



Addis Ababa University

College of Education and Language Studies

School of Psychology

**Knowledge, Attitude and Motivation of Voluntary Blood Donors in Addis Ababa,
Ethiopia**

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May, 2025

Addis Ababa



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**Knowledge, Attitude and Motivation of Voluntary Blood Donors in Addis Ababa,
Ethiopia**

A Thesis Submitted to the School of Psychology at Addis Ababa University in

Partial Fulfillment of the Requirements for Master of Arts Degree in

Social Psychology

By: Selam Aysheshim

May, 2025

Addis Ababa

Declaration

I, the undersigned, declare that this study, "Knowledge, Attitude and Motivation of Voluntary Blood Donors in Addis Ababa, Ethiopia " is my original work and has not been submitted for a degree at any other university, and that all sources of materials used for the study have been properly acknowledged.

Declared by:

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Approval Sheet

This is to certify that the thesis prepared by **Selam Aysheshim** entitled “**Knowledge, Attitude and Motivation of Voluntary Blood Donors in Addis Ababa, Ethiopia**” is submitted in partial fulfillment of the requirements for the Master of Arts in Social Psychology complies with the regulation of Addis Ababa University and meets the accepted standards with respect to originality and quality.

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May, 2025

Addis Ababa, Ethiopia

Acknowledgments

First and foremost, I offer my deepest gratitude to the Almighty God for His abiding grace.

I would like to express my deepest gratitude to my advisor, Seleshi Zeleke (PhD), for his constructive feedback, guidance and support throughout this research process. His expertise and mentorship have been immeasurable.

I extend my sincere appreciation to the staff and management of the Ethiopian Red Cross Society and the National Blood and Tissue Bank for their support and for granting me access to conduct this study within the institution. Their cooperation greatly contributed to the successful completion of this work.

I am also deeply grateful to all the participants who generously volunteered their time and shared their experiences, making this research possible.

I wish to acknowledge the Head of School of Psychology and the Ethical Clearance Committee at Addis Ababa University for the ethical approval of this study.

Finally, to my family, thank you for your endless love, encouragement, and strong belief in me. Your support has been my constant source of strength.

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List of Acronyms

AJOL	African Journals Online
CSA	Central Statistical Agency
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
KMO	Kaiser-Meyer-Olkin (measure)
NBTS	National Blood Transfusion Services
OR	Odds Ratio
PCA	Principal Component Analysis
SSA	Sub-Saharan Africa
SPSS	Statistical Package for the Social Sciences
VFI	Volunteer Functions Inventory
VNRBD	Voluntary Non-Remunerated Blood Donation
WHO	World Health Organization

Abstract

This study examined the relationship between knowledge, attitudes, and motivations with donation practices among regular and lapsed donors in Addis Ababa. A mixed-method study was conducted at the Ethiopian Red Cross Society Blood Donation Center. Quantitative data were collected through structured questionnaires from 200 voluntary donors (66% regular, 34% lapsed), while qualitative interviews supplemented the findings. Most participants were males (69%), aged 26–35 years, and held undergraduate degrees (66%). About 74% demonstrated adequate knowledge, and all respondents held favorable attitudes toward blood donation. Major motivators for first-time donation included influence from friends and relatives (37.5%) and donation campaigns (17%). Factor analysis identified four motivational domains: altruistic values, personal rewards, self-esteem, and social influence. A chi-square and independent t-test showed that regular donors have significantly higher knowledge, attitude, and service perception scores than lapsed donors. Logistic regression showed that attitude ($OR = 1.246$, $p < .001$) and value-based motivation ($OR = 2.292$, $p < .001$) significantly predicted regular donor status. Knowledge had a marginal association ($p = .069$), while reward, esteem, and social motives were not significant predictors. Value-based appeals, better service experiences, and improving donor education could improve donor retention strategies in Ethiopia.

Keywords: knowledge, attitude, blood donation, VFI

Chapter One: Introduction

1.1. Background of the Study

Blood donation is a life-saving medical intervention that involves collecting blood from healthy individuals for transfusion to patients in need (Tsega et al., 2024). Safe blood transfusion is a critical component of healthcare, improving health outcomes and reducing the transmission of infectious diseases (Omaish et al., 2023). However, a pressing public health concern worldwide is the imbalance between the number of available blood donors and the increasing demand for blood (Griffin et al., 2014). Many individuals globally lack timely access to safe blood, particularly in low-income countries where healthcare infrastructure is limited (World Health Organization [WHO], 2010).

Globally, blood donors are categorized into voluntary unpaid donors, family/replacement donors, and paid donors (WHO, 2010). The act of donating one's own blood, plasma, or other blood elements of one's own accord and without accepting any type of payment, be it cash or in-kind, is voluntary non-remunerated donation. Yet, the provision of minor gifts, refreshments, and reimbursement for the direct cost of travel is still considered acceptable. Family/replacement blood donation takes place when individuals donate blood to meet the needs of a family member or a community individual. Donating blood in return for financial or other forms of compensation is termed paid donation, also known as professional blood donation. In many countries where voluntary blood donation rate is low, family members or friends of those requiring transfusion, and in some cases, paid donations provide the majority of blood supply (WHO, 2010). According to WHO (2023), voluntary unpaid donors are the safest group with the lowest risk of transfusion-transmitted infections. While 79 countries now collect over 90% of their blood supply from voluntary donors, 54 still rely heavily on family/replacement or paid donations (WHO, 2023). Because non-voluntary

donors would be less likely to reveal medical issues that preclude them, this donation type presents safety risks (Tsega et al., 2024).

The demand for blood is universal, yet its availability varies remarkably across countries. High-income nations, representing only 16% of the global population, account for 40% of the world's blood donations, whereas low-income countries struggle to meet basic transfusion needs (WHO, 2023). In these regions, healthcare providers use blood transfusions predominantly for children under five (54% of cases), while in high-income countries, they administer most transfusions (76%) to individuals over 60 (WHO, 2023). There is also a wide difference in donation rates where high-income countries average 31.5 donations per 1,000 people, compared to just 5.0 in low-income nations (WHO, 2023).

Sub-Saharan African (SSA) countries face unique challenges contributing to low donation rates, including infrastructural issues, recruitment and retention difficulties, and knowledge gaps (Asamoah-Akuoko et al., 2017). As a consequence, low voluntary blood donation rates have increased transmission risks caused by unsafe blood transfusions. Consequently, SSA shows a particularly high level of transfusion-associated HIV compared with other regions because of a higher risk of infected blood being transfused (WHO, 2010). Ethiopia is an example of the challenges faced by low-income countries in maintaining a sufficient and safe blood supply. While the country's annual demand is 100,000 units, the country meets only 43% (Tsega et al., 2024). From these, voluntary donations account for just 22% of collections, the lowest rate among WHO African member states (Tsega et al., 2024). The country's high maternal mortality rate, frequent motor vehicle accidents, and malaria burden further exacerbate the need for blood (Mecha & Erchafo, 2022). Despite collecting around 200,000 units annually, Ethiopia's daily deficit is severe, with only 1,100 units gathered against a demand of 18,000 (Kebede et al., 2022; Shama et al., 2022). This

shortage affects vulnerable groups, including pregnant women, trauma patients, and individuals with chronic anemia (Tebabal et al., 2023).

Factors influencing donation willingness include socio-demographic, organizational, physiological, and psychological aspects (Mousavi et al., 2011). Knowledge, attitudes, and motivation play significant roles in blood donation behavior. Studies indicate that inadequate awareness and negative perceptions hamper donation rates, particularly in low-income settings (Huis in 't Veld et al., 2019, Ogundeji et al., 2021). In Ethiopia, regional disparities in voluntary donation rates suggest varying levels of public engagement and education (Darega et al., 2015; Mussema et al., 2023). Prosocial factors like altruism and social responsibility motivate people to donate blood (Misje et al., 2005; Penner et al., 2005; Steele et al., 2008), as well as self-rewarding motivations such as health benefits or personal satisfaction (Ferguson, 2015, Misje et al., 2005).

1.2. Statement of the Problem

Blood and blood-derived products are priceless national resource, as their sole source is individuals who donate blood or its constituent parts (WHO, 2010). The global disparity in blood donation rates shows systemic challenges in low-income countries like Ethiopia (Tsega et al., 2024; WHO, 2023). Despite high demand due to maternal health crises, accidents, and infectious diseases, Ethiopia's blood supply falls short by over 50% daily (Kebede et al., 2022). Young people, a largely untapped donor pool, represent an important demographic for recruitment. These groups have overall good general health and a potential for long-term donation (WHO, 2010). However, retention remains a challenge, with many donors lapsing after initial contributions (Tsega et al., 2024).

Prior researches in Ethiopia have studied general knowledge, attitudes, motivations, and practices among participants from community settings (Beyene, 2020; Enawgaw, 2019;

Getie, 2024; Jemberu et al., 2016; Jibril et al., 2020; Mecha & Erchafo, 2022; Urgesa et al., 2017; Zeleke & Azene, 2022) and specific groups (Gebre et al., 2024; Kebede et al., 2022; Melku et al., 2018; Regassa et al., 2024; Sahlu & Tadesse, 2023; Youssef Ezeldain et al., 2020). However, these studies primarily compared donors and non-donors or assessed willingness to donate, with limited focus on the differences between regular and lapsed donors. Investigating these distinct donor groups is beneficial because they have already overcome the initial barrier of first-time donation. This makes the effort easier to retain them as long-term contributors.

Moreover, to the best of my knowledge and based on an exhaustive search, I could not find a study conducted in Ethiopia that has applied functional motivational theory to blood donation behavior. The literature search was conducted in November 2024 across multiple databases, including ResearchGate, PubMed, Google Scholar, African Journals Online (AJOL), and the Addis Ababa University Digital Library. Keywords used in the search included: 'Volunteer Functions Inventory,' 'VFI,' 'functional motivation theory,' 'Clary and Snyder,' and 'Misje et al.,' combined with 'blood donation,' 'blood donor,' and 'blood donation motivation,' along with 'Ethiopia.' The search covered publications from 1999 to 2025. The functional motivation approach identifies six motivational dimensions (values, understanding, enhancement, career, social, and protective) that explains prosocial behaviors like blood donation. These dimensions remain unexplored in the Ethiopian context. Studying these motivations in regular and lapsed donors could provide important findings that could improve retention strategies. This gap is important to study because retaining existing donors is more cost-effective than recruiting new ones, and the motivational profiles of donors may shift substantially after the initial donation experience.

1.3. Objectives of the Study

The general objective of the study is to investigate the factors influencing blood donation practice among regular and lapsed donors, including knowledge, attitude, motivations and perception of blood bank services in order to enhance donor retention strategies.

The specific objectives include the following

1. To identify the primary recruitment channels that influence individuals to become blood donors.
2. To examine the association between the perception of blood bank services and donation practices among regular and lapsed donors.
3. To assess the association between knowledge, attitudes toward blood donation, and donation practices among regular and lapsed donors.
4. To explore the motivational factors (value-based, protective, understanding, social, and enhancement/esteem motives) that sustain long-term blood donation.
5. To compare motivational factors (value-based, protective, understanding, social, and enhancement/esteem motives) between regular and lapsed donors.

1.4. Significance of the Study

This study adds to the existing body of knowledge on blood donation practices by identifying the role of socio-demographic factors, recruitment channels, service perception, knowledge, attitude, and motivations in influencing blood donation practices in Addis Ababa, Ethiopia. To the researcher's knowledge, previous studies conducted in Ethiopia have not examined donors' motivation from a functional motivational theory perspective. This study addresses this gap by exploring underexplored motivational variables using a new approach applied to the Ethiopian context. In addition, most studies conducted in Ethiopia have

focused on comparing donors and non-donors or assessing willingness to donate. In contrast, this study specifically focuses on donors, both regular and lapsed. These groups are particularly important because they have already overcome the initial barriers to donating and are generally less costly to retain compared to recruiting new donors. The findings are expected to be valuable for the National Blood Transfusion Service, policymakers, and other healthcare stakeholders in designing donor recruitment, promotion, and retention strategies based on evidence. The study findings will be helpful in addressing the challenge of blood shortages by recommending matching interventions. Researchers can also use the findings of this study as a basis to conduct similar studies in other towns and specific groups to support targeted interventions.

