Purpose:

The purpose of this study is to generate information on the Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India .

The information generated through the study will assist in planning suitable interventions to further improve the voluntary donation and retain the voluntary donor.

Procedures:

We invite you to take part in the study to answer the some research questions.

You will be interviewed using semi structured questionnaire and your answers to the questions in the questionnaire to be filled by the principal investigator. The study is totally risk free for you. The study does not involve any invasive procedure or tests. The study will not implicate or hold you responsible for the results, and no harm will be caused to you.

Benefits:

The information generated through the study will assist in planning suitable interventions so as to remove hurdles in the smooth functioning of the blood bank and make available the facilities required by you.

Incentives:

You will not be provided with any incentive to take part in the research

Confidentiality:

The information that we collect from this research project will be kept confidential. Information about you that will be collected from the study will be stored in a file which

will not have your name on it. Which number belongs to which name will be kept under lock and key, and will not be divulged to anyone except to the data processing unit.

Right to refuse or withdraw:

Your participation in the study is entirely on a voluntary basis. You can choose to leave the study at any time.

Alternatives to participation:

If you do not want to participate in the study, you are free to do so.

Whom to contact:

This proposal has been reviewed and approved by the Institutional Ethics Committee of National Institute of Epidemiology, Chennai-77 which is a committee that makes it sure that research participants are protected from harm. If you wish to ask questions later, you may contact :

Local Principal Investigator:

Name: Dr. Omesh Bharti. Working in the state blood bank D.D.U.
Hospital, Shimla
Phone number 9418120302

ANNEXURES-VI

INFORMATION SHEET FOR NGO COORDINATOR PARTICIPATING IN THE RESEARCH ON THE SUBJECT

Factors associated with regular and drop out voluntary blood donors attending State
Blood bank, Shimla, Himachal Pradesh, India .

I am Dr. Omesh Bharti. Working in the state blood bank D.D.U. Hospital, Shimla. Low turn out of voluntary blood donors is a major problem in our district. We are trying to study the factors associated with low turn out of voluntary blood donors in the state blood bank, Shimla.

Purpose:

The purpose of this study is to generate information on the Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India .

The information generated through the study will assist in planning suitable interventions to further improve the voluntary donation and retain the voluntary donor.

Procedures:

We invite you to take part in the study to answer the some research questions.

You will be interviewed using semi structured questionnaire and your answers to the questions in the questionnaire to be filled by the principal investigator. The study is totally risk free for you. The study does not involve any invasive procedure or tests. The study will not implicate or hold you responsible for the results, and no harm will be caused to you.

Benefits:

The information generated through the study will assist in planning suitable interventions to help you organize more of the blood donation camps and make available the facilities required for the smooth functioning of the camp.

Incentives:

You will not be provided with any incentive to take part in the research

Confidentiality:

The information that we collect from this research project will be kept confidential. Information about you that will be collected from the study will be stored in a file which will not have your name on it. Which number belongs to which name will be kept under

lock and key, and will not be divulged to anyone except to the data processing unit.

Right to refuse or withdraw:

Your participation in the study is entirely on a voluntary basis. You can choose to leave the study at any time.

Alternatives to participation:

If you do not want to participate in the study, you are free to do so.

Whom to contact:

This proposal has been reviewed and approved by the Institutional Ethics Committee of National Institute of Epidemiology, Chennai-77 which is a committee that makes it sure that research participants are protected from harm. If you wish to ask questions later, you may contact :

Local Principal Investigator:

Name: Dr. Omesh Bharti. Working in the state blood bank D.D.U.

Hospital, Shimla

Phone number 9418120302

ANNEXURES-VII

Donor Consent Form

Dear Participant,

Greetings!

I am Dr.Omesh Bharti a FETP Scholar, doing research on factors responsible for non retention of voluntary blood donors. We collected information about you from the blood bank and wish to ask you few questions. All your answers to our questions will be kept confidential and will not be told to anyone at any cost. Your name will not be used in any report of the survey. If you do not like any of my questions, please feel free to not to answer. If you are tired with the questions, you are free to stop me at any time. You can refuse to answer any of my questions at any time without giving any reason. If you wish to know more about this survey, we will be happy to answer any questions you may have. If you have any questions at a later stage, you may contact me on my phone number 9418120302.

DECLARATION:

"I have read the contents of this consent form/ the contents of this consent form have been read out to me in the language I fully understand. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to take part in this survey."

BLOOD DONOR Sign :__

Witness Sign:__

(Consent form for Donors Will be translated into Hindi in case they do not know English)

ANNEXURES-VIII

CONSENT FORM FOR THE DOCTOR

Dear Participant,

Greetings!

I am Dr.Omesh Bharti a FETP Scholar, doing research on factors responsible for non retention of voluntary blood donors. We wish to ask you few questions. All your answers to our questions will be kept confidential and will not be told to anyone at any cost. Your name will not be used in any report of the survey. If you do not like any of my questions, please feel free to not to answer. If you are tired with the questions, you are free to stop me at any time. You can refuse to answer any of my questions at any time without giving any reason. If you wish to know more about this survey, we will be happy to answer any questions you may have. If you have any questions at a later stage, you may contact me on my phone number 9418120302.

DECLARATION:

"I have read the contents of this consent form/ the contents of this consent form have been read out to me in the language I fully understand. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to take part in this survey."

BLOOD BANK INCHARGE Sign :__

Witness Sign:__

ANNEXURES-IX

CONSENT FORM FOR THE BLOOD BANK TECHNICIAN

Dear Participant,

Greetings!

I am Dr.Omesh Bharti a FETP Scholar, doing research on factors responsible for non retention of voluntary blood donors. We wish to ask you few questions. All your answers to our questions will be kept confidential and will not be told to anyone at any cost. Your name will not be used in any report of the survey. If you do not like any of my questions, please feel free to not to answer. If you are tired with the questions, you are free to stop me at any time. You can refuse to answer any of my questions at any time without giving any reason. If you wish to know more about this survey, we will be happy to answer any questions you may have. If you have any questions at a later stage, you may contact me on my phone number 9418120302.

DECLARATION:

"I have read the contents of this consent form/ the contents of this consent form have been read out to me in the language I fully understand. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to take part in this survey."

BLOOD BANK TECHNICIAN

Sign :__

Witness

Sign:__

ANNEXURES-X

CONSENT FORM FOR THE CO-ORDINATOR NGO

Dear Participant,

Greetings!

