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Original Research Article

Assessment of donor return following temporary deferral in camp as well as in-house donors) in a blood bank attached to tertiary care hospital

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ABSTRACT

Background: In India, about 60% of donation is through voluntary blood donors. However, about one third already motivated blood donors are deferred due to stringent screening criteria, either temporarily or permanently. The temporarily deferred donors could be a good source of blood donation after deferral period. The objective of this study was to know the main causes of pre-donation deferral in potentially healthy prospective blood donors, to investigate impact of deferral on donation pattern and to evaluate impact of post deferral counseling on donation pattern.

Methods: The present study is carried out in A. D. Gorwala blood bank in Anand, Gujarat from April 2014 to September 2015. All donors screened as per the guideline and deferred donors are categorized as temporary and permanently deferred donors. A Comparison group of healthy eligible donors who donate blood at ADGBB is also studied to determine impact of deferral on donation pattern. From temporarily deferred donors, reason for deferral is considered. At the time of deferral, donors properly counseled, clearly informed about the reason of deferral and corrective actions are taken. As per reason of deferral, time duration for recalling the donor is defined. Based on this, donor is called back to donate again for up to six month's period after expiration of deferral period.

Results: Total 12.57% donors were deferred temporarily. Significant female preponderance was observed (58.7% vs 8.90%). Low hemoglobin (60.9%) was the most common reason of temporary deferral followed by abnormal BP and medicine ingestion. Total 378 donors were responded back out of 953 of deferred donors compare to 645 in non-deferred group. Middle age, male, repeat donors, in-house donors, high education, high socio-economic status, shorter duration of deferral appears to significantly predict donor return. In the evaluation of reasons of the re-deferral, Low hemoglobin was the prime reason. Unfavourable location, lack of time and change in job/college are major barrier to donor return. Total 39.60% response observed after post deferral counseling in present study compared to 11.20% in year 2013-2014.

Conclusions: Efforts to increase the hemoglobin will improve the donor retention and overall blood safety can be increased. Temporary deferral has negative impact on donor return and duration of response after expiration of deferral, both in first time and repeat donors. Interventions to increase return behavior need to be better targeted at specific donor groups and it should be developed according to major barriers to donor return prevalent in particular region mainly through more effective communication with donors. Education, motivation, post deferral counseling.

Keywords: Donor return, Hemoglobin, Temporary deferral, Voluntary blood donor

INTRODUCTION

Human blood is the living force of our body. Even the ancient Egyptians believed in the life-giving properties of blood, and they used it for baths to resuscitate the sick, rejuvenate the old and as a tonic for the treatment of various disorders.[1,2] Blood transfusions has been responsible for saving millions of lives each year around the world. The use of whole blood is now a well-accepted and well-used measure in many major surgeries and emergency care of trauma patients. With advances of medical science, the need for blood transfusion has been increased for the patient to survive, recover and in some cases, maintain health. Thus, well designed building, equipment, instruments, manned by highly trained doctors, technologists, nurses, supported by modern computers and information technology may prove to be an incomplete supply chain if blood is not readily available in time of need of patient.[3]

Ensuring maintenance of stock with quality is of utmost importance in blood bank. However, mobilizing voluntary blood units is difficult job involving intensive campaign, motivation, and spending considerable resources on it. The government is promoting voluntary blood donation through media but we believe more information, education, and counseling promoting blood donation can be provided in hospital setup by appropriate utilization of human resources. There is a need to stress on the fact that blood donation is essentially risk-free in a healthy individual. A little more effort by the management can help us bring a great change. It will not only help us arrange stock of blood available to reduce moralities in casualties and emergencies, but also reduce donation by professional donors. We believe that real contribution of doctors to society lies not only in treating people, but also spreading awareness and clearing their misconceptions. Physicians are not just healers, but before anything else they are teachers.

Hence, this study will be conducted to identify the main causes of predonation deferral, a variety of medical reasons and misconception for them, how to reduce deferral to a minimum, find out efficacy of retrieving voluntary donor from deferred donor pool, to fulfill the gap of donation and requirement by motivating already motivated but temporarily deferred donors without compromising on the quality of the blood and safety to the recipient and the return donation pattern after deferral. Another very important reason to carry out this study is to avoid any psychological effect or negative impact of deferral on the prospective donors which may prevent them from future donations by post deferral counseling.

