

Voluntary Non-remunerated Blood Donations: The Reasons for Underrepresentation of Female Gender and the Way Forward

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Blood has been recognized as a crucial resource in the delivery of a diverse range of healthcare. The spectrum of its usage may vary as per the socioeconomic demography of the region, the disease burden, and the healthcare facilities available. Therefore, the provision of safe and adequate blood supplies has been recognized as one of the important public health responsibilities of the government. The World Health Assembly (WHA) recognized this in 1975 and proposed World Blood Donor Day under the resolution WHA58.13.^{1,2} The World Health Organization (WHO) established the Global Database on Blood Safety in 1998 to address the concerns with regard to the availability, safety, and accessibility of blood for transfusions. In its successive reports, it has been observed that the availability and safety of blood are a continuing concern with regard to the availability and safety of blood supplies.^{1,2} It has also been recommended that demographic information on blood donors is crucial for formulation and monitoring donor recruitment strategies, and this must include the redressal of barriers to blood donation that a specific population may face. One of the fundamental strategies in the concerted efforts towards universal health coverage is to ensure timely access to safe and sufficient supplies based on voluntary non-remunerated blood donations (VNRDs).³ Therefore, an all-inclusive and composite approach is needed to bridge the gap noted between the clinical demand and the availability of blood supplies. Unless the gender underrepresentation (specific population as mentioned before) in blood donations is appreciated in its true sense and seeds sown for a secure and resilient blood supply from the female gender, the plan may not be construed as all-inclusive and composite. In this editorial, we delve into the unique challenges of obtaining blood donations from the female gender and the opportunities thereof.

The interest in the subtle gender differences in medicine has been appreciated more than ever before in the last 3 decades. This has largely been appreciated with respect to the etiopathogenesis, clinical manifestations, and the response to the treatment in many disorders.⁴ The concept of "health" included "gender" as a new dimension based on inherent differences in genetics, physiology, and social and cultural attributes. Despite that, there is still a paucity of data in the literature with regard to the role of gender and its influence in motivation towards adoption of a culture of VNRDs; rather, there has been a mere acceptance of the fact that women are underrepresented in blood donation, without any structured approach towards understanding and acting on the reasons thereof.⁴⁻⁷

Globally, 106 million units are donated annually, 33% from females and 45% from donors aged 25–44 years. The median blood

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donations from females varied from as low as six in the Eastern Mediterranean, to as high as 22–27 and 30 in Africa, South-East Asia, and Western Pacific, and 38–40 in the Europe and Americas regions of the WHO.² The female underrepresentation may be attributed to lack of time due to the multitasking required to balance responsibilities of the home, office, and family, thereby leaving less time for the thought of VNRDs. The low hemoglobin or other physiological factors which restrict females from donating blood aside from fears, taboos, and social restrictions inherent to the homemaker's profile, even when it is known that even male blood donors with good knowledge and positive attitude do not donate blood regularly.⁴⁻⁹ The effect of fears and social restrictions were explicitly observed hindering blood donations during coronavirus disease 2019.¹⁰ In the studies to understand the gender differences in blood donation, the authors concluded that there were two main factors restricting a female donor from donating blood *viz*; low hemoglobin and a higher rate of vasovagal reactions.⁴⁻⁷ The percentage of female donors deferred due to the presence of lower hemoglobin varies from region to region, depending upon regional demographics such as socioeconomic cultural dietary and genetic determinants.

The reasons that predispose a female to VNRDs predominantly because of low hemoglobin is the iron and or protein deficiency due to the mismatch between the physiological requirement at the age and the availability in the diet. In terms of physiological restrictions, adolescent females may have iron deficiency due to the attainment of menarche/heavy flow during the initial setting of pituitary superimposed on the higher demand posed by the higher anabolic

growth and development. In the early and mid-reproductive age-group, menstruation, pregnancy, lactation, and postdelivery phase, there is a higher demand for iron to nourish and rear the child. The approximate menstrual blood loss in females in 1 year is almost equitable to three blood donations; therefore, revision of the number of donations from females to one per year may be more justified keeping in view the lean body structure, dietary pattern, and the socioeconomic and demographic diversity in our country. An intensive campaign to inform, educate, communicate, and motivate females towards the adoption of iron and protein-rich sources in their diet is the need of the hour. The provision of mid-day meals to ensure protein and iron intake or micronutrient-fortified food supplements are definitely expected to help in combating iron deficiency anemia in young females in the long term.^{11,12}

It has been observed that females represent a relatively safer pool of donors in terms of the prevalence of transfusion transmissible infections.¹³ Females are also less likely to expect donor incentives, more empathic and passionate to help society, and are hence easy to retain as regular VNRDs.⁴⁻⁷

To conclude, though blood collection agencies do not discriminate against donors based on gender, there is still a significant underrepresentation of females as blood donors, and the reasons range from social to psychological and physiological. In the era of women's empowerment, where women make equal contributions as men in all aspects of life, it is just time that the transfusion services realized the present underrepresentation and to optimize the future potential in terms of the safety of the young female blood donor base. To empower women in VNRDs, the way forward is to formulate Information Education & Communication (IEC) strategies to motivate donors at the school level, take appropriate measures to provide iron-protein rich diet to school going females and reinduct the temporarily deferred female donors.¹⁴

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