I am Dr.Omesh Bharti a FETP Scholar, doing research on factors responsible for non retention of voluntary blood donors. We wish to ask you few questions. All your answers to our questions will be kept confidential and will not be told to anyone at any cost. Your name will not be used in any report of the survey. If you do not like any of my questions, please feel free to not to answer. If you are tired with the questions, you are free to stop me at any time. You can refuse to answer any of my questions at any time without giving any reason. If you wish to know more about this survey, we will be happy to answer any questions you may have. If you have any questions at a later stage, you may contact me on my phone number 9418120302.

DECLARATION:

"I have read the contents of this consent form/ the contents of this consent form have been read out to me in the language I fully understand. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to take part in this survey."

COORDINATOR NGO

Sign :__

Witness

Sign:__

ANNEXURES-XI

CHECK LIST FOR OBSERVATION IN STATE BLOOD BANK, SHIMLA TO STUDY

"Factors associated with regular and drop out voluntary blood donors attending State Blood bank, Shimla, Himachal Pradesh, India".

DONOR RELATED:

1. The number of persons that can sit in the blood bank to organize a blood donation camp if it is to be organized in the blood bank.

a) 10 b) 20 c) 30 d) 40

2. No. of donors given refreshment at the blood bank?

a) Every donor b) some donors

3. The blood donor being greeted respect by the bank staff.

a) Yes b) no

4. Arrangement for welcome drinks?

a) Yes b) no

5. Blood bank vehicle available to carry donors.

a) Yes b) no

6. The first time donor being counseled by any of the staff members.

a) Yes b) no

7. The donor is being or thanked upon after the donation .

a) Yes b) no

- 8.The donor leaving the bank smiling.

a) Yes b) no

9. The donor being asked by the staff to come again and donate.

a) Yes b) no

10. In case of a donor reaction is the donor properly being looked after.

a) Yes b) no

11. Any argument between the voluntary donor and the staff.

a) Yes b) no

12. Any counseling done to prepare the relatives of the patient to donate the blood.

a) Yes b) no

- 13.The number of times blood bank staff donated blood in case there is emergency and nobody is there to donate.

14. Donor feedback mechanism in place.

a) Yes b) no

15. Donors counseled at camp sites.

- a) Yes b) no

16. Post donation counseling provided for reassurance in blood bank.

- a) Yes b) no

17. No of donors for whom Hb testing done to tell them about their hemoglobin levels.

BLOOD BANK RELATED:

18. Are standard operating protocol (SOPs) available in the blood bank.

- a) Yes b) no

19. The record of the patients being kept whom blood could not be given.

- a) Yes b) no

20. Voluntary donors being given certificates.

- a) Yes b) no

21. Blood bank keeping a record of blood donor deferral.

- a) Yes b) no

22. What services are provided donors found anemic on medical check up.

- a) Yes b) no

23. Generator functional.

- a) Yes b) no

ANNEXURES-XII

QUESTIONNAIRE FOR THE BLOOD DONORS

Questionnaire for the study of factors related to blood donor dropout/retention, State Blood Bank Shimla, Himachal Pradesh 2008.

ID No. No _____. Regular/drop out donor_____ Date _____

Namaskar, my name is Dr. Omesh Bharti. I would like to discuss some of the facts regarding your blood donation which would help us improve the blood bank services in the area. I would appreciate if you could spare some time to answer my questions. Your responses will be treated as confidential.

1. Identification Particulars:-

Respondent Name:

Age _____

Sex _____

Interviewer Code _____

Phone no._____

Address_____

Socio-economic Particulars:-

1. What is your age? (Years Completed) _____

2. What is your religion? 1) Hinduism 2) Buddhism 3) Christianity
 4) Islam 5) Other

3. What is your caste? (write exact cast) _____

4. How many years of education have you completed? _____

5. What is your occupation? specify_____

6. Could you tell me what your monthly family income is?

(Enter exact income) _____

7. How many members are there in your household?

Knowledge related :-

8. Have you ever had the opportunity to know about the blood donation?

a) yes b) no

9. Do you know at what age a person becomes eligible to donate blood?

a) yes b) no

10. Do you know the purpose for which the blood is used?

a) yes b) no

11. In your opinion does donating blood cause any harm to the body? If yes, then specify.

a) yes ----- b) no

12. Do you know if blood donation is beneficial to the donor's health as well?

a) yes b) no

13. Is the blood donated by you always restored in the body or lost?

a) yes b) no

14. What do you think are uses of your blood?

Sources of Information:-

15. When did you first hear about the blood donation?

16. From whom all did you hear it?

17. How old were you when you first hear about blood donation, age in years-----?

18. Do you know what your blood group is?

19. If yes, please specify it,_____?

20. Have you seen/heard some of the slogans on blood donation(if no go to 22)? If yes can you please tell me some of them?

21. Which slogan or saying you like the most as a motivation to donate?

Now I will ask you some questions about your first blood donation?

22. When did you first donate blood,(Year) ?

23. Were you ever deferred? If yes give Reasons?

24. Why did you donate blood first time,(reasons) ?

25. Number of times you donated blood in life and why, reasons?

26. What are your experiences while donating for the first time?

27.What are the reasons to donate blood, now ?

28. How often in the last one year have you donated blood,?

29. Reasons for the response above?

30. How many of your family members have donated blood ever?

31. Did any of them have any problems after donation?

32. If yes describe the problem?

33. Please describe what the blood bank staff do to address the problem experienced after donation.

Access to blood bank:-

34. How far is the blood bank from your home(KM) and how it affects your intention to donate?

35(a). Have you ever been called to donate blood? a) yes b) no

35(b). If yes, On call you donated blood or not and why?

35(C) If no, would you have donated if called. a) yes b) no

36.. How much time do you have to spend to donate blood once (including travel time)? Minutes._____

37. Is transport is provided to you for blood donation?

38. if yes who provides the transport_____ ?