1.5. Scope of the Study

This study was conducted in Addis Ababa and involved individuals who were voluntary blood donors. Participants were selected from donors who visited the Ethiopian Red Cross Society blood donation center. First-time donors were excluded, as their donation patterns and long-term motivations could not be assessed. Another excluded group was individuals donating blood for purposes other than voluntary non-remunerated donation (e.g., replacement or paid donation).

1.6. Rationale of the Study

Voluntary blood donation plays a critical role in saving lives, especially for patients with chronic illnesses, trauma, or cancer who require regular transfusions. Despite its importance, blood shortages remain a persistent challenge in Ethiopia. As a medical professional, I have personally witnessed this gap during my training and practice. While attending clinical rotations at Tikur Ambessa Specialized Hospital, a referral center for complex and advanced cases, I observed the daily struggles of wards full of pediatric and

adult patients, many of whom required consistent transfusions. In particular, cancer patients in the pediatric ward often needed blood products every day, yet the supply was frequently inadequate. The inability to access sufficient blood not only delayed care but, in some heartbreaking cases, led to preventable deaths. The issue is even more urgent now, given the rising demand for blood in rural and conflict affected areas due to war injuries, malaria outbreaks, and the increasing burden of chronic illnesses. Unlike pharmaceutical products, blood cannot be manufactured in a laboratory or imported like drugs or vaccines, it is entirely dependent on the motivation and willingness of individuals to donate.

This study seeks to explore the underlying motivational, cognitive, and perceptual factors that influence donation practices among regular and lapsed donors. By understanding what drives or discourages individuals from continuing to donate, this study aims to support evidence based strategies that can enhance donor retention and ensure a more reliable blood supply system.

1.7.Operational Definition of Constructs

Knowledge: An individual's awareness of the benefits associated with blood donation and the procedures involved in the blood donation process. In this study, knowledge was assessed using a structured questionnaire consisting of 10 items in the form of multiple-choice and fill-in-the-blank questions. Each response was scored as “1” for a correct answer and “0” for an incorrect answer. The questionnaire items were adapted from validated tools in prior literature (Sahlu & Tadesse, 2023; Zeleke & Azene, 2022). Previous studies have used both 50% (Sahlu & Tadesse, 2023; Zeleke & Azene, 2022) and 70% (Melku et al., 2018) as cut-off points to distinguish adequate knowledge. In this study, a score of 70% and above on the knowledge assessment was labeled as ‘adequate knowledge,’ while scores below 70% were labeled as ‘inadequate knowledge.’ The 70% threshold was chosen because the participants were already within donor groups, and it is presumed that they would have relatively better

knowledge. Therefore, a higher cut-off point was considered more appropriate to distinguish between varying levels of knowledge among regular and lapsed donors.

Attitude: refers to an individual's evaluative disposition (positive, neutral, or negative) toward blood donation. In this study, attitude was measured using a 7 item 5-point Likert scale adopted from (Sahlu & Tadesse, 2023; Zeleke & Azene, 2022). Study participants who had above mean scores were labeled as having “favourable attitude” otherwise “unfavourable attitude”.

Functional Motivational Factors: Psychological drives and reasons behind continued blood donation behavior, based on the Functional Motivation Theory. In this study, motivation was measured using a 5-point Likert scale questionnaire adapted from the Volunteer Functions Inventory (VFI) developed by Clary and Snyder (1999), and further adapted to the blood donation context by Misje et al. (2005). The tool assess protective, value, social, understanding and enhancement/esteem motivational factors.

Blood Donation Practice: The actual pattern of blood donation behavior. In this study, donation practice was categorized based on donation frequency and recency. Participants were classified as either regular blood donors or lapsed blood donors, based on predefined criteria.

Regular Blood Donor: a voluntary blood donor who has made at least two blood donations within the preceding 24 months, with the most recent donation occurring within the last 12 months (Amanuel, 2016). Regular donors were coded as ‘1’.

Lapsed Blood Donor: For the purpose of this study, a lapsed voluntary donor is defined as an individual who has voluntarily donated blood previously but whose most recent donation (before their current donation) occurred more than two years prior, thus not meeting the criteria for a regular donor. Lapsed donors were coded as ‘0’.

Chapter Two: Review of Literature

This chapter presents a review of relevant literature. The first part discusses the theoretical foundations that guide blood donation behavior. The second part presents and compares empirical studies done on blood donation. The final section presents the conceptual framework that guides the present study.

2.1. Review of Theoretical Perspectives

2.1.1. Functional Motivation Theory

Volunteerism, including blood donation, is commonly understood as a sustained behavior directed toward the well-being of others without the expectation of financial gain (Alfieri et al., 2020; Chacón et al., 2017; Guiddi et al., 2015). This altruistic behavior is deeply embedded within an individual's value system and is shaped by their social environment. It often reflects a desire to contribute to the collective welfare of society, and for many, it serves as an expression of personal values or social identity (Snyder, 1993).

The Functional Motivation Theory, rooted in the broader functional approach to psychology, proposes that individuals engage in behaviors such as volunteering to fulfill specific psychological needs or functions. Daniel Katz (1960) initially advanced this perspective, arguing that attitudes serve various functions for individuals, such as expressing values, gaining knowledge, or adapting to social norms. Building on Katz's theoretical base, Omoto and Snyder came with The Functionalist Model of Volunteering, which provides a foundational understanding of why individuals choose to dedicate their time and effort to voluntary activities. This model proposes that people volunteer as a means to satisfy specific underlying psychological needs. Importantly, the model recognizes that different volunteer activities can serve varying functions for different individuals, showing the personalized nature of motivational drivers. Furthermore, the motivation to engage in volunteer work is

not static but rather a dynamic process, continuously shaped by the psychological functions that individuals seek to fulfill through their involvement.

Clary and Snyder (1991, 1998) developed a more specific application of the functional approach to understand why individuals volunteer, resulting in the creation of the Volunteer Functions Inventory (VFI). Clary et al. (1998) developed the VFI, to identify the specific psychological functions served by volunteering. Since then, the tool has been used in different setups including healthcare-related volunteering such as blood donation (Clary et al., 1998; Chacón et al., 2017; Wong & Foo, 2011). According to the functional approach, individuals engage in volunteering activities for various underlying reasons, and these reasons may differ significantly from one person to another, even when they engage in the same type of volunteer work (Clary et al., 1998; Snyder & Cantor, 1998).

According to Clary & Snyder(1999), the VFI identifies six functions that drive volunteer behavior:

Values- Altruistic motivations such as humanitarian concern or helping others.

Understanding- Motivation derived from the desire to gain new insights, develop skills, and engage in meaningful learning through hands-on involvement in blood donation. It reflects an individual's interest in expanding their perspective and competence by participating in purposeful activities such as donating blood.

Social- Motivations rooted in enhancing or maintaining social relationships, or meeting others' expectations.

Career- Volunteering as a way to gain skills and experience for future employment.

Protective- Function that helps reduce guilt or address personal issues, such as overcoming personal trauma.

Enhancement- Motivations that contribute to personal growth, self-esteem, or psychological well-being.

These motivational factors not only serve for initiating volunteerism but also for sustaining long-term involvement. Studies shows that blood donors are similarly influenced by these psychological functions. For example, studies have found that new donors may be motivated primarily by altruism (values), while loyal and regular donors often shift toward motivations tied to identity and personal fulfillment (Guiddi et al., 2015; France et al., 2014). The dynamic nature of motivation in blood donation has also been explored. Alfieri et al. (2016) observed that economic stressors can influence donors' underlying motivations, while Wong and Foo (2011) reported that motivations evolve with increased volunteer experience: values and social motivations tend to increase, whereas career-related motivations decline. One of the strengths of the functional approach is its flexibility in accounting for multiple, coexisting motives. Volunteers often report more than one reason for their involvement, reflecting both altruistic and self-oriented considerations. This multi-motivational perspective suggests that volunteerism is not easily categorized as entirely selfless or self-serving (Clary & Snyder, 1999). The functionalist motivation theory also suggests the importance of matching volunteer roles with individuals' motivations. When the volunteer experience aligns with personal motives, individuals are more likely to maintain long-term commitment (Clary et al., 1998; Snyder & Cantor, 1998). This has practical implications for blood donation campaigns. Targeted messages that resonate with various motives can enhance recruitment and retention of donors.

This study is grounded in the Functional Motivation Theory, particularly the Volunteer Functions Inventory (VFI), to examine the psychological motivations driving blood donation behavior.

2.2. Review of Empirical Studies

2.2.1. Socio-demographic Characteristics of Donors

Several sociodemographic factors are associated with blood donation practice in Ethiopia. Higher education levels consistently correlate with increased donation rates (Arbaminch University CMHS, 2022), Sahlu & Tadesse, 2023; Tsega et al., 2024). Younger individuals are often more likely to donate in some studies (Mecha & Erchafo, 2022; Tsega et al., 2024), and males tend to donate more frequently than females (Mohammed et al., 2022; Tsega et al., 2024). Certain occupations, like teaching and NGO work, have been linked to higher rates (Arbaminch University CMHS, 2022; Jibril et al., 2020). Urban residents may also donate more than rural residents (Arbaminch University College of Medicine and Health Sciences[CMHS], 2022). Having family members who donate increases the likelihood of an individual donating (Arbaminch University CMHS, 2022; Mohammed et al., 2022), as does previous participation in campaigns (Mohammed et al., 2022). Finally, having the opportunity to donate is crucial (Mohammed et al., 2022), and in some studies, higher income levels have been associated with increased donation (Mecha & Erchafo, 2022; Sahlu & Tadesse, 2023).

2.2.2. Knowledge of Blood Donation in Ethiopia

Understanding of blood donation varies across the Ethiopian population. Studies on the general public show different knowledge levels. In a study done in selected towns of the Awi Zone, a significant portion of residents had adequate knowledge about voluntary blood donation, ranging from 55.6% in Chagni to 79.0% in Dangila suggesting different knowledge levels between these towns (Tsega et al., 2024). In contrast, research in rural North Shoa Zone indicated lower awareness, with only 46.2% of participants having heard about blood donation (Sahlu & Tadesse, 2023). This study also found knowledge gaps about blood groups and donation intervals. In Gondar town, 56.8% of adults had adequate knowledge (Moges et

al., 2016). This variability suggests that localized awareness campaigns might be more effective in improving public understanding.

Among students, knowledge levels are generally higher, especially in health-related fields. Medical and health science students at Wolkite University showed high knowledge, with 94.6% demonstrating good understanding (Regassa et al., 2024). Similarly, regular undergraduates at Wachemo University had a substantial proportion (77.6%) with adequate knowledge (Mussema et al., 2024). However, a study at Arbaminch University CMHS reported a lower adequate knowledge level of 49.2% (Arbaminch University CMHS, 2022). The generally higher knowledge among students, particularly in health sciences, indicates the potential of educational institutions as an important platform for promoting awareness and a culture of donation.

Civil servants show mixed levels of blood donation knowledge. In Bale Robe town, less than half (43.8%) had good knowledge (Mohammed et al., 2022). A similar finding was reported in Chiro town, where only 31.3% of respondents showed good knowledge (Nigussie et al., 2020). These findings suggest a need for targeted workplace awareness programs. While the provided snippets lack direct data on healthcare workers' knowledge, a systematic review indicated higher favorable attitudes in this group (Getie et al., 2024). Given their training and exposure, healthcare workers likely have higher knowledge levels compared to other groups, positioning them as crucial advocates.

Reviewed studies assessed several specific knowledge areas: eligibility criteria (age, weight, health status), benefits of donation (life-saving potential), risks of donating and receiving blood, practical aspects (amount donated, frequency), awareness of transfusion-transmissible diseases (HIV, HBV, HCV), and basic knowledge of blood groups. Consistent assessment of these areas allows comparison of specific knowledge gaps. For example, the

lack of awareness about donation intervals in rural North Shoa Zone (Sahlu & Tadesse, 2023) indicates a target area for education.

Several factors are associated with blood donation knowledge in Ethiopia. Education level is a consistently strong predictor, with higher education linked to better knowledge (Sahlu & Tadesse, 2023; Tsega et al., 2024; Mussema et al., 2024; Arbaminch University CMHS, 2022; Nigussie et al., 2020; Kassie & Birara, 2020). Specifically, those with a degree or higher were more likely to be knowledgeable (Tsega et al., 2024). Some studies found males to have higher knowledge (Getie et al., 2024). Age was also significantly associated with knowledge in certain contexts (Tsega et al., 2024). Occupation plays a role, with teachers showing higher knowledge (Arbaminch University CMHS, 2022). Government employees and daily workers were more knowledgeable than housewives and students in one study (Jibril et al., 2020). Urban residents tended to have better knowledge than rural counterparts (Arbaminch University CMHS, 2022), likely due to access to information. Family history of donation was also linked to greater knowledge (Arbaminch University CMHS, 2022), suggesting social influence. Finally, access to information sources, especially mass media and health professionals, was an important determinant (Mohammed et al., 2022; Mussema et al., 2024).

