

## Gender Differences in Blood Donation among Donors of Kashmir Valley

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### Abstract:

**Background:** Human blood is a vital and an essential element of the human life and there are no substitutes for it. This study aims to determine gender difference in blood donation among the population in Kashmir valley, J&K, India.

**Material and Methods:** Study was done for a period of one year in the Department of Haematology and Transfusion Medicine, SMHS Hospital, Srinagar, J&K, India. In this present prospective study, we investigated the level of female gender participation in the blood donation process by evaluating the total blood donation in year 2013-2014. Blood grouping for ABO and Rh status was done by tile agglutination method using commercially available anti-seras.

**Results and Conclusion:** Female donors contribute only minor of 4.44% while blood donation by males was 95.56%. Also it was found that blood group B was more common in females while in males predominant was blood group O. The study has a significant implication regarding the inventory management of blood bank.

**Keywords:** female gender, blood donation, Kashmir.

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### I. Introduction

Human blood is a vital and an essential element of the human life and there are no substitutes for it [1]. So blood donation by humans continues to be the major source for blood and blood components. Millions of lives are saved each year through blood transfusions, who have lost large volumes of blood from serious accidents, major Surgical Operation, Cancer patients requiring therapy, women with haemorrhage at childbirth, patients of hereditary disorders like Haemophilia and Thalassaemia, Severe burn victims as well as for individuals who have symptomatic anemia from medical or hematologic conditions or cancers. Therefore Blood banks are obligated to provide adequate and safe blood to the community. Safe blood is a critical component. The safest donors are found among people who donate their blood voluntarily purely out of altruism and are self-aware of their unsuitability to serve as blood donors [2]. Voluntary, non-remunerated blood donation has been universally shown to be the cornerstone of safe blood [3]. According to World Health Organization (WHO), the estimated blood requirement for Southeast Asian region is about 16 million units per annum, but it collects just about 9.4 million units, leaving a gap of six million units [4,5]. There is a considerable shortage of blood, Although voluntary blood donations are increasing (45% in 2002 to 59% 2007), still it is insufficient to meet the demands of blood needed [4]. WHO estimates that blood donation by at least 1% of the population is generally sufficient to meet a country's basic requirements for safe blood [6]. Female blood donor participation is a key issue in this context, even though gender studies are very limited in the transfusion field. There is paucity of data on female gender participation in the blood donation process. Women play a substantial role in blood donation. A gender difference in blood donation does not seem to have received much attention in the literature, India is a country with a lot of diversity based on race, religion and creed. A substantial inequality has emerged between the proportions of male and female periodic donors. Only minor percentage is contributed by the female donors. Reasons being psychological, cultural and social ones, the predominant one was fear of some aspects of the collection process such as needle prick. Cultural and religious issues such as women's dependence on men, the erroneous belief that men are healthier than women, that women make monthly blood donations to nature through their menstrual cycle besides other factors such as pregnancy and breastfeeding further restrict many women from donating blood [7].

There is need to intensify efforts to motivate women and lower educated people to give blood [8]. A bold strategy needs to be adopted to educate the community about the importance of blood donation. Women are under-represented among blood donors. Understanding of the reasons for this phenomenon may facilitate the development of new strategies. Therefore, the aim of this study was to investigate the level of female gender participation in the blood donation as it becomes imperative to have information in any population on gender basis, besides it also helps in generating data for health planners with multipurpose utilities in future.

## II. Aims And Objectives

The present study was designed to determine female gender participation in blood donation in Kashmir valley, J&K India and compare with other data available from similar studies.

## III. Material And Methods

Present study was carried out for a period of one year 2013- 2014 at Department of Haematology and Transfusion Medicine, SMHS (a tertiary care teaching hospital), Srinagar J&K, India. Total of 7022 blood donors were taken from in-house/ replacement at blood bank and outdoor blood donation camps (includes universities, colleges, corporate sectors,NGOs. etc.). Blood donors were selected after proper history and complete examination fulfilling all eligibility criteria's for blood donation.Exclusion criteria of particular importance for the gender differences like low body weight (below 50 kg), low haemoglobin(cut-off standard 12.5gm/dl),pregnant and lactating donors were deferred. In this present prospective study, we investigated the level of female gender participation in the blood donation process by evaluating the total blood donation in year 2013-2014.Besides gender wise prevalence of various blood groups were also assessed. Determination of ABO and Rh status was done by tile method of agglutination. Drop of blood was placed on clean white tile at 3 places in a row. A drop of commercially available Anti-A, Anti-B and Anti-D (monoclonal antisera) were added respectively (by Tulip Diagnosis Ltd. India). On basis of agglutination of serum by respective anti-sera, blood groups were determined.

## IV. Results

Gender wise frequency of ABO blood group in a total donor population of 7022 was compared (table 1).On analyzing data it could be read that 95.56% donation was by males and only 4.44% was contributed by females.