39. If not, how much money do you spend to reach the blood bank (Rs._____)?

ATTITUDE TO BLOOD DONATION

40. Please list your blood donation preferences (Tick all that apply)?

- a) Individual patients b) in camps c) Blood bank d)any other specify

41. Did you ever require blood for yourself or friend/ family? a) yes b) no

42. Were you allotted blood preferentially/ immediately being a donor?

- a) yes b) no

43. Have you ever discussed donation with friends and relatives.?

a) yes b) no

44. Did your discussion and brought them to camp or blood bank for donation, specify?

45. did you or any of your friends and relatives have some fears about donation, if yes, what are they? _____

EXPERIENCE OF DONOR WITH BLOOD BANK STAFF

44. How would you rate the behavior of the blood bank staff

a) Cordial b) indifferent c) very sympathetic d) hostile

45. Are you served refreshment every time you donate?

a) yes b) no

46. when you come to donate blood what are your expectation from the blood bank?

47..Any suggestions you would like to give for better management of blood donors/ blood camps?

48. Will you continue to donate blood in future?

a) yes b) no

49. Reasons for response in 48.

50. Is there anything else you would like to know about blood donation?

a) yes b) no

51. If yes, please specify.

52. Is there any suggestion you would like to give to encourage voluntary donation.

Thanks for your time

ANNEXURES-XIII

QUESTIONNAIRE FOR THE INCHARGE STATE BLOOD BANK SHIMLA

Questionnaire for the study of factors related to blood donor dropout/retention, State Blood Bank Shimla, Himachal Pradesh 2008.

ID No. _____ Date _____

Namaskar, my name is Dr. Omesh Bharti working in the state blood bank D.D.U. Hospital, Shimla.. I would like to discuss some of the facts regarding your blood donation which would help us improve the blood bank services in the area. I would appreciate if you could spare some time to answer my questions. Your responses will be treated as confidential.

Identification Particulars:-

Respondent Name:

Age _____

Sex _____

Interviewer Code _____

Education_____

Phone no._____

Address_____

Training Particulars:-

1. Since how long are you in the blood bank?
 2. Have you been trained in the blood banking, yes/no?.
- If yes:
- 2(a): Where were you trained?
 - 2(b): Who trained you?
 - 2(c):What was the duration of the training?

Blood bank related knowledge:-

3. What do think about the facilities available in the blood bank?

4. Are these facilities adequate or need some improvement? Please tell in detail?

5. Do you think the number of voluntary donors of the blood bank are enough to meet the demand? yes/no.

6. If no, what do you think should be done to enroll more voluntary donors or to retain regular ones?

7. Have you faced with the adverse donor reaction?

- 8.If yes, do you feel that donors was satisfied with the treatment given, if no what else do you think should have been done?

9. What do you think are the reasons for donors not giving blood more than once?

10. What do you think as reason for donors who give blood regularly?

11. Do you get enough support for conducting IEC?

12. If yes, how many IEC camps did you conduct last year?

- 12(a) Do you think that blood is sometimes wasted due to unavailability of a suitable recipient?

12(b) But is the percentage of blood wastage due to contamination?

12(c) But is the percentage of wastage due to excess of camps lasr year ?

13. What is your target population and what strategy you have for donor recruitment? And why?

14.Do you feel that if you get more support from the authorities then you would be able to arrange more camps and give better services to the donors? Please explain.

15.What do you think are the reasons that majority donors do not return to give blood again?

16. How do you purpose to overcome these reasons to increase the donations and help a single time donor to become a regular donor?

17. What is the major single reason for donors to donate regularly?

18. What is the single major reason for donors not donating more than once?

19.What suggestions do you make to overcome the shortfall in the availability of blood ?

20. How do you purpose to achieve the objective of 100% voluntary donation in the blood bank?

21. An other suggestion you think can increase voluntary donation ?

ANNEXURES-XIV

QUESTIONNAIRE FOR THE TECHNICIAN STATE BLOOD BANK SHIMLA

Questionnaire for the study of factors related to blood donor dropout/retention, State Blood Bank Shimla, Himachal Pradesh 2008.

ID No. No _____. Date _____

Namaskar, my name is Dr. Omesh Bharti. Working in the state blood bank D.D.U. Hospital, Shimla. I would like to discuss some of the facts regarding your blood donation which would help us improve the blood bank services in the area. I would appreciate if you could spare some time to answer my questions. Your responses will be treated as confidential.

Identification Particulars:-

Respondent Name:

Age _____

Sex _____

Interviewer Code _____

Qualification:_____

Phone no._____

Address_____

Training Particulars:-

1. Since how long are you in the blood bank?
2. Have you been trained in the blood banking, yes/no?
If yes:
 - 2(a): Where were you trained?
 - 2(b): Who trained you?
 - 2(c): What was the duration of the training?

Blood bank related knowledge:-

3. What do think about the facilities available in the blood bank?

4. Are these adequate or need some improvement? Please tell in detail?

5. Do you think the number of voluntary donors are enough to meet the demand? yes/no.

6. If no, what do you think should be done to enroll more voluntary donors?

7. Have you faced with the adverse donor reaction?

8.If yes, do you feel that donors was satisfied with the treatment given, if no what else do you think should have been done?

9. What do you think are the reasons for donors not giving blood more than once?

10. What do you think as reason for donors who give blood regularly?

11. Do you get enough support for giving blood in night hours?

12. If no, what type of support would you expect?

13.Do you feel that some if you get more support from the authorities then you would be able to more and more patients get blood and give better services to the donors? Please explain.

15.What do you think are the reasons that majority donors do not return to give blood again?

16. In your opinion what is the major single reason for donors to donate regularly?

18. What is the single major reason for donors not donating more than once?

19.What suggestions do you make to overcome the shortfall in availability of blood ?

20. How do you think the blood transfusion services can be improved to enable you help patients/donors better?

21. An other suggestion you think can increase voluntary donation ?

ANNEXURES-XV

QUESTIONNAIRE FOR THE CO-ORDINATOR NGO, STATE BLOOD BANK SHIMLA

Questionnaire for the study of factors related to blood donor dropout/retention, State Blood Bank Shimla, Himachal Pradesh 2008.

ID No. No _____ **Date** _____

Namaskar, my name is Dr. Omesh Bharti. Working in the state blood bank D.D.U. Hospital, Shimla.. I would like to discuss some of the facts regarding your blood donation which would help us improve the blood bank services in the area. I would appreciate if you could spare some time to answer my questions. Your responses will be treated as confidential.