2.2.3. Attitudes Towards Blood Donation in Ethiopia

Research indicates that while most Ethiopians have favorable views on blood donation, a significant portion still hold unfavorable views. A systematic review showed an overall pooled prevalence of favorable attitudes of 65.28% (Getie et al., 2024). Despite this, the prevalence varies across population groups and regions. In Awi Zone towns, a high percentage reported adequate attitudes, ranging from 66.4% in Dangila to 82.0% in Injibara (Tsega et al., 2024). However, in rural North Shoa Zone, while 57.6% considered voluntary donation good, the overall percentage with a good attitude was around 42% (Sahlu & Tadesse,

2023). In Gondar town, 82% of adults had a positive attitude (Moges et al., 2016). Among medical and health science students at Wolkite University, positive behaviors were high, with 95.3% reporting good habits and 85.3% recommending voluntary donation (Regassa et al., 2024). However, attitudes about potential harm and anemia were less positive. Undergraduate students at Arbaminch University CMHS showed a 53.7% favorable attitude rate (Arbaminch University CMHS, 2022), while Wachemo University students reported 79.6% (Mussema et al., 2024). Among civil servants, favorable attitudes were 58.9% in Bale Robe town (Mohammed et al., 2022) and 43.6% in Chiro town (Nigussie et al., 2020). Notably, in Hosanna town, the proportion with a favorable attitude was much lower at 26.4% (Mecha & Erchafo, 2022). This variation suggests that attitudinal barriers may be context-specific.

Expressing willingness to donate is a strong predictor (Mohammed et al., 2022), and good knowledge and a favorable attitude are often associated with higher practice rates (Arbaminch University CMHS, 2022; Nigussie et al., 2020; Mecha & Erchafo, 2022; Sahlu & Tadesse, 2023; Tsega et al., 2024). Willingness to donate in the future is an important aspect of attitude. A pooled analysis indicated that 74.23% of potential donors in Ethiopia were willing to donate (Getie et al., 2024). Among patient caregivers at the University of Gondar, this was higher at 78.1% (Kebede et al., 2022). However, in Gondar town, willingness among adults was lower at 45.3% (Zelege & Azene, 2022), and in Hosanna town, only 34.9% intended to donate within six months (Mecha & Erchafo, 2022). The gap between high willingness and lower actual donation rates, especially in Hosanna town, suggests a disconnect between intention and action. This indicates the need to explore factors that translate willingness into behavior.

Underlying feelings about blood donation also shape attitudes. A majority (83.99%) of potential donors in Ethiopia reported good feelings about donation (Getie et al., 2024). Despite this, 42.84% believed there is a risk (Getie et al., 2024). Common reasons for not

donating included fear of needles, anemia, other health risks, and lack of information (Mohammed et al., 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023). Some reported not donating due to perceived unfitness or never being asked (Mohammed et al., 2022; Regassa et al., 2024). Among students, family objections were also cited (Regassa et al., 2024). The coexistence of positive feelings with fears and misconceptions underscores the need for increasing awareness about benefits and risks of blood donation.

Several factors influence attitudes towards blood donation in Ethiopia. A consistent finding is the significant association between knowledge and attitude, with good knowledge linked to more favorable attitudes (Getie et al., 2024). This emphasizes the role of education. Healthcare workers also showed more positive attitudes (Getie et al., 2024), likely due to their professional awareness. While not consistently reported, some research indicated links between socioeconomic factors like education and income with attitudes (Mecha & Erchafo, 2022), suggesting an area for further study.

2.2.4. Practice of Blood Donation in Ethiopia

The actual practice of blood donation in Ethiopia generally remains low across various population groups, despite varying levels of knowledge and attitudes. In the Awi Zone towns, voluntary blood donation rates were low, ranging from 12.3% in Jawi to 29.3% in Injibara (Tsega et al., 2024). The rural North Shoa Zone showed a particularly low rate of 9.8% (Sahlu & Tadesse, 2023). In Gondar town, only 18.4% of adults reported ever donating blood (Moges et al., 2016). Among medical and health science students at Wolkite University, the practice rate was 28.7% (Regassa et al., 2024). Undergraduate students at Arbaminch University College of Medicine & Health Sciences had a higher rate of 43.2% (Arbaminch University CMHS, 2022), but regular undergraduates at Wachemo University had a lower rate of 19.3% (Mussema et al., 2024). Among civil servants, the practice rate was 27% in Bale Robe town (Mohammed et al., 2022) and higher at 43.6% in Chiro town (Nigussie et al.,

2020). In Hosanna town, 30.1% of participants reported ever donating blood (Mecha & Erchafo, 2022). The consistently low rates, especially compared to expressed willingness in some studies, highlight a significant gap between intention and action.

2.2.5. Motivation of Blood Donors

Those who donate blood in Ethiopia report various reasons, including moral satisfaction and altruism (Arbaminch University CMHS, 2022; Mohammed et al., 2022). Many are motivated by the desire to help friends or relatives (Mecha & Erchafo, 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023). A sense of social responsibility also drives some (Regassa et al., 2024), and for others, it may be spiritual beliefs (Regassa et al., 2024). Saving a patient's life or a family member's life are also significant reasons (Sahlu & Tadesse, 2023). In some cases, donation occurs as replacement donation for family or friends or even as paid donation (Mecha & Erchafo, 2022).

Altruism and Social Responsibility. Altruism, defined as the selfless concern for the well-being of others, and social responsibility, reflecting a sense of duty towards the community, are significant motivators for blood donation (Mecha & Erchafo, 2022; Mohammed et al., 2022; Regassa et al., 2024). A study conducted at Wolkite University (Regassa et al., 2024) found that 20.5% of medical and health science students who had donated blood cited altruism, a sense of social responsibility, the desire to help friends or relatives, or spiritual blessings as their primary reasons. This indicates that a segment of the student population is driven by an intrinsic desire to contribute to the well-being of others. Similarly, research among civil servants in Bale Robe town (Mohammed et al., 2022; Seid et al., 2022) revealed that moral satisfaction was the most common motivating factor (61.1%) for those who had previously donated blood. This suggests a strong internal reward mechanism associated with the act of donating. Furthermore, a study on Hosanna town dwellers (Mecha & Erchafo, 2022) indicated that their primary motivation for considering

blood donation was to help unknown recipients without expecting any personal benefit, highlighting a genuine altruistic intent. This finding aligns with a broader systematic review on blood donor motivations (Getie et al., 2024) which suggests that altruism is a prevalent and significant driver for blood donation across various populations globally. While altruism appears to be a significant motivator in the Ethiopian context, its prevalence varies across different populations. The difference in the reported rates of altruistic motivation between Wolkite University students (20.5%) and Bale Robe civil servants (61.1%) (Mohammed et al., 2022; Regassa et al., 2024) suggests that social and demographic factors, as well as the specific context and framing of surveys, might influence the strength and articulation of altruistic motivations. Understanding these variations is crucial for designing appeals and campaigns to resonate with different segments of the population.

Personal Experiences and Empathy. Personal experiences with situations requiring blood transfusion, either directly or through close acquaintances, often cultivate a profound sense of empathy and a strong motivation to donate (Zelege & Azene, 2022). A study conducted in Gondar town (Zelege & Azene, 2022) revealed that adults who had a history of relatives dying due to blood loss were significantly more likely to express a willingness to donate blood. This direct exposure to the critical need for blood can serve as a powerful catalyst for motivating individuals to become donors. Additionally, among medical and health science students at Wolkite University (Regassa et al., 2024), helping friends or relatives in need was reported as a motivating factor for blood donation. This highlights the role of immediate social connections and a desire to support those within one's personal circle. These findings suggest that personal experiences of witnessing the impact of blood loss can profoundly influence an individual's motivation to donate, underscoring the potential effectiveness of incorporating compelling patient stories and testimonials into awareness

campaigns to evoke empathy and highlight the tangible difference blood donation makes in saving lives.

Incentives and Recognition. While the primary focus is on voluntary non-remunerated donation, research suggests that incentives and recognition, both tangible and intangible, can play a role in influencing motivation (Mecha & Erchafo, 2022). Among Hosanna town dwellers (Mecha & Erchafo, 2022), the potential for receiving rewards or incentives such as free health screenings or medical check-ups, gaining knowledge of one's blood type, or receiving tokens of appreciation like certificates or T-shirts were mentioned as considerations for voluntary donation. These incentives, while not monetary, can provide a perceived benefit to the donor. Similarly, a study conducted in Saudi Arabia (Al-Asadi & Al-Yassen, 2018) found that a donor card served as a major incentive for blood donation, possibly providing a sense of identity or contribution. While the emphasis in Ethiopia is appropriately placed on non-remunerated donation, exploring the potential of ethical and culturally appropriate non-monetary incentives and recognition programs might be a valuable strategy for encouraging initial donation and donor retention. It is important to ensure that such incentives do not become the primary motivation for donation, but rather serve as a form of appreciation that reinforces the intrinsic motivations of altruism and social responsibility.

Spiritual and Moral Beliefs. Spiritual and moral beliefs, deeply ingrained in many communities in Ethiopia, can also serve as significant motivators for blood donation (Regassa et al., 2024). Among medical and health science students at Wolkite University (Regassa et al., 2024), some reported that the pursuit of spiritual blessings was a reason for their blood donation. This connection between religious faith and the act of giving highlights the potential for appealing to these values in promoting donation. Furthermore, a study conducted in Afghanistan (Saeed et al., 2024; Saeed et al., 2024) found that the "Willingness of Allah" was a prominent motivating factor among blood donors, indicating the strong influence of

religious conviction in some cultural contexts. Additionally, research in Gondar (Moges et al., 2016) showed that participants who identified as Protestant were more likely to have a positive attitude towards blood donation, suggesting that religious affiliation can correlate with donation-related attitudes and behaviors.

2.2.6. Motivation of Regular Versus Lapsed Donors

Understanding the differences in motivation between individuals who donate blood regularly and those who have donated in the past but no longer do is crucial for effective donor management and retention.

Motivations of Regular Donors. Regular blood donors are likely sustained by strong intrinsic values such as altruism and a deep-seated sense of commitment to contributing to the well-being of their community (Zelege & Azene, 2022). Their continued engagement in blood donation may also be positively influenced by past experiences, a feeling of being valued and appreciated by blood donation services, and the convenience of incorporating donation into their lives (Schreiber et al., 2006; Shaz et al., 2010). Furthermore, witnessing the positive impact of blood donation and feeling a personal connection to the cause can reinforce their motivation to remain regular donors (Zelege & Azene, 2022).

Reasons for Lapsed Donation. Individuals who have previously donated blood but have since stopped, known as lapsed donors, cite a variety of reasons for their cessation. A common barrier is the perceived or actual lack of time due to work, family, or other commitments (Regassa et al., 2024; Schreiber et al., 2006; WHO, 2010). Fears related to the donation process, such as fear of needles, pain, or adverse physical reactions, also deter some individuals from continuing to donate (Mohammed et al., 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023; Schreiber et al., 2006; Wilkes et al., 2009). Concerns about their own health, including fear of anemia, weight loss, or contracting infections, especially in the wake of the COVID-19 pandemic, can also lead to lapsed donation (Burton et al., 2021;

Mohammed et al., 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023). A lack of awareness about donation opportunities, the required time intervals between donations, or the location of donation centers can also contribute to individuals not donating regularly (Mecha & Erchafo, 2022; Sahlu & Tadesse, 2023; Schreiber et al., 2006;). Practical issues such as the inconvenience of donation center locations or their operating hours can also act as barriers (Sahlu & Tadesse, 2023; Schreiber et al., 2006;). In some cases, particularly for younger donors, parental restrictions might play a role (Regassa et al., 2024). Interestingly, some individuals report no specific reason for not donating regularly, while others may have never given it much thought (Mohammed et al., 2022; Regassa et al., 2024). A lack of opportunity to donate, either due to infrequent blood drives or limited access to donation centers, can also lead to individuals lapsing (Mohammed et al., 2022; Sahlu & Tadesse, 2023). Negative experiences during previous donation attempts can also deter individuals from donating again (Schreiber et al., 2006). Some individuals also express a belief that blood donation might negatively affect their health (Sahlu & Tadesse, 2023).

