



Pattern and Trend of Female Donors in Blood Bank and Outdoor Blood Donation Camps - A 7 year Comparative Study from Blood Bank, Chamba, (H.P)

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Abstract

Introduction: Blood Donation is a service to mankind, saving millions of precious lives now and then. Human blood is an indispensable element of the human life as there is no substitute for it. Blood transfusion has an essential role in the patient care in routine and in emergency in any hospital setting. In developing nations like India, there is a huge inequality between the proportions of male and female donors. Females contribute a very small percentage in blood donation, in comparison to male gender.

Material and Methods: The present study was conducted in Department of Blood Bank, Pt. Jawahar Lal Nehru Govt. Medical College, Chamba (H.P), retrospectively from Jan 2011 to Dec 2017.

Results: On the whole, females formed 5 % and males formed 95 % of total blood donors. In outdoor camps, females contributed 18 %, whereas male donors formed 82 % of the total blood donors. In the in-house donations, female gender formed 2 % of the total blood donation, whereas male gender formed 98 % blood donors.

Discussion: We studied the gender distribution of donors in in-house and outdoor blood camps, and found quite a huge disparity in male and female donors. The total number of female donors was quite low, in comparison to male donors in both blood bank as well as outdoor blood camps. There were only 270 female donors, whereas number of male donors was much higher (5678), in our study, including both in blood bank and outdoor camp donations. Also, the number of female donors in outdoor camps was higher than in house female donors.

Conclusion: Motivation, education and counselling about voluntary blood donation should be actively done for females in mass community. They should be made aware about significance of balanced diet and health measures to be taken to prevent anemia, as majority of females in rural areas have low hemoglobin value, which hinders them for donating blood.

Keywords: blood bank, outdoor camp, blood donation, female donors, male donors.

Introduction

Blood Donation is a service to mankind, saving millions of precious lives now and then. Human blood is an indispensable element of the human life as there is no substitute for it¹. Blood transfusion has an essential role in the patient care in routine and in emergency in any hospital setting.

It is known to many that blood can be procured from healthy person between the ages 18-65 years. Also, the safe donors are the ones who donate their blood voluntarily purely out of altruism and are self-aware of their unsuitability to serve as blood donors². Voluntary blood donation has been universally accepted as the cornerstone of safe blood³. According to World Health Organization (WHO), the estimated blood requirement for the Southeast Asian region is about 16 million units per annum, where as only 9.4 million units are collected, leaving a deficit of 6 million units^{4,5}.

There is a significant shortage of blood in many nations. Although voluntary blood donations are on the rise (45% in 2002 to 59% 2007), still we are in short supply to meet the demands of blood required⁶. Female gender participation is an important issue in blood donation, even though there are few gender studies in the literature of blood transfusion. Females can play a major role in blood donation if they actively take part in blood donation process. In developing nations like India, there is a huge inequality between the proportions of male and female donors. Females contribute a very small percentage in blood donation, in comparison to male gender. There may be many reasons like psychological, cultural and social ones. First of all, fear of needle prick in females may be major reason. Also, there is significant lack of awareness in females about blood donation. Females also associate social stigma and taboo with blood donation, especially in rural areas. Another important factor restricting females from blood donation may be their poor health due to frequent pregnancies, and menstruation, breastfeeding, coupled with poor diet⁷. Therefore, there is an urgent need to make special efforts to educate and motivate women to participate in blood donation⁸.

Understanding of these reasons for blood deferrals in females may help in the development of new strategies in area of blood transfusion. Therefore, we undertook this study to establish the percentage of female gender contribution in the blood donation and also to observe the trend and pattern of female donors over a period of time. Also, this kind of study has not taken place in our region earlier and it would help in generating data for health planners with versatile utilities in near future.

Material and Methods

The present study was conducted in Department of Blood Bank, retrospectively from Jan 2011 to Dec 2017. Blood donors were required to fill the consent and questionnaire form with complete details like name, sex, age, address, any drug history, any past surgical history, history of any past surgical or medical illness like hepatitis, malaria, diabetes, hypertension, Thyroid disease, heart disease. Female donors were also asked about their menstruation history, history of amenorrhoea, Physical examination was undertaken by blood bank medical officer along with Hb testing, weight, blood pressure reading and only fit donors were allowed for blood donation. Patients found unfit for blood donation were deferred, advised and counselled accordingly.

