

# Female gender participation in the blood donation process in a resource poor settings: Case study of Sokoto in North Western Nigeria.

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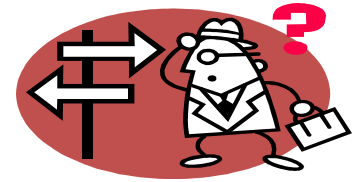
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# Statement of the problem



- Globally, approximately 80 million units of blood are donated each year. Of this total, 2 million units are donated in SSA.
- The need for blood transfusions is great because of maternal morbidity, malnutrition, and a heavy burden of infectious diseases such as malaria and HIV.
- 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 and other factors such as pregnancy & breastfeeding further restrict many women from donating blood in Nigeria

# **Aims and Objectives**

**The present study was designed to investigate the level of female gender participation in the blood donation process in Sokoto, North Western Nigeria.**

# Study Design

**This retrospective study was carried out among 14,956 voluntary and family replacement blood donors who visited the blood bank in Usmanu Danfodiyo University Teaching Hospital for blood donation purpose between 2010 and 2013.**

## Statistical analysis

- Data was collected using excel spread sheet and entered into a statistical software; SPSS (version 11; SPSS Inc., Chicago, IL).
- Data were expressed as mean  $\pm$  standard deviation. Comparisons between male and female blood donors were made using the Student's t-test for parametric data and the Mann-Whitney test for non-parametric data.
- Descriptive analyses of percentages of categorical variables were reported.
- A p-value of  $< 0.05$  denoted a statistically significant difference in all statistical comparisons.

## Subjects and Method

- **Subjects for this retrospective case study included 14,965 blood donors.**
- **Mean age and age range of blood donors was  $27.1 \pm 8.18$  and 18-50 years respectively.**
- **The total number of blood donors from January 2010 to July 2013 was 14,965.**
- **Donors were made up of 14,871 males (99.4%) and 94 females (0.64%).**

# Results

- The number of male donors was significantly higher than that of female donors ( $p= 0.0001$ ).
- The distribution of male and female donors yearly from 2010 to 2013 was (2,916, 4,787, 4687, 2,481) and (25, 28, 16 and 25) respectively.
- Of the total number of blood donors, a significant 14,891 (99.5%) were family replacement donors while 74 (0.50%) were voluntary non-remunerated blood donors (0.0001).
- Out of the 74 voluntary non-remunerated donors, 18 were females while 56 were males.
- There was a male gender bias in the probability of a donor being voluntary non-remunerated.
- Of the female donors, 18/94 (19.1%) were voluntarily non-remunerated compared to 56/14,871 (0.38%)  $p=0.003$ .

# Discussion

- Our study indicates that there are insufficient female blood donors in Nigeria
- We observed a male gender dominance in the blood donor process. Our findings are in agreement with most studies in Africa (Francophone and Anglophone) which reported a male dominance in blood donation programs (61% in Togo), (71.2% in Burkina Faso) and (90% in Ghana. Survey in Central, Western, and Eastern Francophone African regions indicated < 30% females in their donor population. [17]
- Our finding is in agreement with previous reports among blood donors in India which indicated that female gender is less disposed to blood donation. [19]
- Our finding is at variance with findings in some developed countries. In 2003 female blood donors represented 40% of the blood donor population in Austria, 49.7% in France, 50% in Norway and 55% in Great Britain. [20] Similarly, Greece and Italy seem to be the only European countries in which the percentage of female donors is about 33%. [21] In Spain, 46% of the blood donors are women, [22] in Portugal 43%, [23] in Belgium 45.4%, [24] in the Netherlands 50%, [25] in France 50%, [26] and in Finland 55%. [27]



# Discussion

- The reason for this male gender predominance in the blood donation process in Sokoto may be based on a number of factors which include erroneous beliefs that bothers on religion and culture and challenges associated with donor education.
- Religion can be a major motivating factor in highly religious communities. A previous report in Saudi Arabia an Islamic nation, indicated that about 91% of the donors believed that blood donation is a religious duty. [28]
- This duty is based on the religious ruling [“fatwa”] from the most respected religious cleric, the late Sheikh Abdul Aziz Bin Baz, who advised that it is the duty of a Muslim to donate blood to save the life of a needy patient.
- In contrast, a Nigerian study, [29] found that 20.3% of their study population would not donate blood, and curiously enough, will not accept blood transfusion due mainly to religious beliefs.

# Discussion

- Similarly member of some religious groups such as the Jehovah's witnesses frown against donation of blood. [30-31].
- Religious beliefs can have either a positive or negative motivating effect on blood donation.
- Religion can potentially improve the safety of donated blood. Blood donations collected at places of worship has greater chance of attracting donors free from transmitting HIV infection [32].
- Islamic religion recommends the donation of human blood to save life. Saving human life and helping others against affliction are always enjoined [33].
- In the holy Quran, Allah says, "Whoever kills a soul unless for a soul or for corruption [done] in the land – it is as if he had slain mankind entirely? And whoever saves one – it is as if he had saved mankind entirely [34].
- Evidence from Iran, an Islamic country indicated that after altruism, Islamic religious beliefs are the most frequent positive motivation for blood donation among Iranians [35].