2.2.7. Barriers to Blood Donation

Individuals who do not donate cite reasons such as fear of pain, needles, or blood (Mohammed et al., 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023). Concerns about negative health consequences like anemia also play a role (Mohammed et al., 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023). Lack of awareness or information is another common barrier (Mecha & Erchafo, 2022; Mohammed et al., 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023). Some report never being asked (Mohammed et al., 2022; Regassa et al., 2024), while others face family objections (Regassa et al., 2024). Feeling medically unfit is also common (Mohammed et al., 2022; Regassa et al., 2024; Sahlu & Tadesse, 2023), as is lack of time or opportunity (Mohammed et al., 2022; Mussema et al., 2024). Logistical barriers like lack of sensitization campaigns (Mecha & Erchafo, 2022) and not knowing

where to donate (Mecha & Erchafo, 2022; Sahlu & Tadesse, 2023) also contribute. For some, they have simply never thought about it (Mohammed et al., 2022). Fear of infections like HIV is another concern (Regassa et al., 2024; Sahlu & Tadesse, 2023), along with fears of weight loss (Sahlu & Tadesse, 2023), inaccessible centers (Sahlu & Tadesse, 2023), and parental restrictions (Regassa et al., 2024).

2.2.8. Types of Donors

Voluntary Non-Remunerated Donors. Voluntary non-remunerated donors are primarily motivated by altruism and a strong sense of social responsibility, often experiencing moral satisfaction from the act of giving (Getie et al., 2024; Mecha & Erchafo, 2022; Mohammed et al., 2022; Regassa et al., 2024). Their core motivation lies in the desire to help individuals they may never meet, without expecting any form of financial reward or material compensation (Mecha & Erchafo, 2022). Some may also be influenced by their spiritual or religious beliefs, which encourage selfless acts of charity and the saving of lives (Regassa et al., 2024).

Replacement Donors. Replacement donors are typically motivated by a direct need within their immediate social circle, such as when a family member, friend, or someone in their community requires a blood transfusion (Arbaminch University CMHS, 2022; Mecha & Erchafo, 2022; Regassa et al., 2024). They donate blood with the primary intention of replacing the blood units used by their loved ones. This type of donation still constitutes a significant portion of the blood supply in Ethiopia (Getie et al., 2024; Mohammed et al., 2022), indicating a strong cultural emphasis on supporting one's family and community during times of medical need.

Paid Donors. Paid donors are primarily driven by financial incentives, donating blood in exchange for monetary compensation (Arbaminch University CMHS, 2022; Mecha & Erchafo, 2022; Regassa et al., 2024). While this practice may have been more common

historically, the current global and national focus is on promoting voluntary non-remunerated donation due to safety concerns associated with paid donors (Arbaminch University CMHS, 2022; Regassa et al., 2024). Nevertheless, a study in Hosanna town in 2016 (Mecha & Erchafo, 2022) reported that 30.1% of donors received payment for their donation, suggesting that this form of motivation might still be relevant in some contexts.

Studies show different proportion of donor types. In Gondar town, among those who had donated before, 61% were voluntary donors, while the rest were replacement donors (Moges et al., 2016). A study in Bale Robe town found that the lifetime voluntary blood donation practice among civil servants was 27%, with 48% of donors having donated only once and 52% having donated two or more times; the proportion of regular donors was 31.4% of the donors (Mohammed et al., 2022). At Wolkite University, among students who had donated, 54.8% had donated only once, and 24.8% considered themselves regular donors (Regassa et al., 2024). These findings suggest that while some individuals become regular voluntary donors, a significant portion donate only once or as replacement donors.

2.2.9. Review of Empirical Studies done using VFI on Blood Donation Motivation

Several international studies have employed the Volunteer Functions Inventory (VFI) to examine blood donor motivations across different cultural contexts. In India, Basukala et al. (2015) found that altruistic values (Value function) and social influences were primary motivators, with donors reporting increased self-esteem (Enhancement) from donating. This aligns with Saha and Chandra's (2018) findings that Value, Social, and Enhancement motivations significantly predicted donation intentions, though Protective motives negatively impacted retention.

In Nigeria, Aworanti et al. (2024) identified self-esteem (Enhancement) and social networks as the strongest drivers through factor analysis, while also noting strong altruistic

(Value) motivations. Similarly, Kampira et al. (2019) found Zimbabwean high school donors were primarily motivated by personal growth (Understanding) and a combination of self-worth and altruism (merged Enhancement-Value factor).

Chinese donors showed dynamic motivations in Zhang et al.'s (2021) study, where altruism (Value) strongly influenced new donors but diminished for regular donors. European data from Martins et al. (2024) in Portugal confirmed the VFI's six-factor structure, with Value, Understanding and Enhancement being most prominent, while revealing gender differences in Social and Enhancement motivations.

These studies collectively demonstrate that while altruism (Value) is universally important, its relative strength varies by donor experience level. Social (peer influence) and Enhancement (self-esteem) factors show cultural variability, being particularly strong in African contexts. The Understanding function appears most relevant for younger, educated donors.

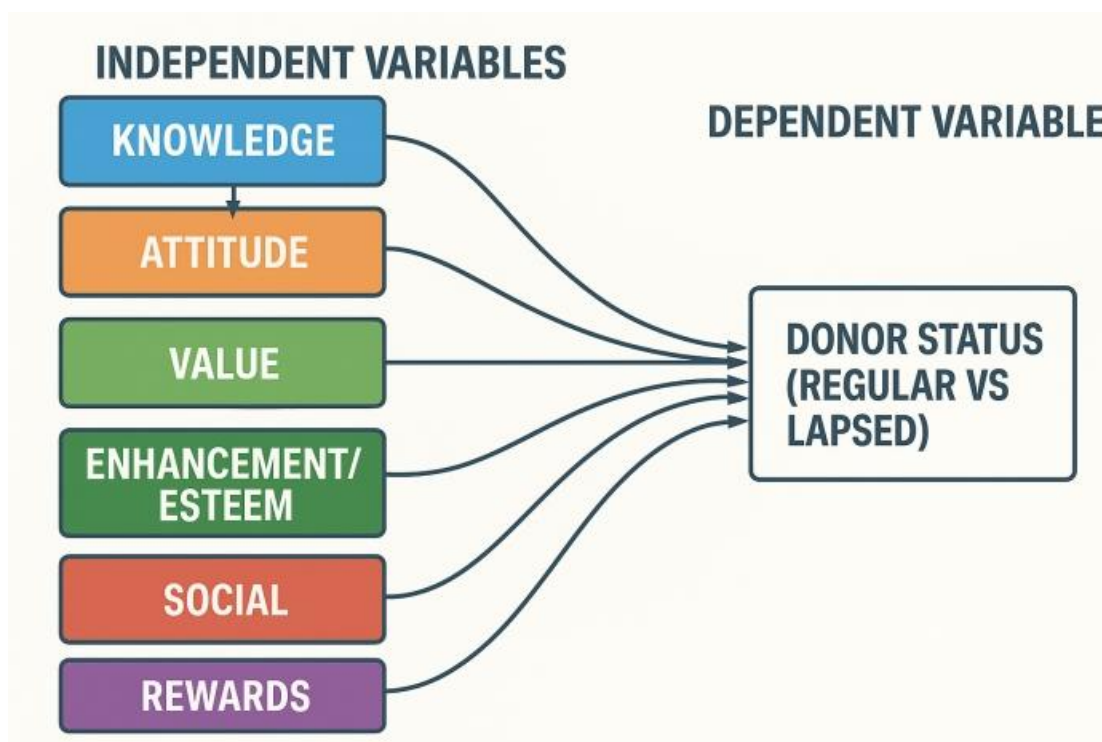
Based on the review of the studies above, one can conclude there is consistently low practice rates of voluntary blood donation across various Ethiopian populations. Another consistent finding is the positive correlation between higher education and better knowledge, more favorable attitudes, and increased practice rates. The importance of addressing fear and lack of information as barriers is important. Furthermore, moral satisfaction and altruistic motives are frequently cited as drivers for donation.

However, despite commonalities, while practice rates are low, attitude levels vary more, suggesting that positive attitude alone is insufficient for donation, implying other influencing factors. The association between knowledge and practice also varies. Additionally, the influence of demographics like age, sex, and income on knowledge, attitude, and practice is not always consistent. These inconsistencies indicate a need for more research.

A notable trend is higher favorable attitudes in studies after 2020 (Getie et al., 2024), suggesting a potential positive shift possibly due to increased awareness.

2.3. Conceptual Framework

This study builds on existing literature where knowledge and attitude are important determinants of blood donation behavior. It grounds on Functional Motivation Theory for assessing motivational factors. Figure 1 presents the proposed framework of how independent variables: knowledge about blood donation, attitude toward blood donation, and motivational factors (value, esteem, social and reward), relate to the dependent variable, donor status (regular or lapsed). The value, esteem, social and reward factors are selected and used in this framework after the VFI was adapted to our context using factor analysis. That is, the original understanding and protective factors together with other health benefits were factored in to one, and presented in this conceptual framework as the rewards variable. The framework also shows that knowledge about blood donation is associated to attitude toward blood donation. Knowledge reflects donors' awareness of the donation process and its impact, while attitude captures their emotional and cognitive evaluations. The motivational factors (value, esteem, social and rewards) represent intrinsic and extrinsic reinforcements that strengthen blood donation commitment.

Figure 1*Conceptual Framework*

2.4. Summary and Implication of the Reviewed Literature

The literature review offers a detailed examination of the factors influencing voluntary blood donation and the theoretical framework guiding this study. The Functional Motivation Theory (Clary and Snyder, 1999) provides a perspective to guide this study, suggesting that individuals donate blood to fulfill psychological needs such as altruism, social connection, and personal growth. These motivations are dynamic, influencing both initial and sustained donation behavior (Alfieri et al., 2016).

2.4.1. Summary of Key Empirical Findings

Empirical evidence indicates that socio-demographic factors, higher education, male gender, urban residence, and family donation history, correlate with higher donation rates. In the Ethiopian context, knowledge levels differ across populations, with urban residents and

students, especially those in health-related fields, demonstrating higher awareness (e.g., 94.6% among Wolkite University medical students; Regassa et al., 2024) compared to rural areas (e.g., 46.2% in North Shoa Zone; Sahlu & Tadesse, 2023). Attitudes are generally positive, with a pooled prevalence of 65.28% favorable attitudes (Getie et al., 2024), though a significant gap persists between these attitudes and actual donation practices, which range from 9.8% to 43.6% across studies (Tsega et al., 2024; Mohammed et al., 2022). This suggests the influence of external barriers is as strong as internal willingness.

Motivations for blood donation in Ethiopia include altruism, social responsibility, and personal experiences, such as knowing someone in need of a transfusion (Zelege and Azene, 2022). Regular donors are often driven by intrinsic values, while lapsed donors cite barriers like time constraints, fear of health risks, and lack of opportunity (Regassa et al., 2024; Schreiber et al., 2006). Barriers to donation are significant, including fear of pain or needles, misconceptions about health risks, and logistical challenges like inaccessible donation centers (Mohammed et al., 2022; Sahlu and Tadesse, 2023).

2.4.2. Implications for this Study

This review of literature identifies significant gaps in understanding blood donation behavior in Ethiopia. This study addresses these gaps through providing specific focus, theoretical grounding, and methodological approach.

Most studies in Ethiopia tend to group all blood donors together or focus only on whether someone has ever donated, without looking deeper into differences between those who continue donating regularly or those who are inconsistent in their donation practice. This limits how well the factors that support donor retention are understood. This study addresses this gap by directly comparing regular and lapsed donors, specifically examining their motivations (such as values, social reasons, understanding, self-esteem, and protective

reasons). It also explores how these two groups perceive services at donation centers, and whether their levels of knowledge and attitudes toward blood donation differ. This study looks at two distinct donor types and provides understanding of what encourages long-term commitment.

While earlier research in Ethiopia has mentioned reasons like altruism, there has been limited application of structured psychological frameworks to explore why individuals donate blood. This study uses the Volunteer Functions Inventory (VFI) which is based on Functional Motivational Theory, a widely used theory that categorizes different reasons for volunteering, and applies it to the blood donation context. By using this model and adapting it for local relevance, the analysis moves beyond general notions of “doing good” and takes a deeper look at which specific motivations are more common among regular donors compared to lapsed ones.