On further analysis,most prevalent blood group in males happens to be O+ve closely followed by B+ve while reverse was true for females.Hence, the trend of distribution was

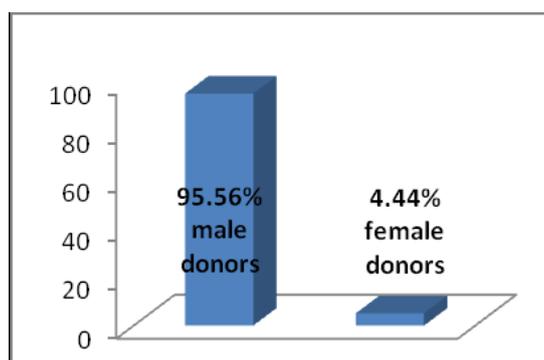
Males:O+ve>B+ve>A+ve>AB+ve>O-ve>B-ve>A-ve>AB-ve.

Females:B+ve>O+ve>A+ve>AB+ve>B-ve>O-ve>A-ve>AB-ve.

**Table 1.Gender wise distribution of ABO and Rh blood groups**

Blood Group	Males	Females	Total
A+ve	1465	68	1533
A-ve	137	7	144
B+ve	2059	99	2158
B-ve	170	13	183
O+ve	2109	95	2204
O-ve	226	8	234
AB+ve	486	21	507
AB-ve	58	1	59
<b>TOTAL</b>	<b>6710 (95.56%)</b>	<b>312 (4.44%)</b>	<b>7022 (100%)</b>

### Diagrammatic Representation Of Gender Wise Distribution Of Blood Donors



**Table 2: Distribution Of Female Blood Donors**

PLACE OF DONATION	No. of donors	Percentage
IN HOUSE /REPLACEMENT DONATION	71	22.76%
CAMPS/ OUT DOOR DONATION	241	77.24%
Total	312	100%

**Table 3: Distribution Of Outdoor Blood Donors**

DONATION BY	NO.OFFEMALE DONORS	PERCENTAGE
SHIA MUSLIM COMMUNITY	115	47.71%
STUDENTS	96	39.83%
OTHERS(NGOS,COORPORATE SECTOR ETC)	30	12.46%
TOTAL	241	100%

From table 2 it could be read that maximum of female donors were from outdoor camps(77.24%) as compared to inhouse replacement female donors(22.76%).

On analysing data for distribution of female donors among outdoor donors in table 3, it could be read that maximum donation of 47.71% was from camps by shia community of muslims alone followed by contribution by female students(39.83%)while rest of 12.46% donors were from other camps(NGOs,corporate sector,banks etc).

## V. Discussion

The study under discussion has determined the gender distribution of blood donors in a tertiary care teaching hospitals. Previous research has reported that women experience up to 70% more deferrals from donation than men, because of higher frequencies of anaemia, other health problems and of adverse reactions [9-11]. Vasovagal reactions and post-donation fatigue appear more to be in females as compared to males. Hence, general health of females needs to be improved by good nutritional diet and iron supplements. The major reason for not donating blood reported by previous studies [12,13] was fear. The fears regarding blood donation in females needs to be driven out by making them aware about the advantages of blood donation. Studies show that women are underrepresented among regular donors[14-18]. Majority of the studies within India have also described a large number of male donors compared to female donors[19,20]. This is because of the fact that in developing country like India, because of social taboo,cultural habits, lack of motivation and fear of blood donation, female donors was very less. Globally, most blood from voluntary blood donations is collected from outdoor camps,organized in educational institutions, industrial and commercial houses [21]. In our study major proportion of female donors were from outdoor camps. Shia community of muslims contributed maximum closely followed by the student population. People with religious bonds are reported to contribute more actively to charitable practices[22]. In our study out of total female donation 36.85% was contributed by shia female donors. Religious beliefs are the most frequent positive motivation for blood donation[23]. The most important date in this regard is Ashura day. The Day of Ashura, is the 10<sup>th</sup> of Muharram.They donate blood in memorial of Hazrat Imam Hussain's(RA) fight for preservation of Islam. These are unique opportunities available for limited blood banks throughout the world

Second important group was female students about 30.76% of total female donors.According to a study more than one-third of the donor population is students [24]. The healthy, active and receptive huge student population is potential blood donors to meet safe blood requirements. The student population is highly amenable to the idea of voluntary blood donation and it shows that the student population is very good in recruiting new blood donors and we could retain them for future success.

In our study Gender-wise greater proportion of the blood donors were majority males (95.56%) than the female (4.44%) counterparts. These findings are comparable with the study conducted in Western Ahmedabad where 95.48% were males and 4.52% were females[25] and in Hyderabad where 97.73% were males and 2.27% were females[26].Further our study is comparable with countries like Bahrain,Kuwait,Yemen,Qatar etc while in countries like Australia and Finland males and females donate in almost same proportion[27].

Thus present study concludes that blood group O is the commonest among male donor's while blood group B predominate among females. Also 95.56% were male donors while only 4.44% were female donors. This study of frequency distribution of gender wise blood groups in donor population is very important for

generation of simple database. The data generated in present study and similar studies in each region will be useful for health planners for drafting national transfusion policies.

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