# Discussion

- In Nigeria, girl child education is a big problem. Poverty is the key problem to girls' education.
- Several other factors including; young female adult lack of access to education, employment opportunities and personal income, lack of awareness concerning girl child education, poor supply of teachers, especially female teachers or girl-friendly learning environment, socio and economic factors and lack of essential facilities and materials all militate against girl child education in Nigeria.
- There are several reasons for the low female gender participation in the blood donation process in developing compared to developed economies.
- Low level of education particularly among women may be a key factor.

## Discussion

- **Better educated people have greater access to information than those who are illiterate or uneducated and they are more likely to make well informed decisions and act on information received.**
- **Better educated women generally have better jobs and greater access to money and other resources which can help them support a healthier lives.**
- **Cultural traditions such as forced marriage, domestic violence against women and erroneous belief that women's role is essentially to look after the home and the children.**
- **Women poor access to education and financial resources and women's economic dependence on men, older men preference for younger women and female gender mutilation all contribute to women lack of power [38] .**

# Discussion

- Blood donation rates vary according to social factors such as ethnicity, gender, education, income, occupation, religion and age [39-40].
- Several factors including donation status, age, gender and level of educational attainment play a significant role in the decision to donate blood.
- Fear about blood donation is more common in younger compared to older adults, in women than men and in those with lesser income [41].
- Similarly, previous report among female college students indicates that female college students are willing to donate blood if given convenience and support by their institution and that educational campaigns can potentially increase knowledge regarding the safety of the blood donation [42,43]
- In most settings in Africa there are erroneous belief that facilitate male gender dominance in the blood donation process including that men are healthier than women coupled with the general belief that women make monthly blood donations to nature through their menstrual cycle [20, 44].

# Discussion

- There are other physiological factors that can also play a role in female gender participation in the blood donation process.
- Female gender has been found to be associated with various deterrents to blood donation. Indeed, women more frequently indicated medical reasons, ailments or difficult veins as important barriers to giving blood [45]
- Among premenopausal female blood donors, 31.7% had depleted iron reserves and 3.3% iron deficiency anaemia [46].
- Previous report indicates that whole blood donation can potentially harm menstruating females [47].
- Other factors such as pregnancy and breastfeeding further restrict many women from donating blood in SSA.
- Women were more likely to be declared temporary ineligible to donate blood for medical reasons; predominantly due to low levels of iron or low body weight.
- Iron deficiency is frequent, particularly in female donors and frequent donors.
- Previous report has recommended that iron supplementation may be indicated for female donors particularly those with low levels of iron [51-55].

# Discussion

- We observed that blood donation was essentially family replacement based rather than being voluntary non-remunerated.
- Voluntary, non-remunerated blood donation is the cornerstone of a safe and adequate national blood supply that meets the transfusion requirements of all patients.
- The collection of blood only from VNRD is an important measure for ensuring the safety, quality, availability, and accessibility of blood transfusion [56].
- Several prejudices and misconceptions affect the principle of altruism in Sub-Saharan Africa, including cultural differences and lack of information.
- Studies conducted in Burkina Faso, South Africa, Togo and Nigeria indicate that blood donors have unfounded fears: fear of knowing one's HIV serologic status, fear of being infected with diseases, and the erroneous belief that donating blood can decrease one's libido, cause weight loss, cause high blood pressure, or even lead to death [57-59] .

# Discussion

- FRD remain the main source of blood in SSA because it costs less to procure and fits well with the African culture of extended family.
- The mentality of altruism through the voluntary donation of blood is not as accepted in SSA as in most developed countries.
- A FRD is one who gives blood when it is required by a member of the donor's family or community.
- FRD put relatives under intense strain & undue pressure to give blood, even when they know that donating blood may affect their own health or that they may be potentially at risk of transmitting TTIs [60-61] .
- The WHO recommends that FRD should be phased out due to their association with an increased risk of TTIs and that a country's transfusion needs cannot easily be met by relying solely on FRD [62-63].
- Blood donated by certain relatives ( spouses) of women of child-bearing age, can put their wives/partners potentially at risk of producing alloantibodies to clinically significant RBC antigens that the developing foetus may have inherited from the father but which the wife lacks.



## Conclusion and Recommendations

- This present study has shown a low rate of female gender participation in the blood donation in Sokoto North Western Nigeria.
- We observed a male gender dominance in the blood donor process.
- There is need to develop an evidence-based educational, cultural and religious- focused and friendly interventions that encourages female donation of blood.
- There is need to educate the female population on the importance of blood donation as well as address the female gender negative perceptions against blood donation.
- There is also the need for appropriate motivational campaign involving community leaders, religious leaders and scholars to encourage female blood donations.

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# Questions



**Many thanks  
for listening!**

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