Although previous studies have identified general barriers to donation, such as fear or lack of access, there is limited research on how donors perceive the quality of services provided by donation centers, including aspects like staff professionalism, environment, and convenience. These are modifiable factors, yet they have not been thoroughly investigated in the Ethiopian setting, particularly through a comparative lens. This study addresses this gap through by examining whether differences in donors’ service experiences are associated with their continued or discontinued participation. The findings of this study offers practical suggestions into how service delivery can be improved to support better retention outcomes.

Previous studies on blood donation in Ethiopia have predominantly employed quantitative methods using structured questionnaires. While these studies have provided useful statistical overviews, they have offered limited depth in understanding the underlying motivations or contextual factors influencing donor retention. In contrast, this study adopted a

mixed methods approach, combining quantitative data with qualitative interviews to gain a deeper understanding.

Most Ethiopian studies have examined influencing factors, such as demographics, knowledge, attitude and motivation in isolation. What has been lacking is a broader, integrated framework that combines these elements to understand donor behavior more comprehensively. This study introduces such a framework as shown in Figure 1, which brings together knowledge, attitudes, motivational dimensions (based on the VFI). By considering these factors collectively, the study presents a stronger and actionable understanding of what influences sustained donation.

Chapter Three: Methods

The study's design, setting, data sources, sampling, instrument creation and validation, data collection, a pilot study, and data processing methods are all covered in this chapter, along with a discussion of ethical considerations.

3.1. Study Site

This study was conducted in Addis Ababa, the capital city of Ethiopia located in the central highlands at an elevation of 2,355 meters above sea level. With an estimated population exceeding 5 million people (CSA, 2023), Addis Ababa serves as the country's political, economic, and healthcare hub. The city hosts 13 public referral hospitals, including Tikur Anbessa Specialized Hospital, St. Paul's Hospital, and Addis Ababa Burn, Emergency and Trauma Hospital (AABETH), which regularly manage hematologic disorders, trauma cases, and surgical procedures requiring substantial blood supplies.

Blood donation services in Addis Ababa are centralized primarily at two facilities located in Lideta Sub-city: the National Blood and Tissue Bank and the Ethiopian Red Cross Society Blood Donation Center. This study was conducted at the Ethiopian Red Cross Society Blood Donation Center. The site was selected due to its consistently high donor flow, which increases the likelihood of accessing a more diverse and representative sample of both regular and lapsed donors.

3.2. Research Design

The study implemented a concurrent embedded mixed-methods design, in which quantitative data and qualitative data were collected within the same data collection period. In this study, the quantitative component, a structured questionnaire, served as the primary method, while the qualitative component, consisting of semi-structured interviews, was embedded to provide contextual depth and explore specific themes related to donor

motivation and service experience. The embedded design was chosen because the qualitative data was not intended to explain every quantitative result but rather to enrich main areas of interest. This method also enabled collecting both types of data simultaneously allowing for more efficient use of time.

3.3. Study Population

The population for this study were 200 voluntary blood donors who visited the Ethiopian Red Cross Society blood donation center in Addis Ababa during the data collection period, from April 21 to May 8. This time was chosen because it came right after the fasting periods of both Muslim and Orthodox Christian communities, so more people were able and willing to donate. Table 1 shows the socio-demographic characteristics of the participants.

Inclusion Criteria: Participants were voluntary non-remunerated blood donors who presented to donate at the Ethiopian Red Cross Society donation center during the data collection period.

Exclusion Criteria: First-time donors were excluded, as their donation patterns could not be assessed. Individuals donating blood for purposes other than voluntary donation (e.g., replacement or paid donation) were excluded.

Table 1*Socio-demographic Characteristics of Participants*

Characterstics	Category	Frequency	Percentage
Gender	Male	138	69.0
	Female	62	31.0
Age	18 to 25 years	34	17.0
	26 to 35 years	77	38.5
	36 to 45 years	61	30.5
	46 years and above	28	14.0
Marital Status	Married	109	54.5
	Single	63	31.5
	Widower	28	14.0
Education Level	Elementary school	14	7.0
	Up to Grade 12	27	13.5
	TVET/Diploma	7	3.5
	Undergraduate degree	132	66.0
	Postgraduate and above	20	10.0
Occupation	Employed (full-time)	55	27.5
	Employed (part-time)	14	7.0
	Self-employed	131	65.5

3.4. Sample Size and Sampling Technique**3.4.1. Sampling Techniques**

A consecutive sampling method was used in this study. Data was collected as donors came to donate blood at the donation centers. Those who fulfilled the inclusion criteria would participate in the study until the required sample size was met. While this is a non-probability technique, it was appropriate because the study population consisted of voluntary blood donors who visited during a short, fixed data collection period. This approach allowed efficient recruitment and ensured all eligible donors during that time had an equal chance to participate until the target sample size was reached.

3.4.2. Sample Size for Quantitative Part of the Study

The sample size was estimated using Yamane's (1967) formula for finite populations.

From this estimate:

$$n = \frac{N}{1 + N(e)^2}$$

Where N = Target Population

e = tolerance at desired level of confidence, at 95% level (0.05)

n = sample size

$$\text{Accordingly; } n = \frac{200}{1 + 200(0.05)^2} = 134$$

All 200 eligible donors who were willing to participate in the study and visited the donation center during the two-week data collection period (April 21 to May 8) were included in the study. The full inclusion of these participants also helped increase the statistical power of the study and account for potential non-responses.

3.4.3. Sample Size for the Qualitative Part of the Study

Out of the 200 donors who participated in the quantitative survey, 12 individuals were purposively selected for follow-up qualitative interviews. The purpose was to ensure a diverse range of perspectives by considering different characteristics identified from their questionnaire responses such as donation frequency (regular vs. lapsed), number of past donations, gender, age group, and marital status. The intention was not to achieve statistical representativeness, but to gain in-depth understanding coming from different backgrounds which were relevant to the study objectives. Only those who indicated willingness to be contacted further were included. Among the selected participants were two individuals with O-negative blood type, and among the regular donors, those who had donated more than 20 times were prioritized, as they represent long-term commitment to blood donation. Of the 12

participants, six were regular donors and six were lapsed; seven were male and five were female. Half were married, and nine had completed their undergraduate degrees. In terms of age distribution, one participant was aged 18 to 25, five were between 26 and 35, four were in the 36 to 45 age range, and two were 46 years or older.

3.5. Data Collection Instruments and Procedures

3.5.1. Data Collection Instruments

The questionnaire consisted of six parts, a) The first part assessed donors' background information, b) The second part evaluated donation practices and recruitment channels, c) The third part contained ten knowledge questions about blood donation, scored as 0 (*incorrect*) or 1 (*correct*) (Sahlu & Tadesse, 2023; Zeleke & Azene, 2022), d) The fourth part measured attitudes using seven statements with a 5-point Likert scale (*strongly disagree* to *strongly agree*) (Sahlu & Tadesse, 2023; Zeleke & Azene, 2022), e) The fifth part assessed views on blood bank services using a 5-point Likert scale (*strongly disagree* to *strongly agree*) (Misje et al., 2005), f) The final part evaluated donor motivation using 17 items. Seventeen items were adapted from the Volunteer Functions Inventory (VFI) (Clary & Snyder, 1999) for blood donors, as modified by Misje et al. (2005). Career-related items from the original VFI were excluded as they were not applicable to blood donation. The motivational items covered five factors: Value/empathetic altruism, Protective, Social, Esteem/enhancement, and Understanding. Four additional items were added to assess moral and health-related factors (Misje et al., 2005). (1) 'Value' motives which refer to altruistic and empathic reasons for volunteering (e.g., helping others, compassion, important cause). (2) 'Social' reasons reflect the normative influence of friends, family, or a social group that motivates people to volunteer. (3) 'Esteem' represents reasons for volunteering in order to feel better about oneself (e.g., feel better about myself, feel important) by helping others. (4) 'Understanding' refers to positive experiences associated with volunteering (e.g., 'explore own strengths',

'learn from experience'). All motivation items used a 5-point Likert scale from (*strongly disagree* to *strongly agree*) and were presented in mixed order to respondents. The qualitative interview was semi structured and included six questions.

Validity Test

Validity refers to the degree to which a measure accurately represents what it is intended to measure. It ensures that the concept under study is well-defined by the measurement instrument. To ensure the validity of this study, multiple strategies were implemented throughout the research process.

Content validity was addressed by adapting knowledge and attitude part of the questionnaire from previously validated instruments used in Ethiopian donor studies. To further strengthen this, the questionnaire was reviewed by three experts from different fields: psychology, public health, and blood bank services. They confirmed the relevance, clarity, and completeness of the items.

Construct validity was examined through factor analysis for motivational items adapted from the Volunteer Functions Inventory (VFI; Clary & Snyder, 1999) and Misje et al. (2005), as these scales required contextual validation for Ethiopia.

Face validity was assessed through pilot testing with 20 participants as detailed in Appendix E. Their feedback, alongside observation of their responses and time taken, helped identify items that were confusing, redundant, or culturally inappropriate. Necessary adjustments were made accordingly. Additionally, proper language translation procedures helped ensure the instrument was contextually and linguistically appropriate, contributing to the overall validity of the tool.

Reliability tests

Internal consistency of the questionnaire was assessed for both the main and pilot study using Cronbach's alpha with values ≥ 0.7 considered acceptable. As shown in Table 2,

final analysis demonstrated internal consistency coefficients in the acceptable range for all constructs: knowledge ($\alpha = 0.734$), attitude ($\alpha = 0.741$), and the four motivational variables (Value: $\alpha = 0.897$, Reward: $\alpha = 0.851$, Esteem: $\alpha = 0.889$; Social: $\alpha = 0.945$). The internal consistency coefficient of the total motivation scale ($\alpha = 0.762$) is also in the acceptable range.

Table 2

Reliability of Scales of the Main Study

Scale/subscale	Cronbach's α	N of Items
Knowledge	0.734	10
Attitude	0.741	7
Value	0.897	5
Reward	0.851	5
Esteem	0.889	4
Social	0.945	3
Total Motivation Items	0.762	17

3.5.2. Data Collection Procedure

Data Collection for Quantitative Data. The data collection period lasted for two weeks. Data were collected using a pre-tested, structured questionnaire, prepared in both English and Amharic to accommodate participants' language preferences.

Prior to the actual data collection, the tools were pre-tested as presented in Appendix E. The translation process involved forward translation into Amharic and back-translation into English by language experts to ensure linguistic and conceptual equivalence.

The data collection process involved self-administered surveys. Three data collectors received a one-day training session on the study objectives, questionnaire content, and ethical considerations to ensure standardized and respectful data collection. They also provided clarification as needed and ensured respondents understood each question before answering.

The researcher supervised the process on a daily basis, reviewed questionnaires for completeness and consistency, and provided immediate feedback to the data collectors.

Data Collection for Qualitative Data. Following consent, a semi-structured interview was conducted with the participants at the Red Cross donation center. The purpose of the questions was to get better insight to answer the research questions of this study and complement the quantitative findings. In order to allow participants to expand on their answers, tactful follow-up questions occasionally supplemented the main questions. With the participants' consent, audio recordings of every response were made. One interview took, on average, fifteen minutes to finish.

3.6. Data Analysis

Both quantitative and qualitative methods were used in this study. The quantitative data were analyzed using SPSS Version 27. The responses were first checked for completeness and edited for accuracy. Quantitative analyses included both descriptive and inferential statistics. Qualitative data from in-depth interviews were thematically analyzed to contextualize the quantitative findings.

3.6.1. Descriptive statistics

Descriptive statistics using frequencies and percentages were used to summarize the socio-demographic characteristics of the donors, including gender, age, education level, employment status, donation history and recruitment methods.

3.6.2. Chi Square Test of Independence

Chi square test of independence was used to assess the relationship between knowledge and donor status. Knowledge items were coded “1” for correct responses and “0”

for incorrect responses. Participants who scored 70% or higher on the knowledge assessment were categorized as having adequate knowledge.

Assumptions checked:

- The variables were categorical.
- Independence of observations, each participant contributes data to only one cell in the contingency table.
- The assumption of expected frequency was met, with no expected cell count less than 5, as required for a valid Chi-square test.

