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TRANSFUSION CLINIQUE ET BIOLOGIQUE

Transfusion Clinique et Biologique xxx (2017) xxx-xxx

Review article

# Confronting the misbeliefs pertaining to blood donation and transfusion practices in India

Confronter les fausses croyances concernant les dons de sang et les pratiques de transfusion en Inde

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#### Abstract

India, a country of 1.3 billion is still yearning for just 12 million units of blood and facing a shortage of 10%; this seemingly small number has claimed many lives, particularly in the less developed parts of the country. The root cause of the problem, although not defined clearly, can be ascertained from the survey reports from different parts of the country targeted to analyze the knowledge, attitude and practices related to blood donation. Most of these reports are coherent in their findings and report the existence of the fallacious perceptions about blood donation even after six decades of the initiation of voluntary blood donation practices. The unawareness about the shortage and lack of opportunities to donate have emerged as important factors for the lack of motivation towards donation. The shortage of blood in turn promotes replacement transfusion nationwide as the only alternative to restore the exhausted stock, since humans serve as the only source of supply for the replenishment of this life-saving fluid. Paucity of blood banks across the country, particularly in the rural areas makes the situation even worse. There is a dire need to emphasize on the participation of youth. The poor implementation of the various governmental policies, aimed at increasing voluntary non-remunerated blood donation (VNRBD) also requires tremendous improvement.

Keywords: Voluntary non-remunerated blood donation (VNRBD); Knowledge; Attitude; Motivation; Replacement transfusion

#### Résumé

L'Inde, un pays de 1,3 milliards d'habitants a encore besoin de seulement 12 millions d'unités de sang et fait face à une pénurie de 10 %; ce nombre apparemment faible a sauvé de nombreuses vies particulièrement dans les régions les moins développées du pays. La cause principale du problème, bien que non définie clairement, peut être déterminée à partir des rapports d'enquête de différentes parties du pays ciblées pour analyser les connaissances, les attitudes et les pratiques liées au don du sang. La plupart de ces rapports sont cohérents dans leurs résultats et signalent l'existence de perceptions fallacieuses concernant le don du sang, même après six décennies d'initiation de pratiques volontaires. L'ignorance de la pénurie et le manque de possibilités de dons ont émergé comme des facteurs importants pour le manque de motivation vers le don. La pénurie de sang à son tour favorise la transfusion de remplacement dans tout le pays comme la seule alternative pour restaurer le stock épuisé, car ce sont les humains qui servent de source d'approvisionnement pour le réapprovisionnement de ce liquide qui sauve la vie. La pénurie de banques de sang à travers le pays, en particulier dans les zones rurales, rend la situation encore plus difficile. Il est urgent d'accroître la participation des jeunes. La mauvaise mise en œuvre des diverses politiques gouvernementales visant à accroître le don volontaire non rémunéré de sang nécessite également une amélioration considérable.

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Mots clés : Don de sang volontaire non rémunéré ; Connaissance ; Attitude ; Motivation ; Transfusion de remplacement

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http://dx.doi.org/10.1016/j.tracli.2017.09.001

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Please cite this article in press as: Qureshi A. Confronting the misbeliefs pertaining to blood donation and transfusion practices in India. Transfusion Clinique et Biologique (2017), http://dx.doi.org/10.1016/j.tracli.2017.09.001

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A year ago, I had a patient who was severely anemic and was in labor. Her husband was requested to donate blood in anticipation of the blood loss. The donation was necessary to get a replacement transfusion as the blood bank had denied issuing blood without replacement due to insufficient stock. The husband negated the request, stating that he is the sole breadwinner of the family and donation will make him weak. All the attempts to explain that blood donation does not make anybody weak went in vain. This misconception was so deeply rooted that the threat to the life of his wife seemed secondary to him. At around the same time, an incident was reported from a rural area of Chhattisgarh, an Indian state, where a female bled to death due to the lack of transfusion post-uterine rupture [1]. Unfortunately, such reports of people dying from lack of timely blood transfusions are still common across the country. Furthermore, these may just be the tip of the iceberg with many not making it to the mass media. These experiences were, in fact, an eye opener towards a deadly problem of my country, the scarcity of blood. The grave situation of blood collection, storage, and utilization can be judged by the maternal mortality. WHO quoted that almost five women die every hour in India due to insufficient blood transfusion after obstetric hemorrhage [2]. This article was thus conceived in an attempt to unfold the ground reality of blood donation and transfusion in India through the experiences of a young Indian physician.