1. Identification Particulars:-

Respondent Name:

Age _____

Sex _____

Interviewer Code _____

Qualification: _____

Phoneno. _____

Address

Regarding organizing the donation camps:-

1. Since how long you are organizing the blood donation camps(yr)?
2. How many camps you organize in a year?
3. What is the average number of donors donating in each camp?
4. What facilities are given by the blood bank to you to organize the camp?

5. What facilities are given by the administration to organize the camp?

6. What is the contribution of the community in organization of the camp?

7. What is the role of community in mobilization of donors?

8. What are the difficulty in organizing the blood donation camps?

9. What suggestions do you have to overcome these difficulties?

10. If given a chance would you like to hold the camp in the blood bank, why? reasons.

Volunteer related:

11. What do think are the major hurdles to mobilize the volunteers for donation?

12. What is the reason that some donors donate regularly, each year?

13. How many such donors your organization have?

14. Do you get requests for blood in odd hours?

15. What do you do to fulfill this demand?

100

16. What is the motivation to organize the camps?

17. what is the reason that some do not donate again?

—
—

18. Have you ever considered the option of donating blood in the blood bank regularly rather than in camps and why?

19. What do you think can overcome the persistent shortage of blood in Shimla ?

20. Any other suggestion you would like to make?

ANNEXURES-XVI

Summary of Results:

List of Factors found to be significantly associated with drop out donor in our study are:

- 1. Age < 25 years.**
- 2. Education <= Graduation.**
- 3. Distance of blood bank > 10 K.M.**
- 4. Knowledge related factors:**
 - less opportunity to know about blood donation.
 - less Knowledge about the age one can donate blood.
 - Opinion that blood donation is not beneficial to the donor.
 - They wanting to know more about blood donation.
- 5. More than one year delay between eligible age to donate and first donated blood.**
- 6. Bad experience (donor reaction), while donating for the first time**
- 7. less drop out donors ever called by the blood bank to donate.**
- 8. If called , less of them donated blood.**
- 9. less no. of drop out donors were given blood preferably as a donor when required .**
- 10. There was preference to donate to individual patients by majority of the donors compared to other preferences.**

Annexure XVII: Tables A: Demographic Profile of Donors:

Table1: Distribution (%) of donor by Age characteristics, Shimla, Himachal Pradesh, India 2008

Age group	Frequency	Percent
1 < 25 years	50	31.3%
2 26-34 yrs	54	33.8%
3 35- 49 yrs	49	30.6%
4 50 + yrs	7	4.4%
Total	160	100.0%

Middle age donors constituted 65% of the donorbase.

Table2: Distribution (%) of donor by sex characteristics, Shimla, Himachal Pradesh, India 2008

Sex	Frequency	Percent
Male	124	77.5%
Female	36	22.5%
Total	160	100.0%

78% of the donors under study were males.

Table3: Distribution (%) of donor by Religion, characteristics, Shimla, Himachal Pradesh, India 2008.

Religion	Frequency	Percent
1 Hindu	148	92.5%
2 Buddhist	1	0.6%
3 Christian	1	0.6%
5 Sikh/ others	10	6.3%
Total	160	100.0%

93% of the study population consisted of Hindus.

Table4: Distribution (%) of donor by Caste, characteristics, Shimla, Himachal Pradesh, India 2008.

Caste	Frequency	Percent
1 General	140	87.5%
2 SC	6	3.8%
3 ST	3	1.9%
4 OBC	3	1.9%
9 Sikh/Others	8	5.0%
Total	160	100.0%

88% of the study population consisted of General cast.

Table 5: (%) Distribution of donor by Education, characteristics, Shimla, Himachal Pradesh, India 2008.

Donor type	Upto12th (Undergraduate)	13-15 (Graduate)	16onwards (Post-graduate)
Regular (n=80)	9 (11%)	26 (33%)	45 (56%)
Dropout (n=80)	18 (23%)	31 (38%)	31 (39%)

85% of donor base consisted of graduates or post-graduates.

Table 6: (%) Distribution of donor by income, characteristics, Shimla, Himachal Pradesh, India 2008.

Donor type	Income not disclosed	Upto. Rs. 5000	5001-10000	10000 onwards
Regular (n=80)	20 (25%)	11 (14%)	16 (20%)	32 (40%)
Dropout (n=80)	29 (36%)	14 (18%)	8 (10%)	29 (37%)

30% of the donors did not disclose their income but 54% of them are middle or high socioeconomic group.

Annexure XVII.B: Cross tables and Tables showing statistical significance:

Table 8: Age as a factor for drop out donor.

Age in Years	Regular n=80	Dropout n=80	
<25	16 (20%)	34 (42.5%)	50 (31%)
25-34	29 (36%)	25 (31.5%)	54 (34%)
35-44	28 (35%)	21 (26%)	49 (30%)
= or >45	7 (9%)	0 (0%)	7 (5%)
Total	80 (100%)	80 (100%)	160 (100%)

$\chi^2 = 14.8, Df = 3, P = 0.002$ (significant)

Table 9. Education as a factor in drop out donor:

Education	Regular n=80	Dropout n=80	Total
Graduate (upto 15 years education)	35 (43.7%)	49 (61%)	84 (52.5%)
16 + onwards (Post-graduate)	45 (56.3%)	31 (39%)	76 (47.5%)
Total	80 (100%)	80 (100%)	160 (100%)

$\chi^2 = 4.9, Df = 1, P = 0.02$ (significant).

Table 10: Delay from eligible age and age of first blood donation V/S Drop out:

Delay from eligible age to age of first blood donation			
Delay	Regular (n=80)	Dropout (n=80)	Total
0 to <1 years	28 (35%)	16 (20%)	44 (27.5%)
1+ years	52 (65%)	64 (80%)	116 (72.5%)
Total	80 (100%)	80 (100%)	160 (100%)

$\chi^2 = 4.5, p=0.03$, significant.

Table 11.Distance in (kilometer) from blood bank as a factor for drop out:

Distance from blood bank by Donor type			
Kilometers	Regular (n=80)	Dropout (n=80)	Total
0-10 K.M.	68 (85%)	52 (65%)	120 (75%)
11-20 K.M.	6 (7.5%)	11 (14%)	17 (11%)
>20 K.M.	6 (7.5%)	17 (21%)	23(14%)
Total	80 (100%)	80 (100%)	160 (100%)

$\chi^2 = 8.8$, Df= 2, P = 0.01 (significant)

Table 12.1: Opportunity to know about blood donation as a factor for drop out:

Opportunity To know by Donor type			
Knowledge about blood donation	Regular (n=80)	Dropout (n=80)	Total
Yes	74 (92.5%)	56 (70%)	130(81%)
No	6 (7.5%)	24 (30%)	30(19%)
Total	80 (100%)	80 (100%)	160 (100%)

$\chi^2 = 13.3$, df=1, P = 0.0002

Table 12.2: Knowledge about the age one can donate blood.

