



## The True Status of Family Replacement Blood Donors in a Tertiary Hospital Blood Service in Central Nigeria

## Le Véritable Statut des Donneurs de Sang Familiaux ou de Remplacement dans un Service de Sang d'un Hôpital Tertiaire au Nigeria Central

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### ABSTRACT

**Background:** To make up for the low blood collection from voluntary non-remunerated blood donors (VNRBD), by the blood services in Nigeria, patients' families are often requested to provide substitute blood donors for their family members' usage. However, many so-called family replacement donors (FRDs) are thought not to be true relatives.

**Objective:** The objective of this study was to establish the true family status of donors presenting as FRDs in a tertiary hospital blood service in central Nigeria.

**Methods:** Consecutive blood donors were studied with a structured questionnaire immediately after blood donation. The questionnaire contained six pretested, variably discriminatory and revealing questions. Donors' responses to questions about the recipients were verified by cross-checking with hospital records, and also by interviewing recipients. Personal telephone contacts given by the donors were verified by calls to the phone numbers. Donors' responses were scored, and donors scoring below a cut-off point were classified as false relatives.

**Results:** Seven hundred and sixty consecutive blood donors were recruited for the study. Sixty-seven (8.8%), 673 (88.8%), and 20 (2.6%) of them claimed to be VNRBD, FRD, and paid blood donors (PBDs) respectively. Of the 673 presumed FRDs, 323 (48%) scored below the cut-off mark of 5 points. Hence, 48% of the presumed FRDs were regarded as false family donors.

**Conclusion:** Significant proportions (48%) of presumed FRDs were found likely to be false family donors. Unquestioning acceptance of such donors may compromise blood safety.

### RÉSUMÉ

**Contexte:** Pour compenser la faible collecte de sang des donneurs de sang volontaires non rémunérés (DVNR) par les services de transfusion sanguine au Nigeria, les familles des patients sont souvent invitées à fournir des donneurs de sang de substitution. Cependant, de nombreux soi-disant donneurs familiaux de remplacement (DFR) ne sont pas considérés comme de vrais parents.

**Objectif:** L'objectif de cette étude était d'établir le véritable statut familial des donneurs se présentant sous la forme de DFR dans un service de transfusion dans un hôpital tertiaire du centre du Nigeria.

**Méthodes:** Les donneurs de sang consécutifs ont été étudiés avec un questionnaire structuré immédiatement après le don de sang. Le questionnaire comportait six questions prétestées, discriminatoires et révélatrices. Les réponses aux questions des donneurs concernant les bénéficiaires ont été vérifiées par recoupement avec les dossiers de l'hôpital, ainsi que par des entretiens avec les bénéficiaires. Les contacts téléphoniques personnels donnés par les donneurs ont été vérifiés par des appels téléphoniques. Les réponses des donneurs ont été notées, et les donneurs dont le score était inférieur à un seuil ont été classés dans la catégorie de faux parents.

**Résultats:** Sept cent soixante donneurs de sang consécutifs ont été recrutés pour l'étude. Soixante-sept (8,8%), 673 (88,8%) et 20 (2,6%) d'entre eux se sont déclarés comme étant des DVNR, DFR et des donneurs rémunérés (DR), respectivement. Sur les 673 DFR présumés, 323 (48%) ont obtenu un score inférieur à la barre des 5 points. Ainsi, 48% des DFR présumées étaient considérées comme de faux donneurs de la famille.

**Conclusion:** Des proportions significatives (48%) de DFR présumés étaient susceptibles d'être de faux donneurs de la famille. L'acceptation inconditionnelle de tels donneurs peut compromettre la sécurité du sang.

