Review Article

Blood Donation Practices, Motivators, and Barriers in Nigeria: A Narrative Review

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ABSTRACT

Achieving safe and adequate blood supply remains a major public health challenge in sub-Saharan Africa. In Nigeria, the majority of blood donations still originate from family replacement or commercial donors, exposing the system to safety and sustainability risks. Understanding the practices, motivators, and barriers to blood donation is critical for building a robust voluntary non-remunerated blood donation (VNRBD) system. This narrative review synthesizes peer-reviewed and grey literature from 2005–2024 focusing on Nigeria and related sub-Saharan contexts. Databases searched included PubMed, Scopus, and Web of Science, supplemented by reports from the Federal Ministry of Health (FMoH), WHO, and hospital records. Studies addressing donor characteristics, motivators, barriers, and programmatic interventions were reviewed and analyzed thematically. Blood donors in Nigeria are predominantly young males aged 20–40 years, with family replacement donors significantly outnumbering VNRBDs. Altruism, family obligation, and health check-ups were identified as key motivators, while barriers included fear of needles, cultural misconceptions, poor staff attitude, limited privacy, and logistical constraints. Interventions such as student-targeted campaigns, donor recognition programs, and mobile blood drives showed short-term improvements, but sustainability remains a challenge. Nigeria requires multi-faceted strategies to address donor misconceptions, improve donor care, and institutionalize VNRBD. Evidence highlights the importance of donor retention systems, iron supplementation, community engagement, and improved service delivery. Sustained investment and programmatic innovation are crucial to meeting WHO recommendations for safe blood supply.

Keywords: Barriers, Blood donation, Motivators, Nigeria, Transfusion safety, Voluntary non-remunerated donors

INTRODUCTION

Blood transfusion remains a cornerstone of modern health care, providing a life-saving intervention in emergency medicine, obstetric care, trauma management, and chronic disease treatment. Globally, it is estimated that more than 118 million blood donations are collected annually, yet the distribution is highly inequitable: nearly 40% of these come from high-income countries, which represent only 16% of the world's population[1]. The World Health Organization (WHO) has long emphasized that a safe and sustainable blood supply depends on comprehensive screening for transfusion-transmissible infections (TTIs)—including HIV, hepatitis B (HBV), hepatitis C (HCV), and syphilis—under quality-assured systems, and that blood should ideally be sourced from voluntary, non-remunerated blood donors

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(VNRBD), who consistently present the lowest risk of TTIs[1].

High-income countries have largely met this standard through robust, institutionalized donor systems supported by strong health infrastructure and effective public health campaigns. In contrast, low- and middle-income countries (LMICs), particularly in sub-Saharan Africa (SSA), continue to struggle with fragmented blood systems, insufficient donor recruitment, and dependence on family replacement or paid donors. These donor categories carry higher risks of TTIs and contribute to shortages in available safe blood, thereby undermining emergency care and health system resilience[2].

Nigeria exemplifies these challenges. As Africa's most populous country, it faces a disproportionately high demand for blood due to its heavy burden of obstetric hemorrhage, high incidence of road traffic injuries, endemic infectious diseases, and expanding surgical services. Estimates suggest that Nigeria requires about 1.8 million units of blood annually, yet voluntary donations account for less than 10%, leaving the system heavily reliant on replacement and commercial donors[3].

Hospital audits across Nigeria reveal that the majority of blood donations are still obtained from family replacement donors, with voluntary repeat donors forming only a small fraction of the pool[4]. The donor base is skewed toward young adult males, reflecting both gender norms and clinical eligibility patterns, as women are often excluded due to pregnancy, anemia, or cultural restrictions[5],[6]. While altruism and community obligation motivate some donors, persistent barriers—ranging from entrenched cultural myths and fears about blood loss, to poor donor care, weak infrastructure, and irregular blood drives—limit the development of a sustainable donor culture.

Against this backdrop, a deeper understanding of the motivators and barriers influencing blood donation in Nigeria is urgently needed. Such insight is crucial not only for developing effective recruitment and retention strategies but also for aligning with Nigeria's broader health system reforms and WHO's target of achieving 100% VNRBD. This narrative review synthesizes existing evidence on blood donation practices in Nigeria, examines key motivators and barriers, and situates these findings within national and regional contexts. The ultimate goal is to provide evidence-informed recommendations that can strengthen donor mobilization, optimize health system planning, and improve the safety and sustainability of blood supply in Nigeria.

MATERIALS AND METHODS

A comprehensive search of peer-reviewed and grey literature was conducted across PubMed, Scopus, Web of Science, Embase, CINAHL, and the Cochrane Library. Grey literature was obtained from WHO publications, the African Society for Blood Transfusion (AfSBT), Nigeria's Federal Ministry of Health reports, and donor agency technical briefs. The search period covered January 2005 to June 2024 to capture both recent and historical perspectives.

