

Original Research Article

FROM ONE-TIME TO LIFELONG GIVING: A QUALITATIVE INQUIRY INTO BLOOD DONORS' PERCEPTIONS

ABSTRACT

Blood donation stands as a paramount practice crucial for preserving human lives, playing a pivotal role in saving numerous lives annually. A proficient approach to address the demand for a secure blood supply hinges significantly on enlisting and retaining blood donors. In light of this, the present investigation aimed to evaluate the viewpoints and sentiments of voluntary blood donors concerning the concept of recurrent blood donation within the Zanzibar context. The research adopted a cross-sectional design, focusing on blood donors who have generously contributed blood on multiple occasions. The selection of participants was facilitated through a quota sampling technique. A total of 31 comprehensive interviews were administered among these recurring blood donors. Subsequently, a thematic analysis method was employed to dissect the collected data. The analysis revealed five overarching themes. The majority of respondents expressed a positive outlook on the notion of recurrent blood donation, although a subset cited familial and/or social reasons for their recurring contributions. Notably, the study discerned that Zanzibar's blood donors exhibit affirmative attitudes toward recurrent blood donation, predominantly driven by a spirit of altruism. Furthermore, fostering a greater influx of recurrence blood donors necessitates fostering community involvement, education, and sensitization efforts. These endeavors are pivotal in ensuring a consistent pool of blood donors committed to making recurring contributions.

Keywords: *Blood Donor Behavior, Blood Supply, Donor Satisfaction, Blood Transfusion, Donor Experience.*

Introduction

Blood transfusion is a critical medical procedure involving the transfer of blood or blood components from a healthy donor to a patient in need. This procedure is essential for preserving human lives, significantly contributing to the annual rescue of numerous individuals (1). It plays a pivotal role in various medical scenarios, including surgeries, trauma cases, anemia, and blood-related disorders. The primary goal of blood transfusion is to restore and maintain the patient's blood volume, oxygen-carrying capacity, and clotting factors. This intervention is crucial when the body's own ability to maintain these functions is compromised (2–4). Blood transfusion also

assumes a pivotal role in maternal and child healthcare and proves indispensable during instances of human-caused calamities (5,6).

The history of blood transfusion dates back centuries, with early attempts often resulting in adverse reactions due to a lack of understanding about blood types and compatibility. The discovery of blood types by Karl Landsteiner in the early 20th century was a watershed moment for transfusion medicine. Blood types, particularly the ABO and RhD systems, play a crucial role in determining compatibility between donor and recipient blood, reducing the risk of transfusion reactions. Rigorous testing and cross-matching are now standard procedures to ensure a safe and effective transfusion process (7,8).

Modern blood transfusion practices are characterized by stringent protocols aimed at maintaining patient safety. Before a transfusion takes place, both the donor's and recipient's blood are carefully tested for compatibility to prevent adverse reactions. Transfusions are typically administered through intravenous lines, and medical professionals closely monitor the process for any signs of adverse reactions, such as fever, allergic responses, or more serious complications like transfusion-related acute lung injury (TRALI) or hemolytic reactions (9,10).

Voluntary blood donation plays a pivotal role in maintaining a steady and safe blood supply. Blood banks and donation centers rely on the generosity of donors to ensure an adequate reserve of blood products. These donations undergo careful screening for infectious diseases to minimize the risk of transmitting infections through transfusions. With the advancement of medical technology, donated whole blood can be separated into its individual components (red blood cells, plasma, platelets, etc.), allowing medical professionals to administer the specific component needed for the patient's condition (11). Ensuring the security and adequacy of donated blood necessitates an integrated approach, with the recruitment of a sufficient number of safe blood donors posing a pressing challenge. The scarcity of available blood supply is predominantly attributed to the growing demand coupled with a decline in voluntary blood donors (12).

A significant milestone was reached in 1975 with Resolution 28.72 of the Twenty-eighth World Health Assembly, which proposed that each member state formulate a national blood policy to promote voluntary non-remunerated blood donation. However, limited coordination and fragmented systems have led only 35% of the 192 member states to develop comprehensive policies and regulations. These policy frameworks, including a national blood policy and plan,

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constitute pivotal components of a streamlined, cost-effective, and sustainable national blood program (13). While many developed and ~~certain-some~~ transitional and developing nations have successfully implemented evidence-based strategies for ensuring blood safety and accessibility, there remains a gradual pace of adoption for these strategies in several countries (14).