METHODS

This is a prospective study of 953 cases of temporary deferred donors in outdoor blood donation camp as well as in in-house donors carried out at A. D. Gorwala blood bank of Shree Krishna Hospital (SKH), a rural tertiary care hospital in Anand district of Gujarat state. The study period consisted of one and half years from April 2014 to September 2015. The donors who were not suitable standard operating procedure (SOP) criteria, NABH and National Blood deferred donor or temporary deferred to donate blood at that time, according to the based on the food and drug administration policy were deferred.[4-7]

Pre-donation temporary deferrals were coded and divided into categories covering all main causes of donor rejection and depending on the reasons of deferral; the deferral period was defined for the donor to come back for blood donation.

An individual ineligibility period was calculated for each donor based on the date of the deferral and the date when the deferral lapses. Donors were called back, motivated for donation every month by telephonic counseling and passively followed for the date of return to the blood center up until six months after the expiration of the deferral period.

The deferral is not a permanent cause and they can donate blood after expiration of deferral period. The donor counseled about the importance of blood donation and their contributions are really important. For donors who were deferred in camp, ADGBB arranged motivation programme in which power point lecture delivered by blood bank officer or residents and also IEC materials given to aware them about blood donation and its importance.

Donor follow up

Temporarily deferred donors tracked every day by asking past deferral details to every donor, who came to blood bank as well as in outdoor camps for blood donation, by maintaining a register and regular follow up of temporarily deferred donor register and donor's data who donated blood at blood bank. All donors who did not return up to 6 months after expiration of deferral period were not called again. If donors do not come forward for donation again, a telephonic interview was taken to evaluate the reason of not coming back.

RESULTS

A total of 7578 potential blood donors came to donate blood during the study period. A total 6591 donors voluntarily donated whole blood at A.D. Gorwala blood bank or various sessions of blood donation camps. Total 987 donors (13.02%) were deferred because of various categories of predonation deferral. Out of which, 34 (3.44%) were deferred permanently and 953(96.55%) were deferred temporarily depending on the reason of deferral.

Out of 953 temporarily deferred donors, 451 (47.3%) donors were deferred from in-house donors and rest 502 (52.6%) were differed in outdoor blood collection drives.

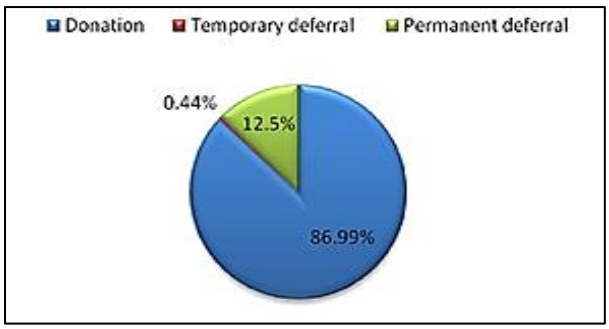

Figure 1: 5.1 Deferral rate in ADGBB.

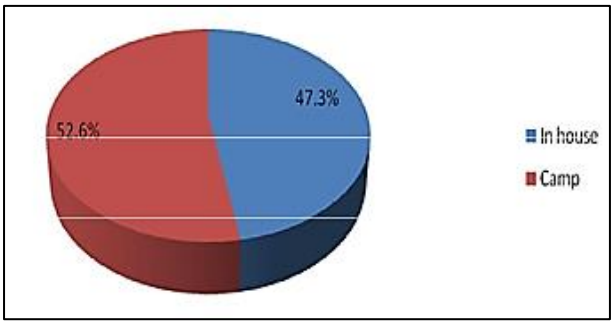

Figure 2: Deferral rate in camp and in-house donors.

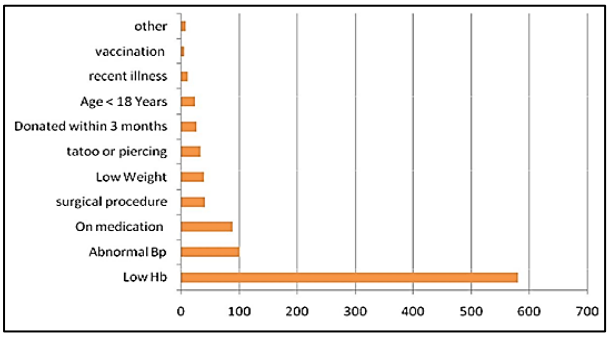

Figure 3: Deferral pattern of temporary causes of ADGBB.

Table 1: Deferral rate in camp and in-house donors.