Apart from the routine requirement of blood for medical and surgical interventions, millions lose their lives to road traffic accidents (RTA). In India, the lack of blood transfusion services near the accident sites is believed to be the causal factor in the increasing number of deaths due to RTA's [3]. India is a fast growing economy with the literacy rate of 74.04%, which has been improving every year, but the illiteracy regarding blood donation and transfusion hasn't seen any change in ages. Several myths associated with blood donation are rampant throughout the country and cost many lives due to the shortage of blood. According to WHO, the whole blood donation rate is an indicator of the availability of blood in a country [4]. Developed countries like Switzerland and Japan have a higher number of donations 113 and 70 respectively per 1000 population [5]. On the other hand, India has less than 10 blood donations per 1000 population

Blood transfusion is a crucial part of the health care system all around the world and contributes to saving lives of millions in both routine and emergency settings. With the advancements in clinical medicine, the need for this life-saving fluid is rising. The annual blood collection across the world is over 112.5 million units of blood, towards a requirement of 150 million units [4]. It is admitted that the availability of safe blood is dependent on the voluntary non-remunerated blood donation (VNRBD). According to WHO, High-income countries, inhabitant to only 19% of the world's population, contribute almost 50% of the total collection of blood via donation [4]. Thus, there is a huge disparity regarding the collection of blood via donation between high-income and low-income countries.

Against an annual demand of 12 million units, the blood collection in the country is 10.8 million units [7]. Moreover, there is a huge discrepancy in the availability of blood amongst various

cities. While some cities have blood in excess, others are striving for it. The condition of rural India where almost 70% of the population resides is worse than the rest. Bihar, one of the most populous cities of the country, has an 84% shortage of blood. 81 districts in India do not even have a blood bank [8]. The blood banking system is an approach of the government to assure a safe and sufficient supply of blood and blood products for all the patients requiring transfusion. But clearly, there is a room for improvement.

VNRBD is believed to be the foundation of the safe blood transfusion services (BTS) [9]. The practice of VNRBD in India started in 1942 during the 2nd world war when it was aimed to help wounded soldiers. In 1954, a social reformer initiated voluntary blood donation camps. The next milestone was the declaration of October 1 as the Blood Donation Day in 1975. But this was followed by a major setback in 1980 with the emergence of AIDS. In 1992, National AIDS Control Organization was established to prevent the spread of this potentially fatal disease. Since 1998, the practice of selling blood has been barred. Later, the National Blood Policy (2002) and an Action Plan for Blood Safety (2003) were implemented to increase awareness about blood donation, in order to ensure availability of sufficient quantity of safe blood [10].

According to the WHO, nearly 38% of the voluntary blood donations are by people under the age of 25 [11]. Additionally, India is home to the largest number of young population, yet only one percent of eligible donors donate blood. Bharatwaj et al. studied the knowledge, attitude, and practices of voluntary blood donation amongst medical students. The results were rather worrisome. They reported that none of the participants were able to respond to the knowledge based questions with 100% accuracy. Most of the participants were unable to define an eligible donor. Only 1 of the participant out of 104 had ever donated blood, which was aimed for a replacement transfusion. The major reason behind not donating blood was a lack of opportunity [12]. Although this study was conducted on a very small population, yet it reflects the actual scenario quite well. In another study conducted in a North Indian state (Sikkim) by Shenga et al., 78.7% of the participants believed that people need to donate blood only when a friend or relative requires it [13]. As a student, I have witnessed blood donation camps, but never donated due to the obliviousness towards the critical situation of the paucity of blood in the country. WHO has recommended all the developing countries to emphasize on the participation of youth, in order to achieve 100 percent voluntary blood donation [14]. However, the lack of knowledge and unawareness of the shortage of blood raise a big concern that needs to be addressed. Other studies conducted throughout the country suggest that lack of knowledge translates into poor attitudes and poor practices towards blood donation [15]. The unawareness about a simple fact that someone has to give blood in order for someone to receive blood speaks volumes for itself.

Although voluntary blood donation contributes to 78% of the total collection [7], there is an extensive reliance on replacement transfusion, which significantly increases the risk of transmission of blood-borne diseases. The donated blood remains viable for 35 to 42 days depending on the anticoagulant used for

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