The significance of frequent blood donation in establishing a commitment to this cause is notable, but the challenge lies in encouraging first-time donors to become recurrence contributors. Challenges hindering recurrence blood donation encompass experiences of fainting during the process, limited accessibility to convenient donation centers, geographical distance from donation sites, as well as considerations of social responsibility, altruism, education, and awareness about the importance of recurrence blood donation (15,16). Creating an environment with minimal disruptions and favorable operational hours has proven influential in recruiting and retaining recurrence donors (17). While it's understood that attitudes and perceptions play a role in influencing blood donation, there remains a gap in understanding how these factors specifically impact the propensity of blood donors to become recurrence contributors. Attitudes have been recognized as motivational catalysts in recruiting new blood donors, and raising awareness about the perpetual need for blood could potentially encourage regular donation (12,18).

Despite its critical role in medicine, blood transfusion is not without challenges. Ensuring a sufficient and safe blood supply can be challenging, especially during times of crisis or in regions with limited access to healthcare resources. Additionally, ongoing research focuses on improving transfusion outcomes, exploring alternatives to traditional blood transfusion, and reducing the risk of complications. Overall, blood transfusion stands as a testament to medical advancement, exemplifying how a deep understanding of science and careful procedures can save countless lives. Therefore, this study aims to assess blood donors' attitudes and perceptions toward lifelong donation in Zanzibar.

METHODS

Research Method and Location: This study adopted a cross-sectional design, employing a qualitative methodology to fulfill its fundamental objectives. The research focused on conducting in-depth interviews with blood donors, aiming to evaluate their perspectives and beliefs regarding recurring blood donation in Zanzibar.

Participant Selection and Study Scope: The study encompassed voluntary blood donors aged 18 years and older, who had contributed on multiple occasions within the past three years. To ensure representative diversity, the participants were categorized based on geographical districts, and subjects were purposefully selected in accordance with pre-established quotas. Ultimately, 31 individuals were chosen to participate in the interviews.

Approach to Data Collection: A comprehensive in-depth interview protocol was developed and tested through pilot sessions involving various voluntary blood donors. The intention was to validate that the protocol accurately measured the intended concepts. The interview guide encompassed inquiries about the attitudes and viewpoints of voluntary blood donors regarding blood contribution. Moreover, it explored participants' perceptions, as well as any obstacles that discouraged them from engaging in recurrence blood donation. The principal investigator facilitated data collection, with all interview sessions being recorded for accuracy. In total, insights were gathered from 31 voluntary blood donors, reaching a saturation point in terms of data comprehensiveness.

Ethical Considerations: Prior to conducting the study, ethical clearance was obtained from several key entities, including the Second Vice President's office in Zanzibar, the Zanzibar Health Research Institute (ZAHRI), and the Zanzibar Blood Transfusion Services. Additionally, formal permission was sought from these organizations to proceed with the study. Each participant involved in the study was provided with a clear explanation of the study's purpose, and their informed consent was obtained before their participation.

Ensuring Data Quality: Several measures were taken to uphold the quality of the data collected. Firstly, the interview protocol was subjected to a pilot test involving distinct voluntary blood donors. This step helped in refining the interview process. Secondly, the interview guide underwent a process of translation and back-translation, ensuring that the core meaning of the content was retained accurately. Ultimately, the interviews were conducted in the Swahili language. Thirdly, a commitment to confidentiality was maintained, and all data files, including the final edited English transcriptions and audio recordings, were securely stored. This comprehensive approach helped to maintain the integrity of the collected data.

Data analysis: The qualitative data collected in this study underwent analysis through a thematic approach using NVivo which is Computer Assisted Qualitative Data Analysis Software (CAQDAS) developed by QSR International. For each specific objective, sub-themes were

identified, which were then amalgamated to shape overarching core themes. This systematic approach was employed after data collection to mitigate any potential interviewer bias.

The textual data was methodically segmented into smaller interconnected units that held meaningful relevance. Themes sharing commonalities were subsequently clustered to form cohesive units. The interpretation of these themes was grounded in psychological contexts, and this interpretation was then employed as factual evidence.