## INTRODUCTION

It has been accepted by the World Health Organization (WHO) that blood from voluntary non-remunerated blood donors (VNRBD), especially repeat donors from low-risk segments of the population, is the safest for clinical use.<sup>1</sup> In many countries in the developing world, particularly sub-Saharan Africa (SSA), the rate of collection of donor blood from VNRBDs falls far short of the demand.<sup>2</sup> In order to make up for the shortfall, patients' families are often requested to provide relatives or friends to donate blood for patients' use, or to replace blood that had been borrowed and used for the patients. There are divergent opinions among blood transfusion practitioners as to the safety of blood donated by family members. Some think that family replacement donors (FRDs) are, at least, as safe as first time volunteer donors<sup>3</sup>, and can be easily converted to repeat volunteers.<sup>4</sup> It is argued that stigmatizing and rejecting the FRD system is a waste of valuable resources.<sup>5</sup> Other practitioners believe that FRDs are paid blood donors in disguise, and information provided by them at donor selection points may be false. FRD blood may thus not be the safest. This group also thinks that even genuine family donors donate blood under pressure, and are not easy to convert to repeat volunteer donors.<sup>6</sup> While the arguments sound reasonable on both sides, there has been no hard evidence as to the proportion of "true family" and presumably "safe", and "fake family", and presumably "unsafe" donors among the FRDs. There is also no proven mechanism to distinguish one group of donors from the other. The objective of this pilot study is to determine the true family status of FRDs in the blood service of a tertiary hospital in central Nigeria.

## METHODOLOGY

### Participants

Consecutive blood donors were studied over a period of one month, at the donor clinic of the University Teaching Hospital, Ilorin, Nigeria. A structured questionnaire was designed for the study, and was pretested to reveal inconsistencies in donor's knowledge of the patient, and other donor information and status. The study was approved by the hospital ethics committee. The questionnaire was administered by a member of the research team on every donor, immediately after blood donation. The study was conducted post-donation when, it was thought, the possibility of detection as a commercial donor, and rejection at the screening point would no longer arise. The donor would therefore feel freer to answer questions more truthfully. The questionnaire was anonymous, in order to further put the donor's mind at rest concerning a possible witch-hunt.

### Discriminatory questions

Six questions were posed in the questionnaire to establish:

1. Donor's knowledge of the health problem of the patient for which blood had been donated. (such as RTA, peri-natal and surgery)
2. Donor's knowledge of the patient's location in the hospital, (ward, clinic, theatre, emergency)
3. Donor's knowledge of the patient's age group (elderly, adult, youth, child)
4. Donor's knowledge of the patient's gender (male, female)
5. Relationship of the donor to the patient, (family, friend)
6. Telephone number of the donor

**Table 1** shows the scores allocated to each question according to their perceived importance, which brought the total obtainable points to 7. If on verification, the donor's responses to at least 4 of the 5 questions about the patient were correct, he would score up to 5 points out of the 7 obtainable. Such a donor was considered likely to be a true family donor. Donors scoring below the cut-off mark of 5 points were considered not to be sufficiently intimate with the patient to be a family member or friend. They were therefore grouped among the false FRDs.

**Table 1.** Questions and point allocation

Question	Point score
Knowledge of patient's health problem	2
Knowledge of patient's age group	1
Knowledge of patient's gender	1
Knowledge of patient's location	1
Relationship to patient	1
Telephone number of donor	1
<b>Total</b>	<b>7</b>

### Verification of donors' responses

Verification was in the fashion of a detective exercise. The age, gender, health problem, and location of the patient were easily verified from hospital records. The relationship to the patient, as claimed by the donor, was verified by asking the patient, or the visiting relatives, if they knew, by name or by relationship, the person who donated blood on their behalf. If the response was positive, the donor was awarded the full one point for that question. Negative responses by the patient or the relatives attracted a zero score for the donor for that question. It is worthy to note here that many relatives gave the donor's name as the person who was later identified as the "go-between" or syndicate manager. To verify the telephone contact provided by the donor, calls were placed to the given number, ostensibly to check on the post-donation health of the donor. If the person receiving the call confirmed that he recently donated blood at our hospital for a relative or friend, the donor was awarded the full one point for that question. If however the person receiving the call denied having donated blood recently, or the call was repeatedly blocked or truncated by the receiver, or the number was declared invalid by the mobile telecom provider, the donor was judged to have been untruthful

about his telephone contact, and was classified as a false family donor.

## RESULTS

**Table 2** shows the distribution of donors by category. The vast majority of donors, (673/88.6%), claimed to have donated their blood freely on behalf of a family member or friend. Twenty donors (2.6%) admitted that they donated blood on behalf of a patient for a fee, and were classified as paid donors. The remaining 67 donors (8.8%) had no recipient in mind, and were classified as VNRBDs. **Table 3** shows the results of the verification exercise. Donors scoring up to the cut-off level of 5 points, or above, were 350 or 52%, while donors scoring below the cut-off level of 5 points were 323 (48.0%).