Knowledge about age one can donate by Donor type			
Knowledge about age of donation	Donor type		
	Regular (n=80)	Dropout (n=80)	Total
Yes	70 (87.5%)	49 (61%)	119(74.5%)
No	10 (12.5%)	31 (39%)	41 (25.5%)
Total	80(100%)	80(100%)	160(100%)

$\chi^2 = 14.4$, df=1, P = 0.0001

Table 12.3: Opinion if blood donation is beneficial to the donor.

11.5: Opinion if blood donation is beneficial to the donor			
	Regular (n=80)	Dropout (n=80)	Total
Yes	63 (79%)	55 (69%)	118(73.5%)
No	8 (10%)	21 (26%)	30 (18.5%)
Can not say	9 (11%)	4 (5%)	13 (8%)
Total	80 (100%)	80 (100%)	160 (100%)

$$\chi^2 = 8.2, \text{DF}=1, P = 0.01$$

Table 12.4: Anything else you want to know of blood donation.

11.6: Anything else you want to know of blood donation			
	Regular (n=80)	Dropout (n=80)	Total
Yes	27 (34%)	44 (55%)	71(44.5%)
No	50 (62%)	34 (42.5%)	84 (52.5%)
No response	3 (4%)	2 (2.5%)	5 (3%)
Total	80 (100%)	80 (100%)	160 (100%)

$$\chi^2 = 7.3, \text{Df}=2, P = 0.02$$

Table 13. Experience while donating first time:

Experience while donating first time:			
Experience	Regular n=80	Dropout n=80	Total
Good/ comfortable	63 (79%)	55 (69%)	118 (74%)
Donor reaction (Fainting/ weakness/choking)	0 (0%)	9 (11%)	9 (5.5%)
Apprehensive but later OK	13 (16%)	13 (16%)	26(16%)
Fear of pain and weakness	4 (5%)	3 (4%)	7 (4.5%)
Total	80 (100%)	80 (100%)	160(100%)

Yates corrected $\chi^2 = 7.83$, Fisher exact 1 tailed p= 0.001.

Table 14. Were you ever called to donate.

Were ever called to donate			
	Regular (n=80)	Dropout (n=80)	Total
Yes	55 (69%)	31 (39%)	86 (54%)
No	25 (31%)	49 (61%)	74 (46%)
Total	80 (100%)	80 (100%)	160 (100%)

$\chi^2 = 14.4, df=1, p= 0.0001$, significant

Table 15. If called, did you donate blood. (responses analysed of the donors who said yes they were called)

If called, did you donate blood.			
	Regular n=55	Dropout n=31	Total
Yes	48 (87%)	21 (68%)	69 (86%)
No	7 (13%)	10 (32%)	17 (14%)
Total	55 (100%)	31 (100%)	86 (100%)

$\chi^2 = 4.77, df=1, p= 0.03$

Table 16. Were you given blood preferably as a donor.(responses are from those who require blood (n=65)

Were you given blood preferably as a donor.			
	Regular	Dropout	Total
	N= 36	N= 29	N=65
Yes	31 (86%)	15 (52%)	46 (70%)
No	5 (14%)	14 (48%)	19 (30%)
Total	36 (100%)	29 (100%)	65 (100%)

$\chi^2 = 9.1, df=1, P = 0.002$

Annexure XVII.C: tables showing factors that were important but not significantly associated with drop out of voluntary donor:

Table 17: Preference for donation.

Camps as preference for donation.			
	Regular (n=80)	Dropout (n=80)	Total
Camps	14 (17.5%)	6 (7.5%)	20(13%)
Other options	66 (82.5%)	74 (92.5%)	140 (87%)
Total	80 (100%)	80 (100%)	160(100%)

$\chi^2 = 3.66$, df=1, P =0.055, not significant.

Table 18. Preference for donation.

Individual patients as preference for donation.			
Individual patients		Total	
Dropout	Regular (n=80)	Dropout (n=80)	
Individual patient	61 (76%)	60 (75%)	121(75.5%)
Other options	39 (24%)	40 (25%)	45 (24.5%)
Total	80 (100%)	80 (100%)	160(100%)

$\chi^2 = 0.02$, df=1,, p =0.88

Table19: Income of the donors as factor for drop out donor:

Income in Rs.	Regular n=80	Dropout n=80	Total
Income not disclosed	20 (25%)	29 (36.3%)	49(30.6%)
10-5000	11(13.8%)	14(17.5%)	25(15.6%)
5001-10000	16(20%)	8(10%)	24(15%)
10000 onwards	33(41.3%)	29(36.3%)	62(38.8%)

$\chi^2 = 4.82$. Df= 3, P = >0.05.(not significant)

Table20: Persons in the household as a factor for droop out:

Persons	Regular n=80	Dropout n=80	Total
0-5 Persons	56(70%)	55(68.8%)	111(69.4%)
6-10 Persons	19(23.8%)	21(26.3%)	40 (25%)
11 + Persons	5(6.3%)	4(5%)	9 (5.6%)

$\chi^2 = 0.2$, Df= 2,P = >0.05 (not significant)

Table 21. Age heard about blood donation:

Age in Years	Regular (n=80)	Dropout (n=80)	
0-18	48(60%)	48(60%)	96(60%)
19-25	26(32.5%)	26(32.5%)	52(32.5%)
26-35	5(6.3%)	6(7.5%)	11(6.9%)
>35	1(1.3%)	0(0%)	1(0.6%)

$\chi^2 = 1$, Df= 3,P = >0.05 (not significant)

Table 22. No. of family members donating blood:

Family members donating blood	Regular (n=80)	Dropout (n=80)	Total
Family members donating	61(76.3%)	57(71.3%)	118(73.8%)
Not donating	19(23.8%)	23(28.8%)	42(26.3%)

$\chi^2 = 0.52$, P = 0.47 (not significant)

Table 23. : How does distance of blood bank affects you.