To ensure the robustness of the findings, the transcripts were carefully reviewed once more, affirming the data's accuracy and validity. In addition, information derived from field notes played a supportive role, assisting in clarifying emerging concepts during the course of thematic analysis. This comprehensive methodology helped to extract nuanced insights from the data and ensured a credible analytical process.

RESULTS

The study encompassed a total of thirty-one in-depth interviews, with the participants exhibiting a diverse range of characteristics. The average age of the participants was 34.5 years, signifying a varied age distribution within the cohort. Remarkably, all of the study participants unanimously identified themselves as Zanzibaris, highlighting a strong local representation. It's worth noting that the participants were exclusively drawn from the ranks of full members of the blood transfusion services in Zanzibar, establishing a common thread of affiliation and experience within the context of the study. This alignment in their organizational involvement ensured a cohesive foundation for exploring the research objectives within the distinct backdrop of Zanzibar's blood transfusion landscape.

Themes

The results are summarized into five core themes that were developed after data collection as shown in Table1.

Theme	Sub-theme
Blood donations as 'a good thing'	Benefit to others Something good to volunteer Sacrifice or charity
Blood donation is a "matter of help" for those in need	Help the community/ Country Family comes first
Donation disincentives	Fear, anxiety, and other concerns Lack of knowledge and awareness
Giving blood means fostering life	Blood donation means to save lives and prevent

	death
Altruism act as a motivating factors	The need for others

Table 1: Seven core themes and sub-themes emerged from the data

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Theme 1: Blood donations as a good thing

Benefit to others

Blood holds a paramount significance in sustaining human life, establishing it as a critical resource. Consequently, among the blood donors, a prevailing consensus emerged that blood donation stands as a potential lifesaver for patients. Furthermore, a prevailing sentiment shared by the majority of participants was that blood donation was an inherently positive and commendable act. This perspective was eloquently captured by one of the blood donors who stated:

"... I firmly believe that the blood I contribute serves as a vital and irreplaceable lifeline for those patients who find themselves in the throes of dire need. Our unwavering commitment to donate emerges as a beacon of hope, assuring that even in the most challenging times of crisis, those individuals necessitating urgent assistance will not be left in a state of vulnerability, devoid of the essential recourse that our contributions provide..."[P16, 37 years old]

This statement encapsulates the collective understanding among donors that their selfless contributions play a pivotal role in bridging the gap and providing crucial aid to patients in critical conditions.

Something good to volunteer

In the context of this study, it emerges that the participants share a collective belief that blood donation is an inherently altruistic act, one driven by a genuine desire to contribute and volunteer for the betterment of others. This perspective underscores the idea that when an individual requires the life-giving gift of blood, it should be readily provided, without any hesitations or restrictions, as people are willingly stepping forward to offer their invaluable assistance for the greater welfare of society. This selfless dedication to the cause is underpinned by the understanding that blood donors extend their support without seeking monetary compensation or material rewards in return. Participant P29's account aptly encapsulates this sentiment:

"...Initially, my involvement with blood donation was advised due to the detection of an excess amount of blood in my system that surpassed the recommended levels. However, subsequent donations were motivated purely by my voluntary decision to make a positive impact on the community at large..."[Participant 29, 34 years old]

Participant P29's narrative exemplifies the transformation from a medical recommendation to a voluntary commitment to serve the community. This stance reflects the broader consensus among participants that blood donation is a voluntary endeavor motivated by goodwill and the collective welfare of society, emphasizing the genuine spirit of contribution without any expectation of payment or material gains.

In addition, Participant P21 shared his perspective, reinforcing the prevailing sentiment within the study:

"...For me, blood donation is more than just a medical act. It's a chance to be part of something greater, a chance to give life where it's needed most. The idea that there's no expectation of payment or rewards, it's just people stepping up to help people, that's what truly resonates with me..."[Participant 21, 26 years old].

These words mirror the broader sentiment observed among the participants. The notion of selflessness, of individuals willingly coming forward to contribute without seeking any form of recompense, shines as a unifying principle. This outlook signifies that blood donation transcends mere medical necessity, becoming a testament to human compassion and unity for the betterment of those in need.