**Table 2.** Distribution of donors by types

Type of donor	Number	%
Voluntary non-remunerated blood donors (VNRBD)	67	8.8
Family replacement donor (FRD)	673	88.6
Paid donor (self-confessed PBD)	20	2.6
<b>Total</b>	<b>760</b>	<b>100.0</b>

**Table 3.** Scores by family/replacement donors

FRD scores after verification	Number	%
Number scoring up to cut-off point (5 and above)	350	52.0
Number scoring below cut-off point (below 5)	323	48.0
<b>Total</b>	<b>673</b>	<b>100.0</b>

## DISCUSSION

In this study, nearly half (48%) of the donors who presented themselves as family members or friends, were found not likely to be so. Although this figure was arrived at indirectly, based on seemingly arbitrary assumptions, there is no doubt that a significant number of so-called family donors were false, and not true relatives or friends. Indeed, the finding of 48% false FRDs may be an underestimate. During the period of study, 28 (3.6%) of the prospective donors screened, were rejected due to low haemoglobin. An unknown proportion of them were likely to be commercial donors who were attempting repeat blood donation before full recovery from a previous donation.

On further interaction with the self-confessed paid donors, it was revealed that the false FRD system operates in an organized syndicate fashion. When relatives are requested to provide family donors, and they are unable or unwilling to do so, they get to find out about, and approach, the syndicate managers to recruit paid blood donors. After agreeable negotiations, the managers collect relevant information about the patient. They then select, and mobilize donors

from their existing register, equip them with the patient's data, and send them to the blood bank to pose as relatives. After successful donation, the managers pay off the donor, and keep what is their cut of the fees paid by the relatives. These false FRDs may be normal healthy-looking persons, but information about themselves, provided at donor screening, including names, addresses, telephone numbers, and history of risk behaviour may not be truthful. Traceability is thus almost impossible, and the safety of the donated blood is in doubt. An additional dimension, disclosed by a syndicate member on condition of anonymity, was that the syndicate allegedly has on its payroll, unscrupulous secret collaborators within the blood service, who tutor the false FRDs how to lie about their history, and may even go as far as falsifying haemoglobin screening results in favour of the false FRDs.

On the other hand, 52% of the FRDs in this study were found likely to be genuine family members, and these are the ones that may be suitable candidates for mobilization as repeat voluntary donors. The problem however remains: how are the true FRDs to be distinguished from the false ones.

## CONCLUSIONS AND RECOMMENDATIONS

Beneficial as the FRD system may sound, this study has showed that the system has inherent problems of blood safety. Family donations have become necessary, only because blood services are unable to recruit sufficient voluntary donors to meet blood demand. This in turn is due to inadequate investment in blood donor mobilization and recruitment. In the background of widespread unemployment, and pervasive poverty, and corruption, it is not surprising that altruism and morality may become blunted, and blood donation for money may become an attractive source of income for desperate people. If the practice of requesting relatives to provide donors is stopped, the false family donors will be out of business. This may cost patients higher fees for blood service, from which mobilization expenses may be partially recovered. The benefit will be a greater assurance of blood safety. The good news is that blood safety, and sufficiency is doable, without the FRD system, even in Africa. Some countries in Sub-Saharan Africa, through nationally organized, well-funded, and legally backed and regulated systems, have successfully made the transition to full VNRBD. Examples are the Republic of South Africa, Zimbabwe, Botswana, Uganda, Rwanda, and others.<sup>7</sup> School blood donation programmes,<sup>8-9</sup> Club/Pledge 25, which is an indigenous African creation,<sup>10</sup> and community,<sup>11</sup> and religious houses,<sup>12</sup> mobilization, are some of the strategies that have been found useful. Blood from voluntary donors is free, but it is costly to mobilize these donors, and to process the blood into safe products. In two separate surveys of the knowledge and attitudes of secondary school,<sup>13</sup> and

university graduates<sup>14</sup> about voluntary blood donation in Nigeria, the commonest reason given for non-donation was that: "I have never been asked." The bottom line, therefore, is the political and economic will by our governments, with or without external donor assistance, to invest more in blood safety and sufficiency.

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