

Impact of alternative strategies to improve the pool of blood donation by off-hour donation: A pilot study and its future prospects

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ABSTRACT

Background: The escalating need for blood component due to increasing accidents and surgeries are always challenging for blood banks and hospitals. In this fast and busy world, collecting blood from a healthy and voluntary donor is quite challenging due to time constraints. Many blood donors who wish to donate blood were unable to go to the blood bank because of simultaneous operational timings of the blood bank and office hours of the donors. We dealt with this concern by extending the donation hours and also started collecting blood on the weekends following LAARC (Listen, Acknowledge, Assess, Respond, Confirm) methodology as a pilot project for improving blood donor convenience and satisfaction at the blood bank. **Methodology:** It was a prospective observational pilot study conducted at the government tertiary care institute in the Department of Transfusion Medicine from December 2018 to June 2019. All blood donations were made as per the guidelines laid down by the Drug and Cosmetic Act. The donation timings were divided as office-hour donations (8 am to 5 pm on weekdays) and off-hours donations (5 pm to 8 pm, weekends and holidays). **Results:** In this pilot project, over 7 months out of a total of 1,591 donations, 664 donations (41.73%) were done during the off-hours. The donor experiences were pleasing, and they felt extra cared due to the convenient donation timings. **Conclusions:** Increasing the donation base needs more donor-friendly timings for the pleasant donation experience without hampering their work. More extensive studies should be conducted to include such strategies for increasing voluntary blood donation.

Keywords: Blood donation, LAARC (Listen, acknowledge, assess, respond, confirm)

Introduction

Day to day requirement of blood is escalating due to the increase in road traffic accidents and advancement of major surgeries which need blood as a core requirement. Blood donation and transfusion is a vital part of medicine in the treatment of hundreds of thousands of patients annually, and maintaining an

adequate blood supply is an ongoing challenge as blood and the derived blood products have a limited shelf life.^[1] To improve the donor base, many strategies are followed, including outdoor blood donation camps, donor and patient's attendant motivation at the blood donation centers. Still, sometimes, these strategies are not sufficient to cater to the need of the blood which keeps motivating transfusion specialist to develop newer and better strategies in this regard. This becomes more challenging in a newly set blood bank where the donors and patients' attendants are not certain and are unsure about the availability of blood component for their patients when the need arises. In our newly started tertiary care center blood bank, we addressed the donor feedbacks and responded to their concern by opening the blood

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bank donation area in off-hours and thereby extended donations beyond regular office working hours. We implemented the LAARC (listen, acknowledge, assess, respond, confirm) method as a pilot project for donor satisfaction and started evening donations, weekend donations, and holiday donations, including both in-house as well as outdoor blood donation camps. We analyzed our strategies to check their utility and effectiveness in improving the pool of blood donation and its cost-effectiveness.

Methodology

This was a pilot prospective observational study on increasing the blood donor pool and was conducted at the department of transfusion medicine and blood bank (DTMBB) in a newly established government tertiary care center in central India. The study was conducted for 7 months from December 2018 to June 2019. All the donations (in-house and outdoor camps) were conducted by the DTMBB. The data were collected for all blood donors and included donor demographics of age, sex, working status, and post-donation experience about the timing of blood donation in the blood banks. The time of donation was categorized as a routine donation and off-routine donation. The routine donation was defined as 8 am to 5 pm, and the off-routine donation timings were defined as donations in the evening hours 5 pm to 8 pm, on weekends and holidays. All the donations were done as per the guidelines laid by the Drugs and Cosmetics Act and the recent October 2017 National blood transfusion council (NBTC) guidelines have been followed all over India. The donor consent was taken as per the ethical guidelines of the Drugs and Cosmetics Act 1940. All the donors were further interviewed for a convenient timing of blood donation. Data were collected and organized using the Microsoft Excel application 2010. Data were analyzed by the Microsoft Excel version 2010. The duties of the existing staff, including technical staff and doctors, were rearranged in shifts to cater to this extended timing and no extra human resource was employed for this purpose.

Result

This prospective observational study was conducted at a government blood bank of a tertiary care center in central India over 7 months as a pilot project to evaluate the effectiveness of donation on off-hour timings. As shown in Table 1, the total donations during the study period were 1,591 out of which 1,526 (95.91%) were males, and 65 (4.09%) were female donors. During the routine hours, 887 (58.12%) males and 40 (61.53%) female donors donated blood while during off-hours, 639 (41.87%) males and 25 (38.46%) female donors donated blood. A majority of the donors were between the age group of 26 and 60 years, accounting for 889 (55.87%) donors out of which 32.36% were in the routine hours, and 23.50% were during the off-hours. Overall, the total working population observed in the study was 1,085 (68.19%) and the total working population observed during the routine hours was 628 (39.47%) and the total working population observed during the off-hours was 457 (28.72%) as shown in Table 2. Month-wise comparison and

distribution of donation, as shown in Figure 1, revealed an almost equal proportion of donation in the routine and off-routine hours with a rising trend of off-hour donation.