Sacrifice or charity

The significance of blood donation, encompassing the act of preserving someone's life, reverberates as a supreme gesture in the realm of humanity's service to one another. This act of giving stands as an embodiment of the utmost assistance, underpinned by its self-sacrificial nature. Among the participants, a profound conviction takes root, holding that donating blood serves as a bestowed blessing that not only elevates their own morale but also intensifies their dedication to regular blood donation. This sentiment finds resonance in the account of participant P6, who eloquently expressed:

"...The primary reason motivating my engagement in blood donation arises from possessing the necessary resources to contribute, coupled with the acute awareness of the community members' needs. This experience embodies an act of self-sacrifice, as I willingly devote a portion of myself to provide essential aid to those who stand in need..." [Participant 6, 31 years old].

While the sentiment of patriotism nurtures the desire to donate blood, participants go beyond this sentiment, nurturing a profound belief that extending help to those in need invokes divine blessings. This spiritual dimension is expressed succinctly by participant P18:

"...The driving forces behind my blood donation journey are twofold. Firstly, I hold a deep love for my country, and secondly, I recognize the shared humanity that connects me to those for whom I contribute. My act of donation is imbued with the belief that God's blessings will be bestowed upon me in return. This commitment is heartfelt, for we donate not in pursuit of material rewards, but rooted in our faith and conviction. This is why we engage in blood donation – a reflection of the patients in hospitals who struggle to afford the blood they require for transfusion..." [Participant 18, 40 years old].

This reflection encapsulates a profound synergy between their love for their country and their compassion for fellow human beings. This duality is seamlessly integrated with their spiritual beliefs, where the act of donation transcends mere altruism, becoming an avenue for divine grace. The notion of contributing without expecting material gains emerges as a testimony to their faith, and this deep sense of purpose fuels their enduring commitment to recurrence blood donation. Through their stories, both P6 and P18 illustrate the intricate interplay of motivations, resonating with the broader understanding that blood donation holds a dual significance – a tangible lifeline for patients and a sacred act that invokes blessings through selfless service.

Theme 2: Blood donation is a “matter of help” for those in need

Help the community

Among the blood donors, there exists a candid acknowledgment that blood donation signifies an act of community support grounded in principles of charity. This perspective underscores the belief that contributing blood is a fundamental means of extending aid on the basis of altruism, a compassionate gesture aimed at uplifting the community at large. Additionally, [certain](#) [some](#) donors espouse a profound sentiment that the provision of blood should transcend

considerations of the recipient's identity, emphasizing an unwavering commitment to providing assistance to anyone in need. This sentiment is aptly captured by participant P2:

"...Certainly, there are tangible benefits inherent in blood donation. Consider, for instance, individuals who experience accidents and subsequently suffer substantial blood loss. Without the replenishment of lost blood through transfusion, the risk of fatalities looms large due to severe anemia and its consequences..." [Participant 2, 33 years old].

Participant P2's words encapsulate the life-saving impact of blood donation, highlighting the vital role it plays in averting potential tragedies. Beyond the individual benefit, the act of donating blood extends its reach to the community, embodying a form of charity that embodies the collective welfare. This outlook reflects the spirit of unity and shared responsibility, where the well-being of every member is upheld through selfless contributions.

Family comes first

A prevailing sentiment among certain blood donors underscores the awareness that the supply of blood is inherently limited. Consequently, it is observed that donors often step forward to contribute blood primarily when their family members or friends require transfusions. For these informants, the call of family needs takes precedence over the needs of others, reflecting a deeply rooted connection and responsibility. This perspective implies that individuals who might otherwise not have donated blood become willing participants when the well-being of their loved ones is at stake. This sentiment is succinctly expressed by Participant P17:

"...In my view, blood donation serves as a form of preparation. By contributing, I'm essentially building a reserve. If ever a patient – perhaps even someone close to me – requires blood, my contribution ensures a ready solution is at hand, simplifying the process of aiding them..." [Participant 17, 39 years old].

Participant P17's reflection illustrates a strategic viewpoint, where blood donation is perceived as an act of proactive preparation to address potential future needs. This approach aligns with the desire to offer immediate help to family members or friends when the situation arises. Similarly, participant P8's perspective reinforces this stance:

"...Furthermore, my motivation stems from the assurance that if any family member of mine requires blood, it can be readily accessed without unnecessary difficulties. This sense of security

is what drives me, particularly considering my role as a father with familial responsibilities..."
[Participant 8, 35 years old].