	Regular (n=80)	Dropout (n=80)	Total
Yes	7(8.8%)	11(13.8%)	18 (11.3%)
No	23(28.8%)	29(36.3%)	52 (32.5%)
Can not say	50(62.5%)	40(50%)	90(56.3%)

$\chi^2 = 2.7$, df=2,P = >0.05 (not significant)

Table 24. Time spent for donation in the blood bank in minutes:

	Regular (n=80)	Dropout (n=80)	Total
< 2 hours	70(87.5%)	65(81.3%)	135 (84.4%)
2-3 hours	2(2.5%)	1(1.3%)	3 (1.9%)
> 3 hours	8(10%)	14(17.5%)	22 (13.8%)

$\chi^2 = 2.1$, Df= 2, P = >0.05 (not significant)

Table 25. Money spent for donation in the blood bank in minutes:

	Regular (n=80)	Dropout (n=80)	
Rs.0-100	74(92.5%)	72(90%)	146 (91.3%)
Rs.101-200	4 (5%)	7 (8.8%)	11 (6.9%)
Rs.201 onwards	2 (2.5%)	1 (1.3%)	3 (1.9%)

Mean expenditure to donate is Rupees 40/- and median expenditure by a voluntary donor to donate was Rupees 10/- (0-500).

$\chi^2 = 1.1$, Df= 2, P = >0.05

Table 26: knowledge of the purpose for which blood is used:

	Regular (n=80)	Dropout (n=80)	Total
Yes	74(92.5%)	75(93.8%)	149 (93%)
No	6(7.5%)	5(6.3%)	11 (7%)

$\chi^2 = 1$, df=1, P = >0.05

Table 27: Opinion if blood donation causes any harm to the body.

	Regular (n=80)	Dropout (n=80)	Total
Yes	3(3.8%)	6(7.5%)	9 (5.6%)
No	75(93.8%)	72(90%)	147 (92%)
Can not say	2(2.5%)	2(2.5%)	4 (2.5%)

$\chi^2 = 1$, df=1, P = >0.05

Table 28: knowledge of the blood group :

	Regular (n=80)	Dropout (n=80)	Total
Yes	80(100%)	76(2.5%)	156 (97.5%)
No	0(0%)	4(5%)	4(2.5%)

$\chi^2 = 4.1$, Fisher Exact 1 tailed $p = 0.06$

Table 29: Opinion if donated blood is restored or not.

Dropout	Regular (n=80)	Dropout (n=80)	Total
Yes	67(83.8%)	71(88.8%)	138 (86.3%)
No	5(6.3%)	7(8.8%)	12 (7.5%)
Can not say	8(10%)	2(2.5%)	12 (6.3%)

$\chi^2 = 4.$, Df=2, P = >0.05.

Table 30.Were you deferred by the blood bank staff:

	Regular (n=80)	Dropout (n=80)	Total
Yes	5(6.3%)	5(6.3%)	10 (6.3%)
No	70(87.5%)	71(88.8%)	141 (88%)
Do not remember	5(6.3%)	4(5%)	9 (5.6%)

$\chi^2 = 0.1$, df=1, P = 0.9

Table 31.If not called, then would you have donated if called by the blood bank.

	Regular n=25	Dropout n=49	Total
Yes	22(27.5%)	36(45%)	58 (36.3%)
No	3(3.8%)	13(16.3%)	16 (10%)

$\chi^2 = 2.06$, df=1, P = 0.15, not significant.

Table 32.Did you require blood for yourself or your family:

	Donor type		
	Regular (n=80)	Dropout (n=80)	Total
Yes	36(45%)	29(36.3%)	65 (40.6%)
No	44(55%)	51(63.8%)	95 (59.4%)

$$\chi^2 = 1.2, \text{ df}=1, P = >0.05$$

Table 33. Do you or your relatives and friends have some fears about donation.

	Regular (n=80)	Dropout (n=80)	Total
Yes	35(44%)	41(51%)	76 (47.5%)
No	40 (50%)	34(42.5%)	74 (46.3%)
Can not say	5(6.3%)	5(6.3%)	10 (6.3%)

$$\chi^2 = 0.96, \text{ df}=2, P = >0.05$$

Table 34. Continue to donate blood in future.

	Regular (n=80)	Dropout (n=80)	Total
Yes	79(99%)	75(94%)	154 (96.3%)
No	1(1%)	5(6.3%)	6 (3.7%)

$$\chi^2 = 3.1, P = >0.05$$

Table 35; Preference for donation.

	Regular (n=80)	Dropout (n=80)	Total
Blood bank	6(7.5%)	12(15%)	18 (12%)
Other options	74(92.5%)	68 (85%)	142 (88%)

$$\chi^2 = 2.25, \text{ df}=1, P = 0.13$$

Table 36. Behaviour of blood bank staff:

	Regular (n=80)	Dropout (n=80)	Total
Cordial and Sympathetic	56 (70%)	64(80%)	120 (75%)
Indifferent	18(22.5%)	11(13.8%)	29 (18%)
Hostile	6(7.5%)	5(6.3%)	11 (7%)

25% of the donors said that behaviour of the blood bank staff was indifferent or hostile.

$$\chi^2 = 2.3, Df=2, P = 0.32$$

Table 37: Sex as a factor for drop out donor.

Sex as a factor for drop out donor			
	Regular (n=80)	Dropout (n=80)	Total
Male	67 (84%)	57 (71%)	124 (77.5%)
Female	13 (16%)	23 (29%)	36 (22.5%)
Total	80 (100%)	80 (100%)	160 (100%)

$$\chi^2 = 3.5; Df=1, p = 0.05 \text{ (significant)}$$

Annexure XVII.D: tables with a Qualitative analysis:

Table 38. Fears regarding blood donation:

Age in Years	Regular n=80	Dropout n=80	Total
No fear	47 (59%)	41 (51%)	88 (55%)
Fear of Weakness	23 (29%)	27 (34%)	50 (31%)
Fear of needle/Prick	6 (7.5%)	7 (8.5%)	13 (8%)
Fear of unsafe donation process	3 (4%)	2 (2.5%)	5 (3.5%)
Wastage of blood or blood not given to needy	1 (1%)	3 (4%)	4 (2.5%)
Total	80 (100%)	80 (100%)	160 (100%)

$$\chi^2 = 2.01, Df=4, P = 0.74$$

45% of the total donors have some fear or the other like fear of weakness (31%), fear of needle or prick (8%) , fear of unsafe process (3.5%) and wastage of blood or misutilization of blood (2.5%); all these fears are more in dropout donors than in regular donors.