Keywords and Boolean operators combined terms such as blood donation, motivators, barriers, voluntary non-remunerated blood donation (VNRBD), Nigeria. Studies were eligible if they reported on blood donation practices, motivators, or barriers in Nigeria, included quantitative, qualitative, or mixed-method designs, focused on voluntary, replacement, or family/peer donation practices, and were published in English.

Exclusion criteria included commentaries, editorials, and studies not reporting primary data. All retrieved records were screened in two stages. First, titles and abstracts were reviewed to exclude irrelevant articles. Second, full texts were assessed against the inclusion criteria. Discrepancies were resolved by consensus among reviewers.

Key information was extracted using a standardized template, including study setting, population, sample size, type of donor studied, key motivators, barriers, and any intervention tested. For consistency, findings were grouped into motivators, barriers, and interventions. Methodological quality of included studies was assessed using the Joanna Briggs Institute (JBI) critical appraisal checklists for cross-sectional, qualitative, and mixed-method studies?Cite reference. Disagreements were

resolved.

Data were analyzed narratively and thematically. Findings were coded inductively into categories of motivators, barriers, and interventions. Within each category, studies were compared for convergence or divergence of findings. Frequency counts were used to indicate the most commonly reported motivators (e.g., altruism, family obligation) and barriers (e.g., fear, myths, logistical challenges). Where available, prevalence data (e.g., percentage of donors citing a given motivator) were summarized in tables. Results from qualitative studies were synthesized thematically to capture contextual drivers such as cultural beliefs or systemic inefficiencies. Quantitative data, where available, were integrated descriptively to strengthen the robustness of the narrative synthesis.

RESULTS

Studies consistently report that donors in Nigeria are predominantly male (70–85%) and aged 20–40 years[4,5,7]. Most donations are by family replacement donors, while voluntary non-remunerated donors (VNRD) account for less than 20% in tertiary hospitals[3,4]. Commercial donations, though discouraged, persist in informal systems[7]. Women are underrepresented due to physiological deferrals (low haemoglobin, pregnancy, breastfeeding) and cultural perceptions about blood donation[8]. Donor motivation in Nigeria is shaped by a mix of altruism, social obligation, and incentives.

Table 1 presents information on major motivators influencing blood donation in Nigeria. It captures three key elements: the motivator, the evidence source (including author and year of publication), and the documented impact of each motivator. Specifically, it outlines altruism, family or peer obligation, free health checks, recognition or awards, and institutional drives as identified motivators, alongside the respective studies that reported them and their corresponding effects on donor behavior. Altruism, described as the desire to help others, serves as a strong motivator for first-time voluntary non-remunerated blood donors (VNRDs). However, its influence tends to decline over time, making it less effective in encouraging repeat donations. Family or peer obligation drives individuals to donate primarily out of responsibility or social pressure from relatives and friends. This factor is particularly linked to replacement donations rather than voluntary ones. Free health checks, such as screening for HIV, hepatitis B, and blood pressure monitoring, motivate people especially students and young adults to donate, as they perceive the process as a means to access basic health services. Recognition and awards act as positive reinforcements for donors. When recognition programs are well-structured, they encourage repeat donations and foster a sense of pride and belonging among donors. Finally, institutional drives organized in schools and workplaces provide a convenient platform for blood donation, resulting in short-term increases in donation rates, although their effect on long-term donor retention is limited.

Table 1. Evidence and impact of Motivators and Barriers to Blood Donation in Enugu State

Motivator	Evidence	Impact
Altruism ("helping others")	Ugwu et al. (2021)[3]	Drives first -time VNRD, but less effective for retention
Family/peer obligation	Eze et al. (2022)[4]	Strong driver for replacement donation
Free health checks (HIV, HBV, BP)	Nwagha et al. (2020)[7]	Encourages students and young adults
Recognition/awards	Olawumi et al. (2023)[10]	Increases repeat donations when structured
Institutional drives (schools/workplaces)	Ezeudu et al. (2020)[5]	Short-term boost in donations

Table 2 shows that motivators are largely altruistic and situational, with altruism reported in 75% of reviewed studies, family/friend need in 40%, and community outreach (including faith-based drives) in 35%. However, these motivators require reinforcement through structural improvements such as regular drives, recognition programs, and improved donor access, which were only reported in 20–25% of studies. Barriers are divided between psychological/cultural factors and system-level inefficiencies. Fear of needles or perceived weakness was cited in 60% of studies, while myths

and misconceptions such as beliefs about infertility or occult practices appeared in 55%. System inefficiencies were also prominent: poor infrastructure and long waiting times were reported in 35%, negative staff attitudes in 30%, and irregular donation drives in 25%. Addressing both sets of challenges simultaneously is therefore critical for sustainable improvement in blood donation practices in Nigeria State.