Deferral causes	Frequency	Percent
Age < 18 years	23	2.4
Low Hb	580	60.9
Low weight	39	4.1
Abnormal BP	100	10.4
Donated within 3 months	26	2.7
On medication	88	9.23
Recent illness	11	1.2
Tattoo or piercing	33	3.5
Minor surgery	17	1.8
Major surgery	18	1.9
Dental surgery	6	0.6
Vaccination	5	0.5
Other	7	0.7
Total	953	100.0

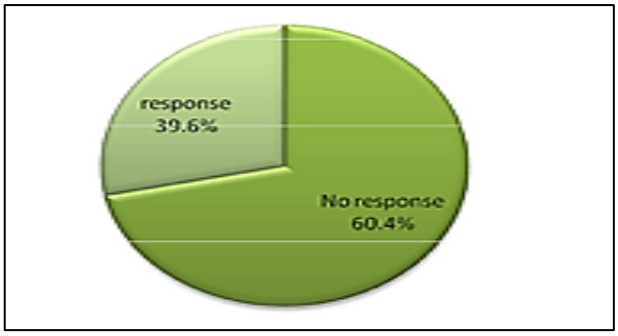

Figure 4: Response rate to donate blood after temporary deferral.

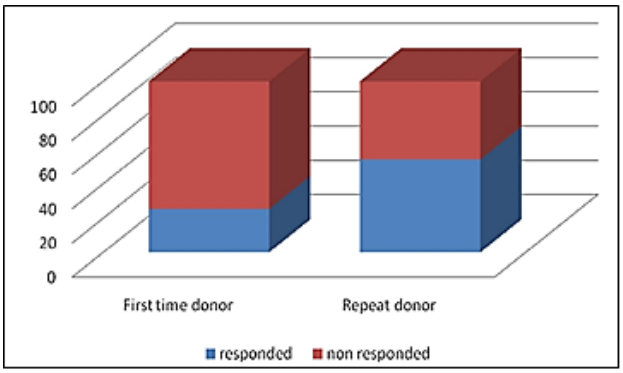

Figure 5: Response after deferral.

Table 2: Donation status wise response rate.

Response		First time	Repeat	Total
Responded	122	(25.3%)	256 (54.35%)	378
Not responded	360	(74.7%)	215 (45.65%)	575
Total	482		471	953

Salient findings in present study are as follows

Total of 7578 potential blood donors were included in the study who came to donate blood during the study period. Total 6591 donors voluntarily donated blood at A.D. Gorwala blood bank and various sessions of outdoor blood donation camps. Total 987 donors (13.02%) were deferred because of various categories of pre-donation deferral. Out of which, 34 (3.44%) were deferred permanently and 953(96.55%) were deferred temporarily depending on the reason of deferral.

The most common reasons for deferral are low hemoglobin (60.9%), abnormal blood pressure (10.4%), and history of antibiotic/medication use (9.23%). The deferral in female blood donors is higher as compared to male donors. Out of 953 of deferred donors, a total of 378 (39.6%) donors were responded back and 293 (30.74%) donors donated successfully after the expiration of deferral and after post deferral counseling. The 85 donors deferred again due to various reasons. The major cause for being deferred again was low haemoglobin level.

Middle age, male, repeat donors, in-house donors, high education, high socio-economic status, shorter duration of deferral appears to significantly predict donor return. These findings signal that interventions aimed at increasing return behavior need to be better targeted at specific donor groups.

A "one size fits all" approach does not seem feasible. Temporary deferral has negative impact on donor return as well as duration of response after expiration of deferral period, both in first time and repeat donors. Repeat donors were more receptive for blood donation after completion of deferral period and they responded promptly. The repeat donors are well motivated and they are more willing to donate blood regularly. Education, motivation, post deferral counseling and treatment of these deferred donors due to anemia or other temporary deferrals are important to save the voluntary donor pool. Thus, effective measures need to be initiated to find out the issue of lost donors in terms of numbers and reasons.

DISCUSSION

In the present study, various causes of temporary deferral along with impact of deferral in donation pattern and various factors associated with return of temporarily deferred donors studied with an aim to review our recruitment and retention strategy from April 2014 to September 2015. The most common reason for deferral in our whole blood donor population was low haemoglobin and nearly 60.9% of total deferrals were because of this.

As anemia is very prevalent in a developing country like India7 mainly due to poor nutrition and ill health, this is a significant cause for deferrals among donors who come forward enthusiastically for donation, but are unable to donate. The second and third most common reasons for deferral found in present study were abnormal blood pressure (almost all due to high B.P.) and donor on medication warranting deferral, respectively.