Table 39. What are your expectations from the blood bank

Expectations from the blood bank	Regular n=80	Dropout n=80	Total
No Expectations	20(25%)	25 (31.3%)	45 (28.1%)
Good behaviour of staff so that donor could share his apprehensions	27 (33.8%)	26 (32.5%)	53 (33.1%)
Blood be not wasted and given to poor	16 (20%)	12 (15%)	28 (17.5%)
Hygiene and aseptic procedure	7 (8.8%)	4 (5%)	11 (6.9%)
I should get blood in need	4 (5%)	6 (7.5%)	10 (6.3%)
Make donor comfortable	2 (2.5%)	0 (0%)	2 (1.3%)
Provide better refreshment	2 (2.5%)	0 (0%)	2 (1.3%)
Respect the donor	1 (1.3%)	5 (6.3%)	6 (3.8%)
Keep in touch with donor	1 (1.3%)	1 (1.3%)	2 (1.3%)
People in high offices should donate	0(0%)	1 (1.3%)	1 (0.6%)
Total	80(100%)	80(100%)	160(100%)

$$\chi^2 = 10, Df=9, P = 0.34$$

33% of total donors expect the bank staff to have a good behaviour with them and 18% of the total donors said hat blood should not be wasted and given to the poor. 7% wanted blood bank to maintain hygiene and asepsis so that donors are safe and 7% wanted the staff to arrange blood for them in case they require blood for themselves.

Table 40. What donor wanted to know of Blood donation out of those who wanted to know more about blood donation:

Anything more donor wanted to know	Regular n=27	Dropout n=44	Total n=71
Hb/Blood GP/Cross matching/ components	3 (12%)	5 (11.5%)	8 (11%)
More information/new technology on blood donation	10 (37%)	10 (22.5%)	20 (28%)
Benefits/ losses of donation	7 (26%)	13 (29.5%)	20 (28%)
Test results of donated blood	1 (4%)	2 (4.5%)	3 (4.5%)
How many times blood can be given safely	2 (7%)	1 (2.5%)	3 (4.5%)
Any other	4 (14%)	13 (29.5%)	17 (24%)
Total	27 (100%)	44 (100%)	71 (100%)

$$\chi^2 = 3.88, Df=5, P = 0.57$$

28% of donors in each of regular and dropout category wanted to know about benefits and losses of blood donation as well as more information on new technology in blood donation. 11% of the total wanted to know about their group or Hb or cross matching process/ component therapy. 4.5% of each category wanted to know the test results of their donated blood and how many times they can donate.

Annexure XVIII: No assurance of blood if donor needs it in emergency and also this donor form absolves the blood bank of any consequence arising out of the process of donation putting fears in the mind of donors. Also there is no assurance of blood to the donor.

Name and address of the Blood Bank

License No. :

Blood Unit No. :

CONFIDENTIAL

[] Tick wherever applicable

Please answer the following questions correctly. This will help to protect you and the patient who receives your blood.

Name :	Male	Female
Date of Birth:	Age	Father's/Husband's Name :
Occupation	Organization:	
Address for communication:		
Telephone:	Mobile No. :	
Would you like us to call you on your mobile:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Fax No. (if any) : Email (if any):		
Have you donated previously:		<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, on how many occasions:		When last:
Your blood group:		Time of last meal:
Did you have any discomfort during/after donation? <input type="checkbox"/> Yes <input type="checkbox"/> No		

1. Do you feel well today? Yes No
2. Did you have something to eat in the last 4 hours? Yes No
3. Did you sleep well last night? Yes No
4. Have you any reason to believe that you may be infected: Yes
by either Hepatitis, Malaria, HIV/AIDS, and/or venereal disease? No
5. In the last 6 months have you had any history of the following:
 Unexplained weight loss
 Repeated Diarrhoea
 Swollen glands
 Continuous low-grade fever
6. In the last 6 months have you had any:-
 Tattooing
 Ear Piercing
 Dental Extraction
7. Do you suffer from or have suffered from any of the following diseases?
 Heart Disease Lung disease Kidney Disease
 Cancer/Malignant Disease Epilepsy
 Diabetes Tuberculosis
 Abnormal bleeding tendency Hepatitis B/C
 Allergic Disease Jaundice
 Sexually Trans. Diseases Malaria
 Typhoid (last 1 yr.) Fainting spells
- Are you taking or have taken any of these in the past 72 hours?
 Antibiotics Aspirin Alcohol
 Steroids Vaccinations
 Dog Bite/Rabies vaccine (1 yr.)
8. Is there any history of surgery or blood transfusion in the past 6 months?
 Major Surgery Minor Surgery Blood Transfusion
9. For women donors,
Are you pregnant Yes No
Have you had an abortion in the last 3 months Yes No
Do you have a child less than one year old? Yes No
Is the child still breast-feeding? Yes No
Are you having your periods today? Yes No

10. Would you like to be informed about any abnormal test result at the address furnished by you?

Yes No

11. Have you read and understood all the information presented and answered all the questions truthfully, as any incorrect statement or concealment may affect your health or may harm the recipient.

Yes No

I understand that

- (a) blood donation is a totally voluntary act and no inducement or remuneration has been offered
- (b) donation of blood/components is a medical procedure and that by donating voluntarily, I accept the risk associated with this procedure.
- (c) my blood will be tested for Hepatitis B, Hepatitis C, Malaria parasite, HIV/AIDS and venereal diseases in addition to any other screening tests required to ensure blood safety

I prohibit any information provided by me or about my donation to be disclosed to any individual or government agency without my prior permission.