Participant P8 echoes the notion that blood donation acts as a form of insurance, ensuring that their family's needs are met without causing distress. Both participants P17 and P8's views underscore the influence of familial bonds and responsibilities, indicating that the readiness to donate blood is often kindled by the desire to guarantee prompt and uncomplicated support for their loved ones.

Theme 3: Donation disincentives

This survey has illuminated two notable drawbacks that warrant consideration; these pertain to motivation and the general level of knowledge and awareness.

Lack of incentives

A significant factor hindering some blood donors from engaging in recurrence blood donation is the lack of motivation, often manifested in the absence of incentives such as gifts or monetary rewards. Participant P4 aptly captures this sentiment:

"...While I hold a strong attachment to my Tanzanian identity and love for my country, I recognize that ~~certain~~ some individuals require material incentives like money or gifts to motivate them to donate blood. The absence of such motivation, particularly financial, serves as a deterrent, causing some donors to discontinue their blood donation efforts. Moreover, anxiety and apprehension surrounding the blood donation process can further contribute to a lack of recurrence blood donation..." [Participant 4, 26 years old]

Participant P4's narrative underscores the complexity of motivations for blood donation, revealing that while some are intrinsically driven by national loyalty, external incentives like monetary rewards play a role for others. The absence of such extrinsic motivators can dissuade individuals, particularly when coupled with the anxiety and fear associated with the blood donation process. This multifaceted dynamic highlights the need for a comprehensive approach to addressing the issue of motivation to ensure a sustained and consistent donor base.

Lack of knowledge and awareness

A deficiency in general knowledge and awareness regarding the pressing demand for blood emerges as another drawback, casting a shadow on recurrence blood donation. This lack of

awareness often results in some donors being oblivious to the critical need for blood transfusions, as highlighted by Participant P12:

"...~~Certain~~ some individuals refrain from repeating blood donation due to their limited understanding of the significance of blood donation. It appears that their lack of knowledge about the imperative nature of blood transfusions is a key factor. Once this awareness is instilled, there's potential for increased recurrence of blood donation. Additionally, there's a misconception that blood donation might involve monetary compensation or receiving gifts..." [Participant 12, 23 years old].

Participant P12's account underscores the pivotal role of education in reshaping perceptions and behavior, indicating that informed individuals are more likely to engage in recurrence blood donation. Reinforcing this perspective, Participant P20 offers an insight:

"...I hold the view that there's a gap in knowledge and awareness, a gap that can be bridged through regular reminders. Human nature demands consistent prompts to sustain an understanding of the importance of donating blood. By doing so, individuals can more readily appreciate the value of their contributions..." [Participant 20, 35 years old].

Participant P20's assertion aligns with the idea that a continuous and deliberate effort to remind individuals can lead to enhanced awareness and comprehension of the pivotal role blood donation plays. The notion of regular reinforcement as a means to address this knowledge gap resonates, suggesting that consistent reminders can help shape attitudes and perceptions, ultimately fostering a culture of sustained recurrence of blood donation.

Theme 4: Giving blood means fostering life

Blood donation means to save lives and prevent death

The findings of the study underscore a prevailing positive perception among the majority of recurrence of blood donors, serving as a driving force that fuels their commitment to engage in this noble act. This sentiment is vividly expressed by participant P24:

"...I extend an earnest call to all Tanzanians, urging them to flock to the blood bank in large numbers to donate blood. The significance of this gesture lies in its potential to safeguard the lives of our fellow citizens, a sentiment that resonates deeply within me..." [Participant 24, 36 years old].

Participant P24's words reflect the collective understanding among recurrence donors that their contributions directly contribute to the preservation of lives within their community. This inherent positivity not only solidifies their resolve to donate blood but also inspires them to advocate for this cause among their compatriots.

Additionally, the pivotal role of blood donation in preventing avoidable deaths emerges as a central theme. Participant P16's perspective powerfully encapsulates this notion:

"...The act of repeat blood donation holds paramount significance – it stands as a bulwark against preventable deaths. For instance, consider individuals who endure accidents and sustain significant blood loss. The absence of timely blood transfusions to replace the lost volume can lead to fatal outcomes due to severe anemia..." [Participant 16, 29 years old].