Table 2: Frequency of reported motivators and barriers from reviewed studies in Nigeria

Category	Factor	Frequency of Report (n=20 studies)	% of Studies Reporting
Motivators	Altruism (saving lives)	15	75%
	Health benefits (screening, wellness)	10	50%
	Family/friends in need	8	40%
	Peer/faith-based influence	7	35%
	Incentives (tokens, recognition)	4	20%
Barriers	Fear of needles/weakness	12	60%
	Myths and misconceptions	11	55%
	Lack of awareness	9	45%
	Long waiting times/poor infrastructure	7	35%
	Negative staff attitude	6	30%
	Irregular donation drives	5	25%

DISCUSSION

The landscape of blood donation in Nigeria illustrates the complex interplay of individual, cultural, institutional, and systemic challenges that constrain progress toward achieving a safe and sustainable blood supply. A heavy dependence on family-replacement donors continues to hinder advances toward voluntary non-remunerated blood donation (VNRD), while women remain significantly underrepresented due to sociocultural myths, physiological factors such as anemia, and systemic biases in donor recruitment. In addition, gender norms and religious perceptions often shape attitudes toward donation some viewing blood as sacred or limited in quantity further reducing the female donor pool. The predominance of young male donors, although advantageous for immediate supply, poses a long-term sustainability risk, as this demographic may lack the consistency and commitment required for repeat donations unless targeted with deliberate retention programs.

Altruism remains one of the most frequently cited motivators for donation; however, in Nigeria, altruism alone is often insufficient to ensure repeat donations due to the absence of enabling structural and emotional reinforcements. Donors frequently encounter discouraging experiences—such as long wait times, unfriendly staff attitudes, inadequate post-donation care, and lack of feedback on how their donation helped save lives—which collectively erode their motivation to return. Furthermore, misconceptions surrounding blood donation remain deeply rooted: widespread fears about physical weakness, infertility, spiritual harm, and exploitation persist, particularly in rural and low-literacy populations. These myths are compounded by a general mistrust of health institutions and low public awareness of the continuous need for blood, especially for emergencies and chronic medical conditions.

On the supply side, systemic inefficiencies continue to impede donor recruitment and retention. Persistent staff shortages, inadequate training of blood service personnel, and weak logistics and data

management systems all contribute to inefficiency and donor dissatisfaction. Evidence across sub-Saharan Africa indicates that structured donor recognition programs such as certificates, badges of honor, and token incentives have a measurable impact on donor retention and loyalty. Such programs foster a sense of belonging, pride, and social recognition among repeat donors. Similarly, developing centralized donor registries linked to digital communication systems through SMS reminders, mobile apps, or community blood drives—can enhance engagement and retention while providing real-time tracking for blood services.

In contexts where cultural and religious barriers remain entrenched, culturally sensitive approaches are crucial. Faith-based organizations, traditional leaders, and community influencers can play pivotal roles in demystifying blood donation, particularly when integrated into health education and outreach initiatives[69]. School-based and workplace campaigns also offer significant opportunities for shaping early positive attitudes and normalizing voluntary blood donation among the youth population. Collaboration between educational institutions and the National Blood Service could institutionalize periodic donation drives, fostering a culture of civic responsibility.

Nigeria could further strengthen its system by investing in donor health and welfare programs. Routine donor counseling, nutrition support, and iron supplementation have been shown to reduce donor deferrals and encourage repeat donations[7]. Moreover, implementing digital record systems to monitor donor health over time would not only ensure safety but also help identify and retain healthy, low-risk donors. Partnerships between government agencies, NGOs, and private organizations could provide the resources and advocacy needed to sustain these efforts.

Aligning these interventions with the WHO's global goal of achieving 100% voluntary, non-remunerated blood donation will ensure Nigeria's blood services remain evidence-based, ethically grounded, and globally benchmarked[1]. Ultimately, transforming the current donor landscape will require a coordinated, multi-sectoral approach—combining education, donor recognition, community engagement, donor health interventions, and systemic strengthening. Such an integrated framework holds the promise of building a more resilient, equitable, and sustainable blood supply system that can reliably meet Nigeria's growing demand for safe blood in the years ahead.

Limitations

This is a narrative (not systematic) review focused on available published studies and program reports; publication bias and heterogeneity in study methods limit generalizability. Some Nigeria data derive from single-center or student surveys and may not fully reflect population-level patterns. More operational research with longitudinal follow-up of donor cohorts is needed.

CONCLUSION

Nigeria's blood donor system remains heavily dependent on replacement donors. Strengthening voluntary, repeat donation requires a combination of community engagement, improved donor experience, donor retention systems, and clinical supports such as iron supplementation. Targeted investment and policy support are essential for sustainable safe blood supply.

Recommendations

As this review has shown that, sustainable improvement in blood donation in Nigeria requires more than short-term campaigns. Establishing a centralized donor registry with reminder systems, strengthening recognition and care through iron supplementation and efficient services, and scaling up coordinated mobile drives are therefore critical. Combined with robust education to dispel myths and supportive policies that prioritize voluntary non-remunerated donation, these multi-component strategies offer the best pathway to meeting WHO targets and securing a reliable blood supply.

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