Data was analysed using Ms Excel and SPSS version 20.

Results

A retrospective study was conducted for the period of 7 years from 2011 to 2017. Year wise and gender distribution of donors was studied for in-house /blood bank and the donors at blood donation camps. Further the pattern of female donors over a period of 7 years was noted in regard to number, percentage in comparison to male donors and total donors and in addition, change in trend over a period of time was observed.

Table 1 Distribution of total blood donors

Year	Total donors	Outdoor camp donors	Blood bank donors
2011	586	177	409
2012	705	179	526
2013	818	65	753
2014	1223	155	1068
2015	684	134	550
2016	940	183	757
2017	992	128	864
Total	5948	1021	4927

Graph 1 Comparison of Total outdoor camp –blood bank donors

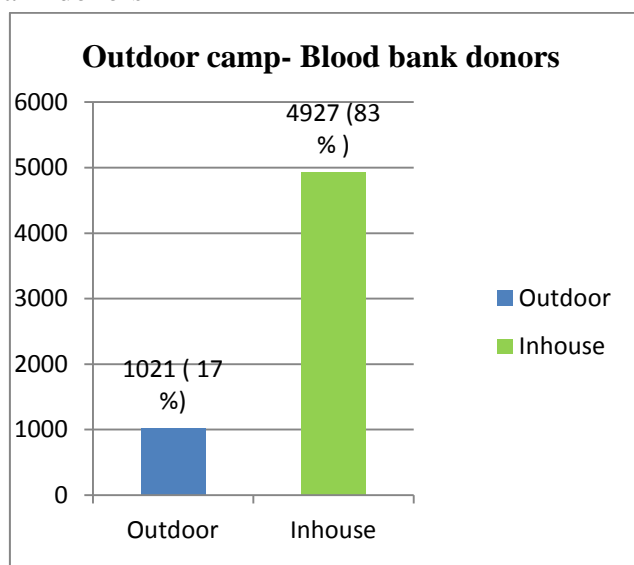
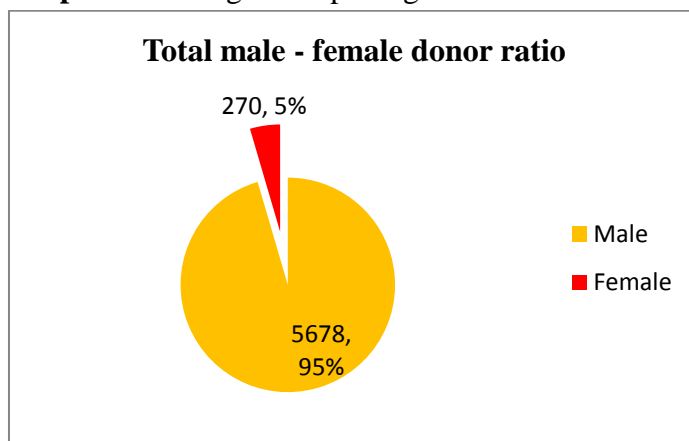


Table 2- Gender Distribution of blood bank and outdoor camp donors

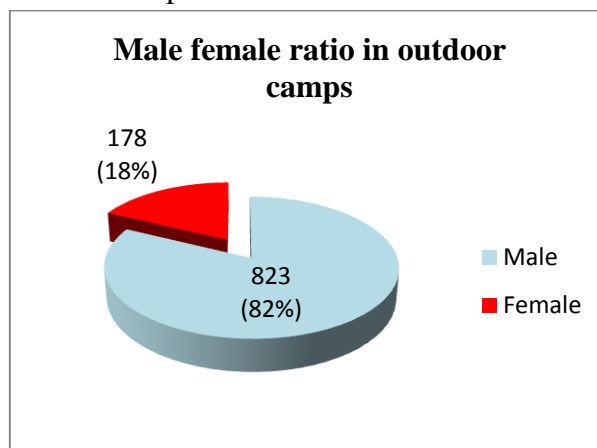
Year	Outdoor donors / blood camp		Inhouse donors /blood bank	
	Male	Female	Male	Female
2011	139	38	404	5
2012	139	40	517	9
2013	40	25	727	26
2014	120	35	1049	19
2015	122	12	548	2
2016	146	17	754	23
2017	117	11	856	8
Total	823	178	4855	92

