

A study on analysis of blood donation deferral during blood donation camp at tertiary-care teaching hospital in south Gujarat region

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Received December 27, 2015. Accepted January 8, 2016

Abstract

Background: Blood is lifesaving medicine for critically ill patients. Blood donations save many lives in the world. With that blood is very important for vitality of humans. So, in the blood donations, it is very important to maintain safety of donor and recipient. For that, donor selection is the most important criterion of blood donation.

Objective: To find out the reasons for deferrals of blood donors at volunteer blood donation camp.

Materials and Methods: This cross-sectional study was carried out at blood bank in GMERS Medical College, Valsad, Gujarat, India. In this study, investigator visited volunteer blood donation camps organized by blood bank during 1 month. Each donor was examined by the medical officer based on detailed medical history and brief physical examination as per the criteria laid down by Director General Health services and drugs controller of India. Data were presented as percentages, and analysis of data was done by using MS Excel.

Result: During the study period, a total of 161 volunteers were willing to donate blood. Of them, 132 (81.99%) were male and 29 (18.01%) female volunteers. Most of the volunteer blood donors belonged to 21–30 years of age group (37.89%). Among them, 161 volunteers for blood donation, 28 (17.39%) of them were rejected because of various reasons, and three (1.86%) persons did not donate blood. The most common reason for deferral in this study was history of jaundice (35.71%). Other causes were anemia, high blood pressure, and menorrhagia.

Conclusion: In this study, reasons for rejection of volunteer blood donors were studied. The most common reason of such rejection was history of jaundice. Other reasons were anemia, hypertension, heart disease, etc.

KEY WORDS: Volunteer blood donors, deferral blood donor, blood donor's selection criteria

Introduction

In 1937, Dr. Bernard Fantus at Chicago's Cook County Hospital coined the term "blood bank." Blood is lifesaving

medicine for critically ill patients. Blood donations save many lives in the world. With that blood is very important for vitality of humans. So, in the blood donation, it is very important to maintain safety of donor and recipient. For that, donor selection is the most important criterion of blood donation. Donor selection is defined as the process of assessing the suitability of an individual to donate blood or blood components against different selection criteria. Proper and accurate donor selection can avoid blood transfusion reaction also.^[1] The safety and availability of blood and blood products for transfusion requires the recruitment and selection of voluntary non-remunerated blood donors. The safest blood donors are voluntary nonremunerated blood donors from low-risk population.

Access this article online

Website: <http://www.ijmsph.com>

DOI: 10.5455/ijmsph.2016.27122015307

Quick Response Code:



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They are unpaid donors.^[2] Blood transfusion service should aim at eliminating the risks and hazards of blood transfusion. Donor quality is most important. Donors should be questioned about their medical history and should be given a mini-physical examination to help blood center staff decide whether they are suitable donors. The phlebotomy should be performed carefully to minimize any potential contamination of the unit.^[3] Many times, blood donors who want to give blood, but they are disqualified by blood donation criteria are called deferrals. Because these donors are rejected from blood donation, it will reduce their motivation and affect future blood donation by them. So, it is important to do time-to-time surveillance of the factors responsible for such deferrals.

In today's era, we are far behind in blood donations supply compared with demand. It is said that 1% blood donation is the minimal requirement for blood donation for country's requirement. So, by knowledge of factors responsible for deferrals, we can improve blood donor recruitment strategies.^[4]

So, this study was planned with the aim to find out the reasons for deferrals of blood donors at volunteer blood donation camp.

Materials and Methods

This cross-sectional study was carried out at blood bank in GMERS Medical College, Valsad, Gujarat, India. The study was started after prior permission of Institutional Human Ethics Committee. In this study, investigator visited volunteer blood donation camps organized by blood bank during 1 month. Each donor was examined by the medical officer based on detailed medical history and brief physical examination as per the criteria laid down by Director General Health services and drugs controller of India.^[5] Donor form was filled by appropriate designated blood bank staff. However, informed written consent for participation in this study was separately taken by the principal investigator, co-investigator, nurse, or counselor. Hemoglobin was estimated by copper sulphate solution method in voluntary blood donation camps. HBsAg, HIV, and HCV testing were done by ELIZA method. Data were presented as percentages, and analysis of data was done by using MS Excel.