3.6.3. Independent samples t-test

Independent samples t-tests were conducted to compare views of service provided by the donation center scores, as well as attitude scores between regular and lapsed donors. For attitude items, after calculating the mean values of the study participants, those who scored above the mean were labeled as having a “favorable attitude.” Negatively worded Likert scale questions, 9 out of 11 service perception items and 3 out of 7 attitude items, were reverse scored prior to analysis to maintain consistent directionality in measurement.

Assumptions checked:

- The dependent variables (attitude score and view of service score) were continuous.
- The independent variable (donor status) was categorical (binary).
- Independence of observations was met.
- Homogeneity of variances was assessed using Levene’s Test. For service perception, Levene’s test was not significant, $F = 0.02$, $p = .891$, and for attitude score, $F = 0.23$, $p = .632$, indicating that the assumption of equal variances was met in both cases.
- Normality was assessed using Shapiro-Wilk tests and indicated violation for both variables [Attitude: Lapsed ($W = .928$, $p = .001$), Regular ($W = .883$, $p < .001$)] and [Service: Lapsed ($W = .957$, $p = .021$), Regular ($W = .954$, $p < .001$)]. As shown in

the figures in Appendix F, visual inspection (histograms, Q-Q plots) confirmed left-skewed distributions, consistent with donors' uniformly favorable responses. Despite non-normality, parametric t-tests were retained because group sizes exceeded minimum thresholds expected $n > 30$ for both groups (Lapsed: $N = 68$; Regular: $N = 132$), satisfying Central Limit Theorem requirements (Field, 2018). In addition, sensitivity analyses (Mann-Whitney U tests) was conducted and yielded significance patterns matching the t-test results [Attitude: $U = 3162, p < .001$; Service: $U = 3599, p = .021$]. Effect sizes (Cohen's d) were also computed to quantify practical significance.

3.6.4. Factor Analysis

Principal component analysis, a data reduction technique, was used to reduce dimensionality and identify latent constructs among motivation items for blood donation. Factors were extracted using the varimax rotation method, and the number of retained factors was determined using the eigenvalue > 1 criterion and a scree plot of the unrotated factor matrix. The rotated factor matrix was obtained using oblique rotation to yield a simpler factor pattern. Only factor loadings greater than ± 0.40 were considered meaningful.

Assumptions Checked:

- Kaiser-Meyer-Olkin (KMO) value was 0.656, indicating acceptable level sampling of adequacy for factor analysis.
- Bartlett's Test of Sphericity was also adequate for PCA [$X^2(136) = 3506.731, p < .001$].

3.6.5. Logistic Regression

A binary logistic regression analysis was conducted to examine the association between knowledge, attitudes toward blood donation, and donor status (regular vs. lapsed donors).

Assumptions Checked:

- Multicollinearity among predictor variables was assessed using the Variance Inflation Factor (VIF) and Tolerance values. A $VIF > 5$ or $Tolerance < 0.1$ was considered indicative of problematic multicollinearity. Multicollinearity test indicated no concerning correlations among predictors, with all VIF values < 2 (Range: 1.005–1.100) and Tolerance values > 0.9 .
- The internal consistency of each factor was assessed using Cronbach's alpha, a measure of internal consistency reliability, and was found to be adequate. A p -value of 0.05 was set to determine statistical significance of the results.

3.6.6. *Qualitative data*

The qualitative data was analyzed manually. The tape recordings from the in-depth interview were transcribed verbatim, and the transcripts were coded thematically. Next, similarities were identified, differences resolved, and consensus was achieved. Verbatim passages were selected from the transcript to illustrate the themes.

3.7. Ethical Considerations

The researcher adhered to the APA Guidelines for ethical practices while conducting this study. Ethical clearance was obtained from the Research Ethics Committee of the School of Psychology, Addis Ababa University. The Ethiopian Blood and Tissue Bank, which oversees blood donation centers nationally, provided approval for the participation of voluntary donors in this study.

Data collection was performed by ensuring all basic ethical principles. The purpose and rationale of the study were briefly explained to all study participants. The researcher clearly explained the study's purpose, as part of fulfilling the requirements for a Master's Degree program. Each respondent was given full right to decide on their participation in the

study. Potential benefits, such as contributing to an improved understanding of donor motivation, and the absence of significant risks were communicated. Participants retained the right to skip any questions that made them uncomfortable and could withdraw from the study at any time without consequence.

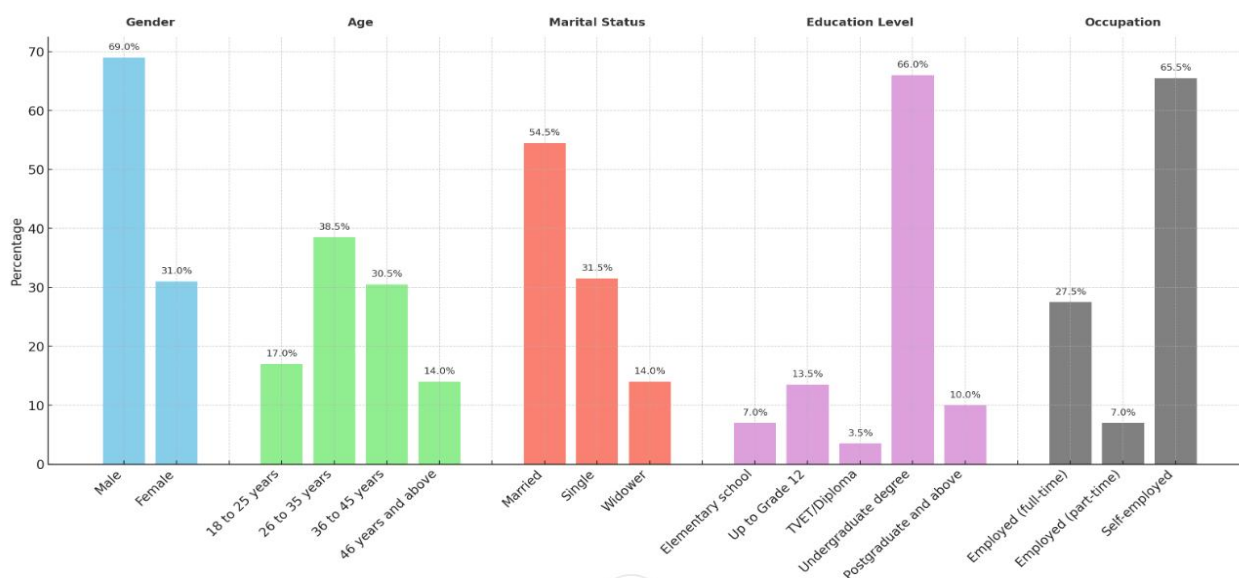
Throughout the study period, the information of the participants was kept confidential. Additionally, the researcher and assisting data collectors assured participants that their information would remain confidential and that their participation would not expose them to any harm. Written informed consent was taken from each participant before distributing the questionnaire.

Chapter Four: Results

This chapter presents both the quantitative and qualitative findings of this study. The quantitative findings present the analysis of socio-demographic characteristics of participants, experiences with blood donation, and respondent's knowledge, attitude towards blood donation, and motivation of blood donation showing the association of these variables with blood donor status (regular vs lapsed). The qualitative report presents the main theme from interviews conducted with 12 voluntary blood donors (6 regular, 6 lapsed) to deepen the understanding of motivations, perceived benefits, and barriers associated with blood donation. Several recurring themes emerged from participants' narratives, which both complement and expand upon the findings of the quantitative questionnaire.

4.1. Socio-demographic Characteristics

A total of 200 respondents gave their complete responses which made a response rate of 100%. As shown in Figure 2, the majority of the study participants were 26 to 35 years, and the majority (69%, n=138) of them were males. Most respondents were married (54.5%, n=109) and held undergraduate degrees (66%, n=132). Regarding employment status, 65.5% (n=131) reported being self-employed, while only 27.5% (n=55) worked full-time for an employer. None of the participants was working in healthcare sectors.

Figure 2*Socio-demographic Characteristics of Participants*

There were 12 participants in the interview, of whom 7 were men and 5 were women. 6 of them were married and 9 of them had completed their undergraduate degrees. Participants were coded from D1-D12.

4.2. Experience of Participants related to Blood Transfusion History

Table 3 shows that, of the 200 participants, 66% (n=132) are regular blood donors and 34% (n=68) are lapsed donors. Most donors (76.5%, n=153) reported using Red Cross Donation Centers for blood donation. Regarding transfusion history, 20.5% (n=41) had family members or friends who received blood transfusions, though only 7% (n=14) had personally received a transfusion. Majority (72.5%, n=145) of the respondents participate in voluntary or charity work, with nearly half (44.5%, n=89) contributing both monetary donations and service.

Table 3*Blood Donation Related History*

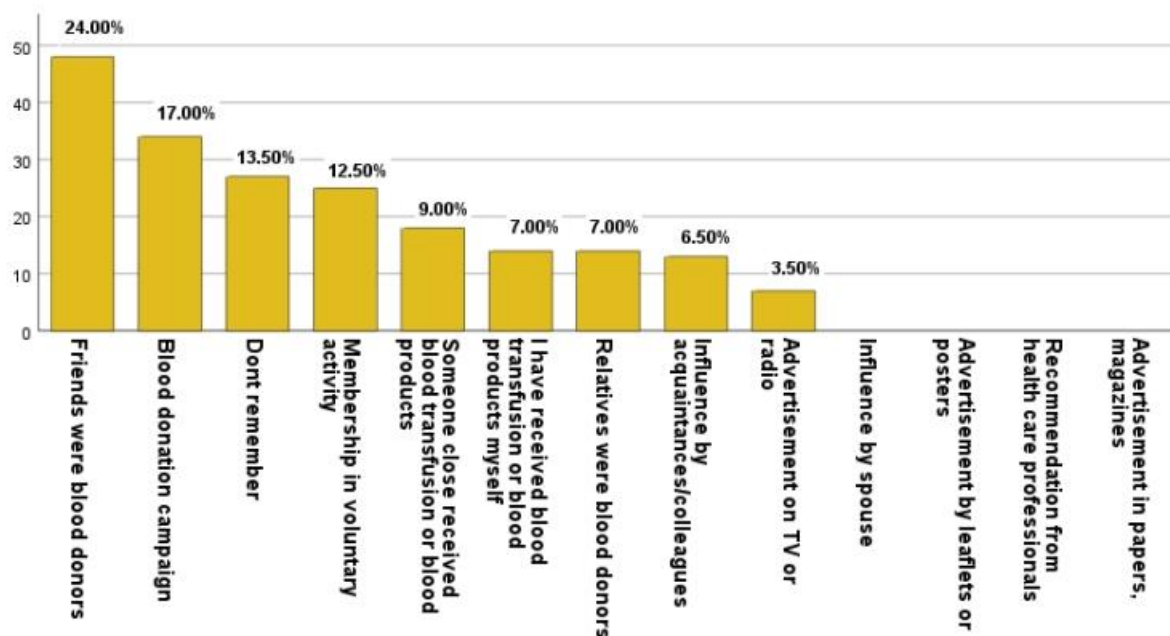
Characteristics	Category	Frequency	Percentage
Donor status	Regular	132	66.0%
	Lapsed	68	34.0%
Where do you usually donate?	Red Cross Donation Center	153	76.5%
	Mobile Donation Centers	47	23.5%
Have any of your family members or friends, received blood transfusion or blood products?	Yes	41	20.5%
	No	159	79.5%
Have you yourself received blood transfusion?	Yes	14	7.0%
	No	186	93.0%
Do you participate in voluntary or charity work?	Yes	145	72.5%
	No	55	27.5%
What kind of charity/service do you give?	Monetary contribution	56	28.0%
	Both	89	44.5%

4.3. Sources of Information (Primary Recruitment Channel) Influencing the Decision to Start Donating

As shown in Figure 3, influences from other donors were the most significant factors motivating first-time blood donation. Friends being blood donors (24.0%), relatives being donors (7.0%), and influence from acquaintances/colleagues (6.5%) cumulatively accounted for 37.5% of the responses. Blood donation campaigns were the second most influential source (17.0%), followed by membership in voluntary activities (12.5%). Personal connections to transfusion, either through direct experience (7.0%) or someone close (9.0%), collectively represented 16.0% of influences. Traditional media (TV/radio advertisements) played a minor role (3.5%).