Date : _____ Time : _____ Donor's signature: _____

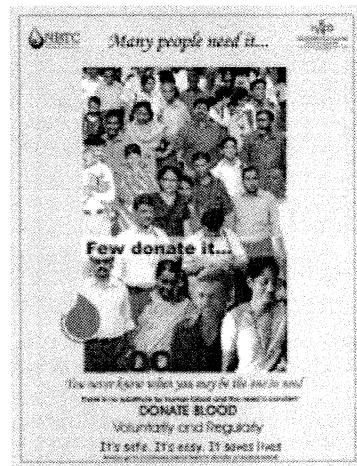
General Physical Examination:

Weight _____ Pulse _____ Hb _____
BP _____ Temperature _____
 Accept Defer Reason _____

Signature of Medical Officer : _____

Blood safety begins with a Healthy Donor

Annexure XIX: Some of the slogans on blood donation (IEC Material) mostly having altruistic appeal.



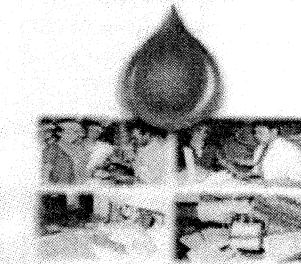
We are blood brothers,
one and all



Donate Blood
The Bond of love-The Gift of Life

Voluntary Blood Donation Day 1st October
Any 100ml of blood can save the life of up to 30 people.
Please to donate blood regularly.

You don't have to be a doctor
to save lives



Donate Blood
The bond of love-the gift of life

Voluntary Blood Donation Day 1st October
Any 100ml of blood can save the life of up to 30 people.
Please to donate blood regularly



Tough guys donate blood.



Smart girls donate blood.



Sensible people donate blood.

Billions of lives are saved by blood donated by voluntary donors. Give forward and
donate blood. Make a difference to the world around you by saving someone's life.
Voluntary Blood Donors are heroes worth saving the health of our country.

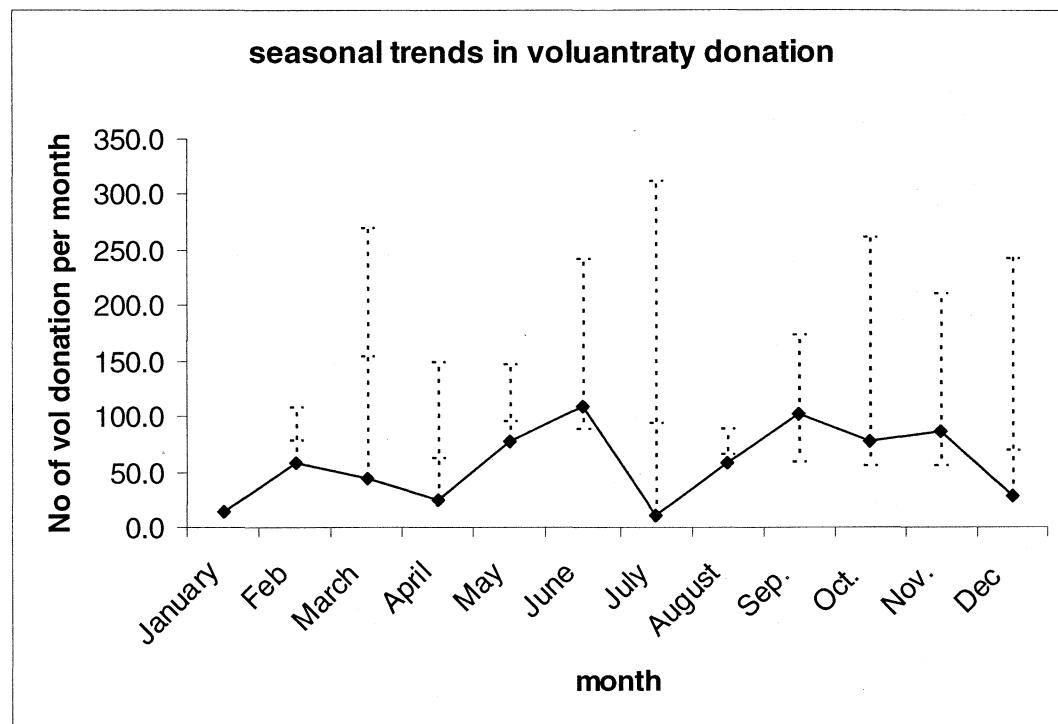


Posters on Voluntary Blood Donation

**TARGET FOR NACP-III ON VOLUNTARY BLOOD
DONATION**

Sl. No.	Name of the State/U.T	VBD		Blood Collection	
		% VBD in NACP-II	Target VBD in NACP-III	Existing Blood collection (Annual)	Blood collection targets for NACP-III
1	Andhra Pradesh	50.5	90	373105	662000
2	A&N Islands	74.4	100	3906	4000
3	Arunachal Pradesh	90.3	100	1486	4000
4	Assam	43.9	90	71178	166000
5	Bihar	22.8	90	47622	329000
6	Chandigarh	72.3	100	54138	9000
7	Chattisgarh	28.6	90	27945	208000
8	D & N Haveli	75	100	2218	2500
9	Daman & Diu	67	100	550	1500
10	Delhi	24	90	292348	400000
11	Goa	51.1	90	8276	13000
12	Gujarat	65	100	615499	620000
13	Haryana	31.3	90	125229	211000
14	Himachal Pradesh	63.3	100	15390	60000
15	Jammu & Kashmir	20.9	90	38778	101000
16	Jharkhand	25.5	90	60672	169000
17	Karnataka	51.7	90	356656	550000
18	Kerala	40.3	90	161036	317000
19	Lakshadweep	0.0	100	0	1000
20	Madhya Pradesh	40.9	90	174606	603000
21	Maharashtra	84.6	100	394868	968000
22	Manipur	7.9	90	14731	21000
23	Meghalaya	6.3	90	3174	23000
24	Mizoram	43.5	90	12241	15000
25	Nagaland	35.8	90	16720	15000
26	Orissa	55	90	156193	368000
27	Pondicherry	40.8	90	12823	15000
28	Punjab	15.1	90	203325	243000
29	Rajasthan	21.9	90	153120	465000
30	Sikkim	64	90	1218	5000
31	Tamilnadu	72.7	100	264616	624000
32	Tripura	68.8	100	17174	30000
33	Uttarakhand	24.8	90	311818	315000
34	Uttar Pradesh	13.5	90	29271	1661000
35	West Bengal	86.3	100	510465	801000
	TOTAL			4532395	10000000

**Annexure XXI: seasonal trends in blood donation, state blood bank Shimla
2005-07.**



There are seasonal trend in donation, blood shortage in Jan, April, July and December in Shimla town. We need to pre-plan for these months.

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