Result

In this study, investigator had visited three blood donation camps during 1 month study duration. During the study period, a total of 161 volunteers were willing to donate blood. From them, 132 (81.99%) were male and 29 (18.01%) female volunteers. This shows more number of male volunteers were coming up for blood donations when compared with female volunteers [Figure 1].

Most of volunteer blood donors belonged to 21–30 years of age group (37.89%). From them, 69 (43%) were first-time donors, and the rest [92 (57%)] were repeat blood donors [Figure 2].

Among the 161 volunteers for blood donation, 28 (17.39%) were rejected because of various reasons, and three (1.86%)

persons did not donate blood. So, of 161 volunteers, 130 (80.75%) volunteers had donated blood. The most common reason for deferral in this study was history of jaundice (35.71%). Other causes were anemia, high blood pressure, and menorrhagia [Figure 3].

From these 130 volunteers, six donated blood bags did not have sufficient quantity of blood; and three bags were positive for various diseases, so discarded (one for HIV, one for malaria, and one for HBsAg). In this study, not a single blood bag was found hemolyzed. Of these 130 blood bags, 129 were sealed properly but one bag found leakage. Not a single blood bag was found with turbidity [Table 1].

In this study, the most common blood group found was O positive (38%), followed by B (32%), A (22%) and AB (8%) blood groups [Figure 4].

Discussion

Transfusion of blood and blood products is of utmost importance, where blood transfusion is done in emergency to save the life of patients. While blood donation is very much an essential requirement for time, still this blood donation process should not harm donor and with that maintain safety of recipient as well. Predonation selection of the donor is done for the safety of both donor and the recipient. Most important is the selection of blood donors by donor selection criteria. A large number of blood donors are not able to donate blood successfully for several reasons, either temporarily or permanently.^[1] In this study, various reasons for deferral from blood donation have been studied.

In this study, volunteer female donors were less than male volunteer donors. Similar findings were seen in studies by Sundar *et al.*,^[6] Bahadur *et al.*,^[7] and Mamatha *et al.*^[8] The probable reasons for such differences may be because of lack of knowledge or fear of blood donation in female donors. Another reason was that, in Indian female subjects, nutritional deficiency was more prevalent; so, they might get rejected because of donor selection criteria. Various studies showed that anemia is very prevalent in Indian female subjects and that can be reason for deferral from blood donations.^[9]

In this study, most of volunteer blood donors and deferral blood donors belonged to 21–30 years of age group. Studies by Girish *et al.*^[11] and Mamatha *et al.*^[8] showed similar findings.

Table 1: Data analysis of blood donation camp

Total number of registered volunteer blood donors	161
Total number of blood donors rejected	28
Total number of blood donors who did not donate blood after registration	3
Total number of blood donors donated	130
Total number of blood bags collected	130
Total number of blood bags found with leakage	1
Total number of blood bags with not sufficient quantity	6
Total number of blood bags discarded after testing	3

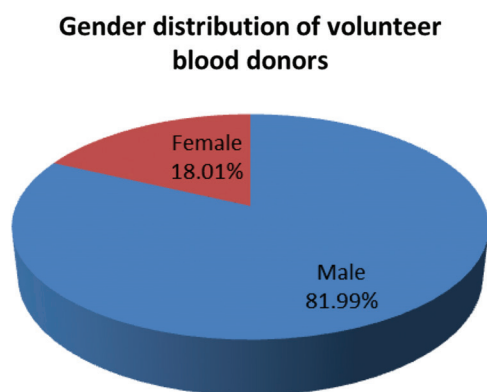


Figure 1: Gender distribution of volunteer blood donors.

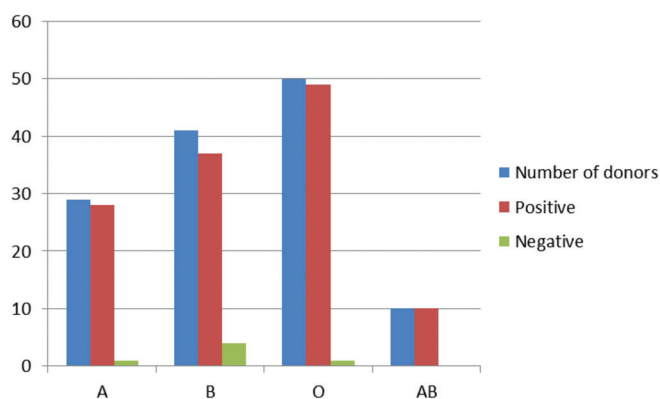


Figure 4: Distribution of various blood groups in blood donors.