Figure 3

Percentage Distribution of Sources of Information Influencing First Time Blood Donation



Interestingly, seven of the respondents from the interview traced their first donation to school or college campaigns. Some mentioned incentives like avoiding classes or getting snacks motivated them to donate. Even though, these first time donations were not always altruistically motivated it helped lower psychological barriers and often led to continued, regular donation habits in adulthood. (D2, male, 28) humorously recalled “My friends and I didn’t have lunch that day, so when we heard we’d get biscuits and soft drinks after donating, we were happy to do it. But I’ve kept donating ever since.” (D5, male, 40) shared his first experience “I started donating blood starting from 18 years of age, after my cousin was suddenly diagnosed with an illness that required transfusion. I had to beg a lot of people for him to get replacement donation. It was a painful experience. Since then I have donated blood regularly and this is my 56th donation.” This shows how different experiences could lead to

donation and help first-time donors overcome initial hesitation. Once that barrier is broken, many donors continue out of habit, personal belief, or a deepened sense of purpose.

4.4. Views on Services at the Blood Bank

Table 4 shows that participants largely have positive experiences regarding their visits to the blood bank except one item with a mean score below 3.

Table 4

Descriptive statistics of items assessing views on services at the blood donation center (N=200)

Item	<i>M</i>	<i>SD</i>
It really bothers me filling out forms and screening questionnaires before donation	3.86	.739
I think the atmosphere at the blood bank is really pleasant	4.03	.829
Blood bank staff are extremely competent	3.78	.862
Facilities at the blood should be better equipped for receiving blood donors	3.22	.778
I find it hard to find a parking lot when I donate	3.41	.845
I spend too much time waiting when donating blood	3.94	.631
I think the compensation I receive for donating should be better	3.61	1.520
Coming to the blood bank takes a lot of effort	2.92	1.512
I think donating is really unpleasant	4.30	.602
The blood bank should have longer opening hours	3.14	1.150
I appreciate getting a small token “gift” for having donated blood	3.95	.968

Note. Negatively worded items are reverse scored. Higher mean shows positive experience.

Table 5 presents an independent samples t-test conducted to compare the service perception scores for regular donors and lapsed donors. The results indicated a statistically significant difference in service perception scores between the two groups, $t(198) = 2.31$, $p = .022$. Regular donors ($M = 40.67$, $SD = 4.50$) reported significantly higher service perception scores than lapsed donors ($M = 39.13$, $SD = 4.41$). Levene's test for equality of variances was not significant, $F(1, 198) = 0.02$, $p = .891$, indicating that equal variances could be assumed. The mean difference in service perception scores between regular and lapsed donors was 1.54, with a 95% confidence interval ranging from 0.23 to 2.86. The effect size, calculated using Cohen's d , was 0.35, which suggests a small to medium effect. Sensitivity analysis using Mann-Whitney U confirmed this difference, with regular donors ranking significantly higher ($U = 3162$, $p < .001$, $r = .25$). Despite left-skewed distributions (Shapiro-Wilk $p < .001$), parametric testing was valid due to large sample robustness and congruent non-parametric results.

Table 5

Table Summarizing the Mean, SD and t-test Result of Regular and Lapsed Donor's View on services given by the Blood Donation Center

Variable	Group	N	M	SD	$t(198)$
Service Perception	Regular	132	40.67	4.50	2.31*
	Lapsed	68	39.13	4.41	

Note. * $p < .05$, two-tailed.

An important concern raised by nearly all participants was the decline in communication from the donation center over the past two years. They have not been receiving reminder messages that used to be sent out to donors once three months had passed since their last donation. Participants emphasized that while they remain motivated to donate,

daily responsibilities often cause them to forget. “You know how busy life has become, as a working mom I have a lot in my mind. I don’t even remember how the time flew since my last donation” (D8, female, 36). Reminder messages had served as both a practical and psychological nudge. Moreover, thank-you messages and notifications about their blood being used for a patient provided a strong sense of accomplishment and purpose, reinforcing their willingness to continue donating. The absence of this feedback led some to question whether their donations were used or discarded, potentially undermining future motivation. “We want to know that our effort mattered. Getting that message that your blood was given to someone, it used to make us feel proud” (D2, male, 28).

Concerns were also raised about the limited number of permanent donation centers, both of which are located near Stadium and Lideta areas. Many felt this created a geographical barrier, particularly for those living or working in other parts of the city. “I came from Ayat, it is far from here. I would not have donated today if I didn’t have an errand to pick around here” (D1, male, 45).

While mobile donation campaigns exist, often at crowded transit hubs like Megenagna or Mexico, participants reported feeling uncomfortable donating in public spaces or found it inconvenient during busy hours. “Honestly, I don’t feel like the set up in mobile donation centers is as sterile” (D4, male, 29).

4.5. Knowledge of Participant towards Blood Donation

74% of participants demonstrated good overall knowledge. The highest correct responses (100%) were observed for knowledge on blood donation interval and blood shortage awareness, while the lowest correct response (39.5%) was for age limit for blood donation. A Chi-square test of independence was conducted to examine the association between donor status (regular vs. lapsed) and knowledge level (adequate vs. inadequate). As shown in Table 6, there was a statistically significant association between donor status and

knowledge level, $\chi^2(1, n = 200) = 11.48, p = .001$. The result of the Continuity Correction (used for 2x2 tables) also supported this finding, $\chi^2(1) = 10.44, p = .001$, as did the Likelihood Ratio test, $\chi^2(1) = 11.29, p = .001$. Additionally, Fisher's Exact Test confirmed the significance of the result, $p = .001$. No expected cell count was less than 5, satisfying the assumption of expected frequency. These results suggest that regular donors were more likely to have adequate knowledge compared to lapsed donors.

Table 6

Association Between Donor Status and Knowledge Level (Chi-Square Test Results)

Tests	Value	df
Pearson Chi-Square	11.477***	1
Continuity Correction	10.444***	1
Likelihood Ratio	11.294***	1
Fisher's Exact Test	-	
Linear-by-Linear Association	11.419***	1
N of Valid Cases	200	

Note. *** $p < .001$, two-tailed.

All respondents agree they were adequately communicated about donation intervals (3 months) by the blood donation staff. One third were not sure about the minimum weight and age limit. “We are mostly informed that we are fit to donate, not the details” (D7, male, 28). Most respondents also mentioned not being properly informed about eligibility criteria. Fear of the risks of blood donation is a major barrier for most people to avoid blood donation. Most of them mentioned that people they know who don't donate blood usually say they were underweight or weak to donate blood. A common phrase being: “Yetignaw demen liset new” (“I don't even have enough blood to give”). “Some of my female friends don't donate because they fear they will be anemic” (D9, female, 25). This misconception may deter

otherwise healthy individuals from participating. Moreover, while awareness of blood shortages is high, knowledge about specific eligibility guidelines and medical safety of donation remained variable. There was strong agreement, however, on the need to improve public education efforts about the safety and benefits of blood donation.

4.6. Attitude of Participants towards Blood Donation

The most widely agreed statement from attitude items was 'All eligible people should donate blood,' with 95.5% agreement. The most disagreed statement was 'Blood should be donated to family only,' with 100% disagreement. Other notable findings include strong support for voluntary donation (79%) and the belief that financial compensation is not appropriate (67%). Table 7 shows an independent samples t-test result comparing attitude scores between regular and lapsed donors. Regular donors ($M = 30.51$, $SD = 2.90$) demonstrated significantly more positive attitudes than lapsed donors ($M = 28.93$, $SD = 2.99$), $t(198) = 3.62$, $p < .001$. Levene's test indicated equal variances ($F = 0.23$, $p = .632$), so the equal variances assumed results were interpreted. The mean difference of 1.58 points (95% CI [0.72, 2.44]) represented a medium effect size (Cohen's $d = 0.54$, 95% CI [0.24, 0.84]). Mann-Whitney U tests validated this finding ($U = 3599$, $p = .021$, $r = .16$). The parametric approach remained appropriate given group sizes and homogeneity of variances.

Table 7

Comparison of Attitude Scores Between Regular and Lapsed Donors

Variable	Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i> (198)
Attitude Score	Regular	132	30.51	2.90	3.62***
	Lapsed	68	28.93	2.99	

Note. *** $p < .001$, two-tailed.

4.7. Motives for Donating Blood

Factor Analysis

Principal Component Analysis (PCA) with Varimax rotation was used to explore the underlying motivational dimensions for blood donation. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.656, indicating a moderate level of adequacy for factor analysis. Bartlett's Test of Sphericity was adequate for PCA [$\chi^2(136) = 3506.731, p < .001$].

Four components were extracted based on Kaiser's criterion (eigenvalue > 1) and scree plot as shown in Figure 4. The rotated component matrix was used to interpret the components, and items with loadings greater than ± 0.40 were considered significant contributors.

As shown in Table 8, the first component had the largest eigenvalue of 4.557, accounting for 26.80% of the total variance. The second component had an eigenvalue of 3.718, explaining an additional 21.87% of the variance, bringing the cumulative variance to 48.68%. The third component, with an eigenvalue of 2.786, contributed 16.39%, and the fourth component, with an eigenvalue of 1.870, explained 11.00% of the variance. Collectively, the four retained components explained 76.07% of the total variance in donor motivations, indicating a strong underlying structure in the data.

Component 1 (Value). This component had strong loadings from items H, J, M, P, and G, all of which relate to altruistic and moral motivations. This component reflects internalized moral and humanitarian values and was related to the value factor of VFI.

Component 2 (Reward). Items F, O, L, K, and Q loaded significantly on this factor. These items emphasize personal benefits, including health-related motives and psychological rewards. This component was labeled as reward factor .

Component 3 (Esteem). This component included items B, D, A, and E, which relate to self-worth and identity. This component related to the enhancement/esteem factor of the VFI.

Component 4 (Social). This component captured external, socially driven motivations, with high loadings from I, C, and N. This component related to the social factor of the VFI.

Figure 4

Scree Plot of the Eigen Values on the Un-Rotated Factor Matrix

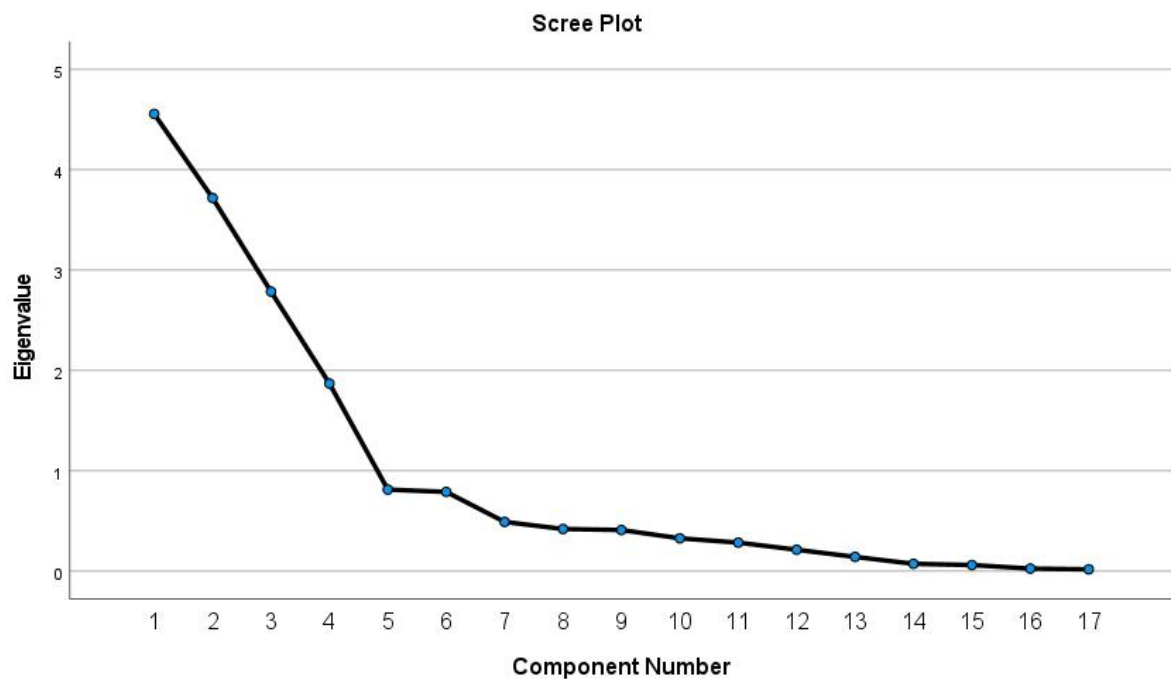


Table 8

Summary of Results from Principal Component Analysis using Varimax Rotation for reasons to donate blood (N = 200)

Items	Component 1	Component 2	Component 3	Component 4	Commonalities
B. Donating blood makes me feel important			.924		.917
D. Blood donation increases my self-esteem			.870		.806
A. Blood donation is a cause that is important to me			.801		.661
E. Donating blood makes me feel better about myself			.868		.788
F. I think blood donation benefits my own health		.868			.801
O. An important reason for donation is that I get a health check for free		.891			.836
L. Donating blood makes me feel needed		.794			.707
K. By donating blood I can explore my own strengths		.758			.649
Q. Donating blood relieves me of some of the guilt over being more fortunate than others.		.587			.356
I. My friends think it is important that I donate blood				.962	.932
C. My friends donate blood				.916	.906
N. People I know share an interest in donating blood				.921	.916
H. I donate because I feel great compassion towards the receivers of blood products	.893				.799
J. I donate blood because it is important to help other people.	.890				.800
M. Blood donation is an important part of who I am	.773				.624
P. I can do something for a cause that is important to me	.871				.771
G. For me blood donation is primarily a moral duty	.803				.661
%variance explained	26.804	21.873	16.388	11.002	
Eigen Value	4.557	3.718	2.786	1.870	

Note: Component 1 = Value, Component 2 = Reward, Component 3 = Esteem, and Component 4 = Social. The ‘Value’, ‘Esteem’, and ‘Social’ components align with the original factors defined in the VFI. Component 2, labeled ‘Reward’ in this study, reflects a combination of the ‘Protective’ and ‘Understanding’ functions from the VFI, along with motivations related to perceived health benefits.