Graph 2- Pie diagram depicting male female ratio



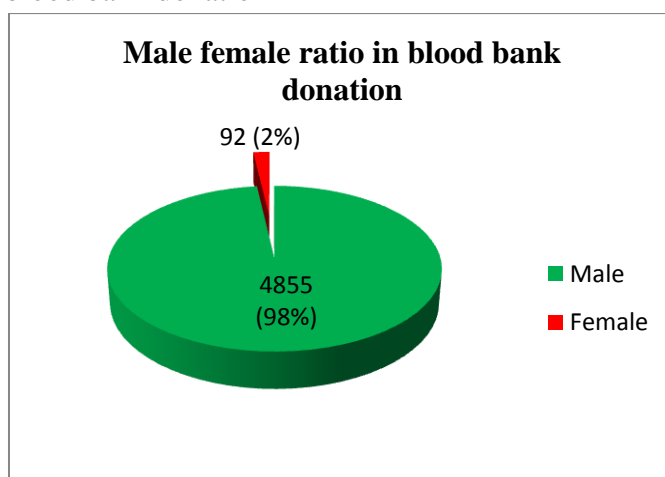
The above graph shows total male – female ratio. On the whole, females formed 5 % and males formed 95 % of total blood donors.

Graph 3- Pie diagram depicting male female ratio in outdoor camps



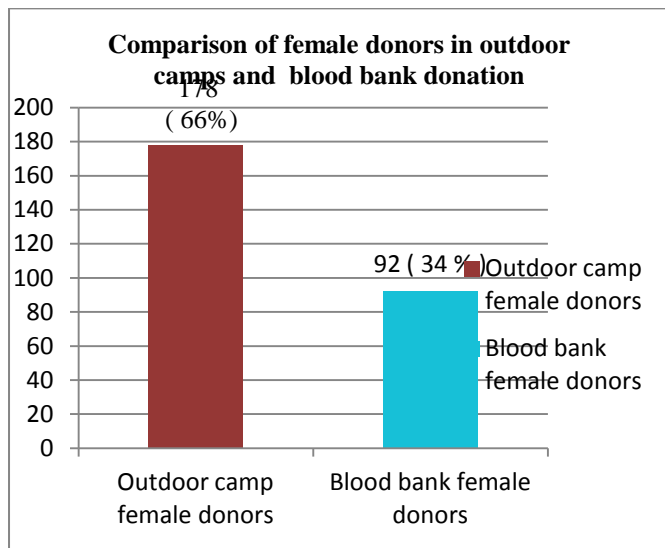
In the above graph, in outdoor camps, females contributed 18 %, whereas male donors formed 82 % of the total blood donors.

Graph 4 Pie diagram depicting male female ratio in blood bank donation



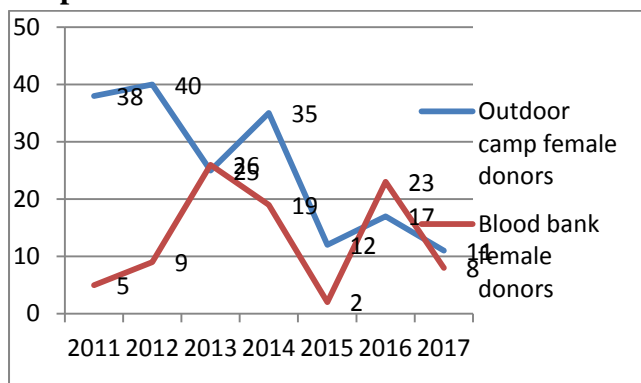
In graph 4, in the blood bank donations, female gender formed 2 % of the total blood donation, whereas male gender formed 98 % blood donors.

Graph 5- Females in outdoor camps and blood bank donation



In graph 5, it can be seen that the no. of female donors in outdoor camps (178, 66%) was higher than in house female donors (92, 34%).

Graph 6- Trend of female donors



The above graph shows the trend of female donors over a period of time. As it can be seen from the year 2011, in the blood bank donations, female donors showed a gradual rise till the year 2013 (26 donors), then there was a fall in number of females in 2014 (19 donors), and also in 2015 (2 donors), followed by a rise in female donors in 2016 (23), and again a fall in donors in 2017 (8 donors). Likewise, in the outdoor camps, there was a small rise in female donors from 2011 (38) to 2012 (40), followed by a brief fall in number in 2013 (25), then 35 donors in 2014, and then a short decline in 2015

(12 donors), then again a small rise in 2016 (17 donors), and then a subsequent fall in 2017 (11 donors).