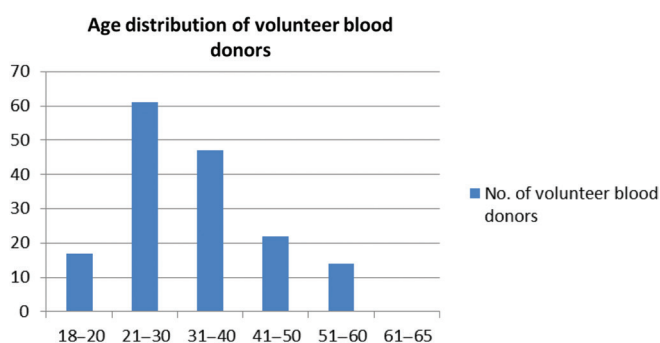


Figure 2: Age distribution of volunteer blood donors.

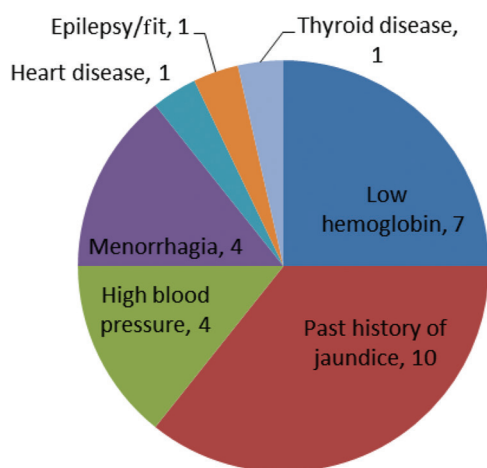


Figure 3: Reasons for deferrals from blood donation.

The probable reason for such finding was most of the donors belonged to this age group.

There was a great variability found in deferral rates according to geographical region, and it varies from 5% to 24%, which causes a great loss to nation. In our study, rate of deferral blood donors was 17.39%. Other studies by Mamatha

et al.,^[1] Unnikrisnan et al.,^[6] Rabeya et al.,^[8] and Sundar et al.^[12] showed comparable results. In this study, the most common cause of such deferral was history of jaundice. That was the permanent reason for deferral; other permanent reasons were hypertension, thyroid disease, and heart disease. Anemia was a temporary reason for deferral. In studies done by Girish et al.^[8] and Mamatha et al.^[11], anemia and less weight were temporary reasons for deferral. In another study by Sundar et al.,^[6] hypertension and diabetes mellitus were mentioned as permanent reasons for deferral from blood donation.

In this study, most of the blood bags were discarded because of positive test results in HIV, HBsAg, and malaria. Few blood bags were not of sufficient quantity. In our study, one leakage in blood bag was found. So, it showed that proper precaution should be taken while blood taping, and stringent laboratory tests should be applied before storage of blood.

Our study was a preliminary study, which gives glimpse about reasons for deferral from volunteer blood donation. If such factors were dealt efficiently, then recruitment of blood donors can be improved. Limitation of our study was small sample size; so, future interventional prospective study can be planned with large sample size.

Conclusion

In this study, reasons for rejection of volunteer blood donors were studied. The most common reason of such rejection was history of jaundice. Other reasons were anemia, hypertension, heart disease, etc. So, studying the donor profile helps us to analyze the population having temporary causes for rejection such as anemia and less weight, who in turn can be treated and educated so that they will become voluntary donors in future.

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How to cite this article: Shah A, Joshi P, Aghera GB, KJ Shah. A study on analysis of blood donation deferral during blood donation camp at tertiary-care teaching hospital in south Gujarat region. *Int J Med Sci Public Health* 2016;5:894-897

Source of Support: Nil, **Conflict of Interest:** None declared.