Discussion

Hospital services are expanding very rapidly, and therefore, the need to strengthen the core services within the hospital, which include transfusion services, becomes a necessity. This study was conducted at a newly established government tertiary care center having all super-specialty and handling major surgeries and trauma and obstetric emergencies. The blood bank in this setup has many challenges which need to be addressed. This government hospital setup caters mostly to the underprivileged and poor from periphery and remote areas of central India. The department receives increasing requests for blood and blood components, which can only be catered to by expanding the donor base in this hospital-attached blood bank. Further being in the inception phase, the numbers of voluntary blood donation

Table 1: Donor demographics

	Routine-Hour Donation	Off-Hour Donation	Total Donation
Age (Years)			
18-21	170	128	298
22-25	242	162	404
26-60	515	374	889
Sex			
Male	887	639	1526
Female	40	25	65

Table 2: Working status of donor with respect to donation timing

	Routine-Hour Donation	Off-Hour Donation	Total Donation
Working			
Male	609	452	1061
Female	19	5	24
Non-Working			
Male	278	187	465
Female	21	20	41

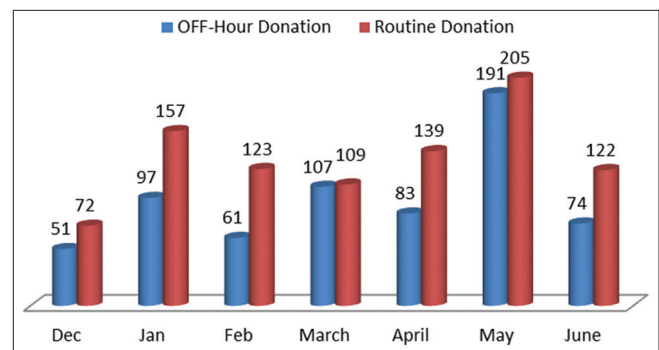


Figure 1: Month-wise comparative chart of routine and off-hour donation

campus are very less and very few voluntary organizations, and voluntary blood donors are aware of its functionality. Therefore, to fulfill the demands of safe blood to the needy patients, alternative strategies were developed to improve the donor pool.

Blood bank strategies to improve donor pool include mainly two strategies, both short-term and long-term, to overcome the shortage of blood supply. For the long-term supply of safe blood, educating young children in school and colleges regarding the need for blood and the importance of blood donation is needed, which further may be supported by conducting educational seminars, lectures, street plays, and dramas. Second, linking voluntary blood donor organizations in the local region to conduct voluntary blood donation camps at their premises or in-house to improve the pool of blood in the blood bank is required. The voluntary blood donor base can be improved by alleviating the donors of their doubts and fears of donating blood in the presence of their near and dear ones, family, and friends. This has both short-term and long-term impacts on blood donation. Similar categories of intervention have been documented (a) relatively sustained multifaceted, community-based interventions and (b) one-off information and educational video interventions, presented face-to-face or delivered via post or e-mail.^[2] Another study has concluded that it may also be useful for blood services to work with other governmental agencies, given the broader benefits of blood donation such as facilitating social inclusion.^[3]

The role of media and other government agencies is vital in increasing the awareness of the people about the need for blood in an emergency as well as by updating urgent blood requirement information in public platforms in different ways. We utilized this platform (FM Radio) to make donors aware of the urgent rare blood group requirements for our needy patients as well as about off-hour donations. Additionally, blood banks can have their management mechanism to improve blood donation by adjusting and rearranging duties of the doctors and staff to extract maximum work output for the betterment of the needy patients in the hospital. In our study, we could improve the donation base by 41.73% in off-hour donations as compared to routine-hour donations without adding any additional cost in terms of salary or increase in the workforce. We utilized the existing workforce of the blood bank to manage the extended hour's donation and rearranged the duties in shifts to cover these extended hours of donations, therefore, saving on a salary which would have increased with the employment of an extra workforce. We did not offer any incentives for the donors, including those donors who donated during off-hours. Other studies have indicated that offering money or cash-equivalent incentives may have a negative effect on blood safety and blood donor contribution and make donors consider blood banks as a nonaltruistic service.^[4]

Further following this strategy, we could collect additional 664 units of blood amounting to 41.73% of the total blood donation. These added extra blood units can be helpful for patients in need as the primary care physician can have more access to

blood donation timings and ease of availability of the blood. Another study by Richard Grieve *et al.*^[5] has concluded that extending opening hours for blood donation to weekday evenings or weekends for all static donor centers is a cost-effective way of increasing the supply of high-demand blood types.^[6] The availability of human resources and rearranging the duties of the staff to meet the staffing requirements during the extended hours of donation in the collection centers are parameters that can have significant impact on the system performance.^[7]

Donors were also interviewed during the donation counseling regarding the suitability of the timing of the donation for which they were all convinced for off-routine-hour donation, and it was pleasing for working group donors, and they felt cared as the timings were convenient for them.

Conclusions

Increasing the donation base needs more donor-friendly timings for a pleasant donation experience without hampering work. More extensive studies should be conducted to include such strategies for increasing voluntary blood donation. Work hour extension can be a further good approach in case of the current COVID-19 timings to handle the rush at the blood centers and maintaining social and physical distancing.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Ethics approval and consent to participate

Ethical waiver for retrospective data analysis from Institutional ethical committee was taken. As per the Drugs and cosmetic Act and departmental and institutional policy informed consent was taken from all the donors.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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