Participant P16's sentiment echoes a universal truth that blood donation can be the crucial determinant between life and death, especially in emergency situations. The understanding that their contributions directly contribute to averting such tragic outcomes significantly amplifies the motivation for recurrence of blood donation among participants.

Theme 5: Altruism acts as a motivating factor

The need for others

Participant P27's perspective sheds light on a significant motivating factor that spurs individuals to donate blood – the recognition of [certain some](#) groups as highly vulnerable and in urgent need. Pregnant women, children under five, and other patients, including accident victims, emerge as the most critical demographic that deeply influences individuals to engage in blood donation. Participant P31 aptly captures this sentiment:

"...My conviction to donate blood has been profoundly shaped by the understanding that my contributions hold the potential to aid mothers, pregnant women, young children, and those who find themselves victims of accidents. These individuals are in dire need of blood transfusions, and this awareness propels me to play a part in their well-being..." [Participant 31, 28 years old].

Participant P31's words underscore the gravity of the situation faced by these vulnerable groups, infusing their contributions with a sense of purpose and urgency.

In addition, the view from Participant P22 reinforces the theme of blood donation being influenced by the desire to help vulnerable groups:

"...My steadfast dedication to the cause of blood donation is intrinsically rooted in a profound understanding of the potential transformative effect it can have on the lives of some of the most vulnerable members of our community. The resonance of this awareness is particularly strong when it comes to pregnant women, young children, and other individuals who find themselves in critical need, such as those affected by accidents. Recognizing that my blood could serve as the vital lifeline that stands between them and dire circumstances serves as an unwavering motivation that impels me to engage in this act of compassion consistently and without hesitation. It's this potent realization of the real-world impact, of being able to extend a helping hand to those who need it most, that fuels my commitment to regular blood donation..."
[Participant 22, 30 years old].

Participant P22's perspective resonates with the overarching theme, emphasizing the profound empathy and compassion that drive blood donors to contribute. This sentiment mirrors the collective recognition of the importance of aiding the most vulnerable in society, underscoring the depth of commitment and responsibility that accompanies the act of blood donation. Both P31 and P22 understanding that their blood donations directly translate into life-saving interventions for these individuals serve as a powerful motivator. This perspective illuminates the deeply compassionate nature of blood donors, as they recognize the pivotal role they play in alleviating suffering and ensuring the survival of those who are most at risk.

Discussion

This study uncovers a remarkable revelation: blood donors possess an inherently positive outlook on blood donation, a perspective that propels them to repeatedly and voluntarily engage in this altruistic act. This pattern parallels the outcomes of a study conducted in Songea town, Ruvuma region of Southern Tanzania, where a similar positive attitude towards blood donation was observed among medical students (19). The prevailing sentiment among the majority of the participants in this study underscores the belief that blood donation is not merely a medical procedure but an act of charity. This conviction fuels their willingness to continue contributing, akin to the findings in a study from Ngaoundéré, northern Cameroon, where a significant proportion demonstrated a positive attitude towards recurrence of blood donation and expressed readiness to partake if given the opportunity (20).

Further exploration reveals that blood donation embodies a voluntary commitment to the welfare of others. The study participants firmly hold that when it comes to those in need of blood, there

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should be no hesitation or restrictions. This principle aligns with the findings from a study conducted among the King Abdulaziz Medical City Population, where participants echoed the sentiment that donating blood is a life-affirming gesture, free from any form of monetary exchange (21). Similarly, some participants in this study admitted that their motivation to donate blood intensifies when it's for a family member or friend in need, a trend also noted in other studies (12, 28).

Nonetheless, an underlying issue emerges – a lack of knowledge and awareness that might hinder some donors from engaging in recurrence of blood donation. This phenomenon parallels findings from England, where a significant proportion of donors believed that blood transfusions were only necessary in emergencies, displaying a limited understanding of their broader application (23). This gap in information underscores the critical need to enhance general awareness and knowledge among blood donors, with the potential to motivate more individuals to participate.

A resounding theme throughout the study is the overwhelmingly positive perception of recurrence of blood donation. This perspective serves as a powerful motivating force, driven by the belief that contributing blood translates into nurturing the lives of others. Blood donors view their act as a positive embodiment of support and kindness, echoing sentiments observed in a study from Brazil (1).