Also, medication was the third most common cause of deferral (9.23%). Total 8.90% male and 58.7% females were deferred temporarily. Out of total temporarily deferred donors, males were 65.26% and females were 34.7%. The low haemoglobin in women was the major cause for temporary deferral which can be explained by female donors being more prone to anemia and iron depletion as reflected by low haemoglobin values.[9] Reasons for this anemia include menstrual blood loss, poor nutrition, and tropical disease.[6] Nearly 83% of total deferred female donors highlighting the prevailing anaemia. This should motivate for provision of dietary advice and iron supplementation to female donors because even blood donation has been reported to be a significant contributing cause of iron deficiency among blood donors that disproportionately affects female donors.[8]

In present study, low Hb was the most common deferral cause both in the first time and repeat donors.

Table 3: Comparison of studies for donation status wise deferral causes.

Repeat donors	First time donors
Low Hb (59.42%)	Low Hb (62.20%)
Abnormal BP (15.92%)	On medication (9.75%)

In the present study, 39.6% donors returned for blood donation after a defined period of temporary deferral and 67.68% non-deferred donors return after completion of 3 months of donation. There was remarkable difference in terms of return for blood donation both in first time and repeat donors.

Only, a total of 25.3% of first time donors returned to ADGBB compared to 54.35% repeat donors. Total 60.33% donors not responded to a retrieval call from blood centre; in first time donors 62.60% and in repeat donors 37.39% had not responded. Repeat donors were regularly coming in contact with Blood bank and they used to respond in cases of emergency also. As well as motivation level was also high in repeat donors as compared to first time donors. That may be the reason why more number of repeat donors responded to a retrieval call.

Fear of medical disqualification and fear of being deferred again was observed in 5-7% of not responded donors. Moving farther from the collection site also gave minor contribution to donor loss. Some minor percentage of donors would not like to come for donation due to no imminent need of blood component or no assurance of availability of blood in time of need for their family.

Results from the present study have implications for the daily practice of blood banks. In order to improve return behavior, blood banks should focus more on specific donor groups, such as younger donors, donors who have had a low return rate in previous years and donors who have been deferred once or more. In general, most deferred donors have the intention to give blood, but it might be that some donors do miss the urgency and priority in their life that makes them return to give a subsequent donation. Interventions aimed at increasing commitment to return to donate should be developed according to major barriers for donation prevalent in particular region mainly through more effective communication with donors. Along with donor motivation and retention strategies, we should also implement strategies to prevent voluntary donor loss and this may result in less negative impact of deferral in future.

Prevention strategies

One of the possibilities is creating commitment at the start of the donor career, for example, by formalising

"blood donorship" in the form of a "social contract". With this contract, a blood donor confirms and agrees with the blood bank policy. As a consequence, blood donors would be more aware of the expectations of the blood bank, which might enhance the urgency to donate blood.

Another option to improve return behaviour is to use "implementation intentions", previously mentioned by Ferguson et al and Wever A et al. Implementation intentions are "if-then" plans to facilitate the conversion of intentions into behaviour (e.g. donating blood) and have the following structure: "When it is situation X, I will perform Y".[9] The purpose of implementation intentions is that, when the specific situation arises, a person feels committed to act according to a well-defined plan to reach the goal behaviour. For the blood bank situation, donors can be asked to specify "where", "when" and "how" they will donate blood after an invitation to donate. For example, the blood bank can ask the donor to plan in his or her agenda a specific day and time to donate blood at the blood centre.

CONCLUSION

Out of 953 of deferred donors, a total of 378 (39.6%) donors were responded back and 293 (30.74%) donors donated successfully after the expiration of deferral and after post deferral counseling. The 85 donors deferred again due to various reasons. The major cause for being deferred again was low hemoglobin level.

Deferred donors can be considered somewhere in-between the chain of "an unsensitized donor-first time donor-regular donor" so far as recruitment strategies are concerned. They are better than uninitiated prospective donors but a little behind the regular repeat donors.

Also, they are aware of the donation process and have at least once shown the willingness to donate. Interventions to increase return behavior need to be better targeted at specific donor groups and it should be developed according to major barriers to donor return prevalent in particular region mainly through more effective communication with donors. Education, motivation, post deferral counseling and treatment of deferrals are important aspects in recruiting donor again.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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