Discussion

We had a total of 5948 blood donors in our study period. There were 1021 outdoor blood donors including both male and female gender. According to our study, the number of inhouse /blood bank donors (4927) was higher than outdoor / blood camp donors. Similar trend was observed by Kate MS⁹, who showed higher number of outdoor blood donors (1544) than in-house donors (628) in their study.

The inhouse donors, in our study were mostly the replacement blood donors, and very few voluntary donors. There were about 95 % replacement blood donors and 5 % voluntary donors in blood bank donations. Dhar G¹⁰ also reported higher no. of voluntary donors (83.4 %) than replacement blood donors (16.6 %) in their study, similar to our study.

When we studied the gender distribution of donors in in-house and outdoor blood camps, we found quite a huge disparity in male and female donors. The total number of female donors was quite low, in comparison to male donors in both blood bank as well as outdoor blood camps. There were only 270 female donors, whereas number of male donors was much higher (5678), in our study, including both inhouse and outhouse blood donations. The contribution of females in blood donation is much lesser than male gender in our study, as female donors formed only 5%, on the contrary, male donors contributed 95 % of total blood donation. Our study is in agreement with study by Bala SS¹¹, reporting 95.56 % blood donors and 4.44% female blood donors. Other studies done in past in India and other nations showed similar trend. Study at Western Ahmedabad¹² showed 95.48 % males and 4.52 % female blood donors, Hyderabad¹³ with 97.73 % males, 2.27 % females. Our study is also comparable with countries like Bahrain, Kuwait, Yemen, Qatar etc while in countries like Australia and Finland males and females donate in almost same proportion¹⁴.

When we compared the outdoor and blood bank donations in respect to female gender, we found that the percentage of female donors was higher in outdoor / blood camps (66 %) than inhouse blood bank (34 %). Also, the M: F ratio was different in blood camps (82 % males, 18 % females) than blood bank blood donations (98% males, 2% females). Study by Bala SS¹¹ also showed that the number of female donors was higher in outdoor camps than inhouse blood donations. It can be interpreted from the present study that the contribution of female gender is very low compared to male gender in blood donation.

It can be seen from our study, that the graph of female donors in blood camps shows a decline on the whole, and graph is not progressively rising over a period of time. The graph showing females in blood bank donations shows many rise and fall from 2011 to 2017 with 5 females in 2011, 26 in 2013, 8 in 2017. Therefore, we need to take strong measures to raise the number of female donors in voluntary blood camps and blood bank, as the present study presents poor participation of female gender in the blood transfusion process. We should aim for greater participation from females in our blood bank and camps. This target may be achieved by organizing regular blood donation awareness camps with emphasis on female gender involvement in our community. Frequent voluntary blood camps should be held both outdoor and at blood bank and females should be encouraged to actively take part in blood donation. Research done in past has reported that women experience up to 70% more deferrals from donation than men, because of higher percentage of anaemia, and adverse reactions in females^{15,17}. Females experience vasovagal reactions and post-donation fatigue, more than male donors. The major reason for females for not donating blood reported by previous studies was fear.^{18,19} The fears regarding blood donation in females needs to be eliminated. Studies show that women are underrepresented among regular donors²⁰⁻²⁴. Many studies within India have also shown a large number of male donors compared to few female donors.^{25,26} In developing country like India there are lot of

myths, social taboos, cultural habits, lack of motivation and fear of blood donation that prevail in the society because of which female participation in voluntary blood donation is very less. These fears, myths and taboos need to eradicate by providing right knowledge and health education to the target population. People also need to be educated about the importance of healthy balanced diet and how to get complete nutrition from locally available food products that are affordable for them. This will help to prevent anemia which is one of the major reason for inability of females to donate blood.

Conclusion

Motivation, education, and counselling about voluntary blood donation should be actively done for females in mass community. They should be made aware about significance of balanced diet and health measures to be taken to prevent anemia, as majority of females in rural areas have low hemoglobin value, which hinders them for donating blood. All their doubts, misconceptions, social stigmas related to blood donation should be addressed and cleared by blood bank personnel, so that more and more females come forward voluntarily for blood donation, without any fear or hesitation.

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