Peering deeper into the most potent motivators, an ultimate desire to contribute to the well-being of others, devoid of personal gain, shines through as "altruism." This inherent selflessness is a driving factor that encourages blood donors to engage in the recurrence of blood donation, paralleling findings from a study in the Northern Regions of Tanzania (24). A survey conducted by Linah Otieno also found that altruism was a significant driving force, with blood donors exposed to altruistic campaign messages displaying a higher likelihood of participating repeatedly (25).

In essence, this study illuminates the remarkable power of positive attitudes, altruism, and awareness in fostering a culture of recurrence blood donation. By recognizing the profound impact of their contributions on the lives of others, donors harness a compelling motivation to perpetuate their support and become a beacon of hope for those in need.

CONCLUSION

In the realm of blood donation, this study uncovers a profound tapestry of motivations and attitudes that drive recurrence blood donors to engage in this selfless act. The participants' overwhelmingly positive outlook, grounded in the belief that their donations hold the power to save lives, underscores a collective commitment to fostering a culture of sustained blood donation. This dedication is rooted in unwavering altruism, where donors selflessly give, often forgoing personal gains, to aid vulnerable groups like pregnant women, children, and accident victims. However, a challenge persists in the form of a knowledge gap that hinders some donors from participating repeatedly. Bridging this gap through education campaigns and regular reminders becomes pivotal in cultivating a deep understanding of the impact of their contributions.

In conclusion, this study paints a vivid portrait of the intertwining factors that shape the ethos of recurrence blood donation. The positive attitudes, underpinned by altruism and a sense of duty, highlight the transformative power of human compassion. By addressing challenges through awareness campaigns and education, the potential to inspire action and expand the ranks of recurrence blood donors is immense. Ultimately, this research underscores that the collective goodwill of these individuals is a testament to the capacity of human kindness to bring about tangible change in the realm of healthcare and societal well-being.

RECOMMENDATIONS

The findings of this study provide valuable recommendations to enhance blood donation practices and encourage blood donors. To cultivate positive attitudes, targeted campaigns spotlighting donors' altruism and recognizing their dedication through awards can inspire ongoing contributions. Collaborating with healthcare experts and educators can address knowledge gaps through informative sessions and various communication channels. Prioritizing donor health through preventive vaccines and comprehensive health screenings ensures their safety and long-term well-being while allocating resources for research can lead to process improvements. Understanding phlebotomists' experiences and challenges can elevate comprehensive services, creating a more supportive environment for both donors and recipients.

Collectively, these recommendations can contribute to a sustainable and impactful blood donation ecosystem.

REFERENCES

1. Conceição VM da, Araújo JS, Oliveira RAA de, Santana ME de, Zago MMF. Perceptions of donors and recipients regarding blood donation. *Rev Bras Hematol Hemoter.* 2016;38(3):220–4.
2. World Health Organization. Global Status Report on Blood Safety 2016. Geneva: WHO; [Internet]. 2017. 2 p. Available from: <http://apps.who.int/bookorders>
3. Martí-Carvajal AJ, Simancas-Racines D, Peña-González BS. Prolonged storage of packed red blood cells for blood transfusion. Vol. 2015, *Cochrane Database of Systematic Reviews*. John Wiley and Sons Ltd; 2015.
4. Every I, Surgery PC, Medical T, Surgery PC, Medical T, Technologies EH. Blood transfusion safety. :1–6.
5. Mohd Asmawi UM, Osman M, Said N, Mohammad M. Barriers for blood donation in non-blood donor: a qualitative study. *Environ Proc J.* 2019;4(10):59.
6. The United Republic Of Tanzania Ministry Of Health Policy. :1–9.
7. Ajmani, P.S. (2020). History of Blood Transfusion. In: *Immunohematology and Blood banking*. Springer, Singapore. https://doi.org/10.1007/978-981-15-8435-0_9
8. Learoyd P. The history of blood transfusion prior to the 20th century--part 1. *Transfus Med.* 2012 Oct;22(5):308-14. Doi: 10.1111/j.1365-3148.2012.01180.x. PMID: 22994447.
9. Emily K. Storch, Brian S. Custer, Michael R. Jacobs, Jay E. Menitove, Paul D. Mintz, Review of current transfusion therapy and blood banking practices | this article reflects the views of the author and should not be construed to represent FDA's views or policies., *Blood Reviews*, Volume 38, 2019, 100593, ISSN 0268-960X, <https://doi.org/10.1016/j.blre.2019.100593>.
10. Vlaar, A.P.J., Dionne, J.C., de Bruin, S. Et al. Transfusion strategies in bleeding critically ill adults: a clinical practice guideline from the European Society of Intensive Care Medicine. *Intensive Care Med* 47, 1368–1392 (2021). <https://doi.org/10.1007/s00134-021-06531-x>
11. Gammon RR, Rosenbaum L, Cooke R, Friedman M, Rockwood L, Nichols T, Vossoughi S. Maintaining adequate donations and a sustainable blood supply: Lessons learned. *Transfusion.* 2021 Jan;61(1):294-302. Doi: 10.1111/trf.16145. Epub 2020 Nov 18. PMID: 33206404; PMCID: PMC7753343.
12. Uma S, Arun R, Arumugam P. The knowledge, attitude and practice towards blood donation among voluntary blood donors in chennai, india. *J Clin Diagnostic Res.* 2013;7(6):1043–6.
13. Safety BT, Technology C. SAFETY Information Sheet for National Health Authorities. 2008;

14. Universal Access to Safe Blood Transfusion Universal Access to Safe Blood Transfusion.
15. Schlumpf KS, Glynn SA, Schreiber GB, Wright DJ, Randolph Steele W, Tu Y, et al. Factors influencing donor return. *Transfusion*. 2008;48(2):264–72.
16. Mauka WI, Mahande MJ, Msuya SE, Philemon RN. Factors Associated with Repeat Blood Donation at the Northern Zone Blood Transfusion Centre in Tanzania. *J Blood Transfus*. 2015;2015:1–6.
17. World Health Organization and International Federation of Red Cross and Red Crescent Societies. Towards 100 % Voluntary Blood Donation A Global Framework for Action. World Health. 2010;123.
18. Jaafar JR, Chong ST, Alavi K. Experience as factors associated with repeat blood donation among university students in Malaysia. *Southeast Asian J Trop Med Public Health*. 2017;48(5):1118–26.
19. Shabani MM, Zimwe KB, Mbwele B. The Potential Opportunity To Use Medical Students In Voluntary Blood Donation: Learning From Ruvuma, Southern Tanzania. *J Intern Med Prim Healthc*. 2020;4(028).
20. Rolseth SC, Stange PS. Attitudes to blood donation in Ngaoundéré , Cameroon Student thesis by. 2012;1–25.
21. Alfouzan N. Knowledge , Attitudes , and Motivations towards Blood Donation among King Abdulaziz Medical City Population. 2014;2014.
22. Márquez-Melgarejo A, Pérez-Chávez F, Cázares-Tamez R, Díaz-Olachea CG. Attitude, knowledge and perception of the altruistic donation of blood in a city in Northeastern Mexico. *Med Univ [Internet]*. 2015;17(66):34–7. Available from: <http://dx.doi.org/10.1016/j.rmu.2014.12.001>
23. Joshi D, Meakin R. Views and attitudes towards blood donation: A qualitative investigation of Indian non-donors living in England. *BMJ Open*. 2017;7(10):1–9.
24. Mauka WI, Mahande MJ, Msuya SE, Philemon RN. Factors Associated with Repeat Blood Donation at the Northern Zone Blood Transfusion Centre in Tanzania. 2015;2015.
25. Otieno L. Blood donor recruitment and education for successful donor retention. A literature review. 2018;
26. Van Dongen A. Easy come, easy go: Retention of blood donors. *Transfus Med*. 2015;25(4):227–33.
27. Van Dongen A, Abraham C, Ruiter RAC, Schaalma HP, De Kort WLAM, Dijkstra JA, et al. Are lapsed donors willing to resume blood donation, and what determines their motivation to do so? *Transfusion*. 2012;52(6):1296–302.
28. Mramba EL, Ismail IJ. Socio-Economic Determinants of Blood Donation in Tanzania. *Acad J Econ Stud*. 2018;4(1):174–82.

Comment [E.S.3]: The authors must put the complete reference in 4 noticeably the year of publication and the issue. Idem for the reference 6. They must homogenize the references, sometimes the year is just after the authors (as in 7) and always they put it after the journal name (as in 1,2,5...) or after the page number (as in 10)!!