All participants agreed on the idea that blood should be donated primarily with the intent to help others. Most viewed blood as a renewable resource they could spare to save lives. “If my blood can help someone and it costs me nothing, why wouldn’t I give it? It’s not like I’m losing something permanent” (D12, female, 40). Some donors linked this mindset to religious beliefs. “It’s a form of sadaqa (charity)” (D7, male, 28). “What if my family needed blood someday” (D5, male, 40).

Two participants who had O-negative blood type said it gives them a sense of obligation because their blood type is more needed. “I am a member of a legally established society for O-negative donors. We have social media groups. We get reminders and even socialize in person”(D4, male, 29). This group maintained communication, social events, and regular donation schedules, typically every three months. The existence of such support networks appears to increase both consistency and morale among group members.

A striking finding from the interview with participants was that nearly all participants mentioned a health-related benefit not included in the questionnaire. They had a belief that blood should be “recycled” every three months. Donors described this as a natural process of body renewal. One participant even linked this idea to traditional health practices, “Bloodletting is a common blood cleansing practice in several traditional communities. I believe there is a wisdom there” (D3, male, 34). Some also believed blood donation helped them avoid negative health behaviors, such as getting tattoos or poor lifestyle choices, because they viewed the act of donation as requiring bodily purity. A few even described a spiritual connection between the donor and the recipient, which motivated them to maintain good behavior and health, believing their character would be “transferred” with the blood. “I feel like I should be a better person if someone receives my blood” (D4, male, 29).

4.8. Predictors of Donor Status

A binary logistic regression analysis was conducted to examine whether knowledge, attitude, value, esteem, social, reward variables predicted blood donor status (regular vs. lapsed donors). Table 9 shows the result of the relationship between the independent and dependent variables using binary logistic regression. As shown in the table, the full model containing all predictors was statistically significant, $\chi^2(6) = 42.83$, $p < .001$, indicating that the model was able to distinguish between regular and lapsed donors.

Influence of Attitude on Donor Status

Attitude score significantly predicted donor status, $B = 0.220$, $SE = 0.062$, $Wald = 12.718$, $p < .001$. The odds ratio ($Exp(B) = 1.246$) suggests that with each unit increase in attitude score, participants were 24.6% more likely to be regular donors.

Influence of Knowledge on Donor Status

Knowledge was not a significant predictor of donor status ($B = 0.184$, $SE = 0.101$, $Wald = 3.311$, $p = .069$).

Motivational Factors Sustaining Long-Term Blood Donation Practices

The logistic regression analysis also explored which motivational factors predicted long-term blood donation practices (i.e., being a regular donor). Value-based motivation was also a significant predictor, $B = 0.830$, $SE = 0.192$, $Wald = 18.702$, $p < .001$. Those who endorsed altruistic values were more than twice as likely to be regular donors ($Exp(B) = 2.292$).

Other motivational dimensions, including reward ($B = -0.009$, $SE = 0.176$, $Wald = 0.003$, $p = .958$), esteem ($B = -0.227$, $SE = 0.174$, $Wald = 1.705$, $p = .192$), and social influence ($B = 0.011$, $SE = 0.172$, $Wald = 0.004$, $p = .951$), were not significant predictors of donor status.

Table 9*Binary logistic regression result Predicting Donor Status (Regular vs. Lapsed Donors)*

Variables	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Exp(B)</i>
Knowledge	.184	.101	3.311	1	1.203
Attitude	.220***	.062	12.718	1	1.246
Value	.830***	.192	18.702	1	2.292
Reward	-.009	.176	.003	1	.991
Esteem	-.227	.174	1.705	1	.797
Social	.011	.172	.004	1	1.011
Constant	-7.151***	2.015	12.590	1	.001

Note. *** $p < .001$

Chapter Five: Discussion

The key findings of the current study were interpreted in this chapter in relation to the main themes of the research questions and the body of prior literature. The most important study findings were discussed under each of the research questions. Findings derived from both quantitative and qualitative data were the main issues for the discussion.

5.1. Primary Recruitment Channel (Source of Information) Influencing Individuals to become Blood Donors

The findings on first time donation showed influences from other donors, including friends, relatives, and acquaintances/colleagues, cumulatively accounted for 37.5% of responses. This finding shows the power of social networks and the potential for word-of-mouth encouragement in driving initial donation. A study by Misje et al. (2005) also indicated that the single most important recruitment channel was the influence of active blood donors. Therefore, active blood donors are likely the best suited to recruit and motivate others to become committed donors. Blood donation campaigns are also an important first-time recruitment strategy, accounting for 17% of responses. The qualitative finding showed that there could be different motivations for blood donation and campaigns in schools and religious places are among the important ones. The positive impact of previous campaign participation on donation likelihood was supported by other studies (Mohammed et al., 2022). This indicates the importance of proactive outreach and awareness initiatives in reaching potential new donors and retaining them. Regarding transfusion history, a notable proportion of participants (20.5%) reported having family members or friends who had received blood transfusions, although a smaller percentage (7%) had personally received one. A study conducted in Gondar town revealed that adults who had a history of relatives dying due to blood loss were significantly more likely to express a willingness to donate blood (Zelege &

Azene, 2022). Experiencing the life-saving impact of blood transfusion, even indirectly through loved ones, can be a powerful motivator for voluntary donation.

5.2. Views on Services Given by the Blood Bank

Regarding the views participants have about blood bank service, majority of respondents reported a positive experience. Item like ‘it takes a lot of effort to come to the blood bank’ and ‘Facilities at the blood should be better equipped for receiving blood donors’ had lower mean score than the other items. The finding also showed significant difference in view of services between regular and lapsed donors. The qualitative data also showed dissatisfaction among donors in respect to communication from the blood bank and limited permanent donation sites. Respondents mentioned the importance of reminder messages play in avoiding forgetfulness. Messages that their blood was given to someone used to be a huge motivation to donate regularly. It helped them feel that their effort was meaningful. Additionally, the limited number of permanent donation centers was seen as a barrier, particularly for those residing in other parts of the city. Although mobile donation centers exist, their placement in public or crowded areas was often viewed as inconvenient or uncomfortable. Thus, while the overall experience of participants remain positive, both the survey and interviews suggest there is a room of improvement in communication and accessibility that could enhance donor motivation and retention.

5.3. Knowledge about Blood Donation

The analysis showed that a significant majority (74%) of participants, who were all blood donors, demonstrated adequate overall knowledge about blood donation. This level of knowledge is higher than what has been reported in several community-based studies across Ethiopia (Moges et al., 2016; Sahlul & Tadesse, 2023; Tsega et al., 2024). This higher knowledge level among participants is expected, as they are already participants in the blood

donation process. These gives them the advantage of receiving information compared to the general public.

When comparing these findings to studies involving specific subgroups, the knowledge levels of the donor participants appear to be comparable to or even slightly lower than those observed among students, particularly in health-related fields (Mussema et al., 2024; Regassa et al., 2024). On the other hand, a study at Arbaminch University CMHS reported a lower adequate knowledge level below 50% among their students.

Regarding specific knowledge areas, the highest correct responses (100%) were for knowledge on blood donation interval and awareness of blood shortages. Conversely, the lowest correct response (39.5%) was related to the age limit for blood donation. The qualitative report also supports this finding. This suggests a potential knowledge gap in specific eligibility criterion that needs to be addressed in donor education efforts.

5.4. Attitude towards Blood Donation

Concerning attitudes towards blood donation, the results showed that all participants held favorable attitudes. The finding in this study is higher than the pooled prevalence of favorable attitudes (65.28%) reported in systematic reviews of the Ethiopian population (Getie et al., 2024). It is also higher than the favorable attitude rates found in various community studies (Mecha & Erchafo, 2022; Moges et al., 2016; Mussema et al., 2024; Regassa et al., 2024; Sahlu & Tadesse, 2023). The uniformly favorable attitude in the donor sample is expected, as a positive disposition likely contributes to the decision to donate and continue donating blood. While the t-test and regression analysis indicated significant attitude differences between the two donor groups (though all were above the mean), the overall high level of favorable attitudes suggests that attitudinal barriers may be less significant among existing donors compared to the general population.

The strong association between good knowledge and favorable attitudes towards blood donation, is consistently reported in Ethiopian studies (Getie et al., 2024; Mecha & Erchafo, 2022; Nigussie et al., 2020; Sahlu & Tadesse, 2023; Tsega et al., 2024). These association could have contributed to the high levels of both knowledge and positive attitudes observed in the donor population. While socioeconomic factors like education and income have shown some links with attitudes in certain studies (Mecha & Erchafo, 2022), the uniformly high favorable attitude in the donor sample might mask these potential associations within this specific group. Overall, these findings indicate that while knowledge levels among donors are higher than the general population, targeted education efforts are still needed to address specific knowledge gaps, such as the age limit for donation. Furthermore, the universally favorable attitudes within the donor sample suggest that maintaining this positive disposition through continued engagement and addressing any potential concerns is mandatory for donor retention.

5.5. Blood Donation Motivation

Factor analysis result showed a four-factor structure of donor motivation: Value, Reward, Esteem/Enhancement, and Social, collectively explaining 76.07% of the variance. This suggests a strong underlying structure of motivations within the study population.

The first factor, Value, which captured altruistic and moral motivations (e.g., compassion and helping others), are consistent with findings from numerous studies. For instance, the studies from Mohammed et al. (2022) and Regassa et al. (2024) indicated moral satisfaction and altruism to be a major drivers for blood donation. This factor's prominence, indicated by the largest eigenvalue (4.557), shows the importance of prosocial values in driving blood donation behavior in the study population.

The second factor, Reward, includes personal benefits such as free health checks and feeling needed. While the emphasis in blood donation campaigns is typically on altruism, this factor suggests that perceived personal benefits can also play a role, particularly in the decision to donate. This is supported from findings from Mecha & Erchafo (2022), that potential rewards like health screenings were considerations for donation. Similarly, a study in Nigeria found that some donors reported donating due to perceived benefits from the hospital.

The third factor, Esteem/Enhancement, captured motivations related to self-worth and feeling important. This aligns with the 'Enhancement' function of the Volunteer Functions Inventory (VFI). The finding is consistent with studies like Aworanti et al. (2024) in Nigeria, who identified 'self-esteem' as a significant motivational dimension. Basukala et al.'s (2015) qualitative study in India also found that donors reported increased self-esteem from donating blood.

The fourth factor, Social, reflected external, socially driven motivations, such as friends and acquaintances donating blood. This aligns with the 'Social' function of the VFI and is consistent with studies that have identified the relationship of social influence on donation behavior (Basukala et al., 2015; Kampira et al., 2019; Saha & Chandra, 2018).

The binary logistic regression analysis found that attitude and value-based motivation were significant predictors of donor status (regular vs. lapsed). Participants with more positive attitudes towards blood donation had a higher chance of becoming regular donors. This finding is intuitive, as a favorable disposition towards an activity often leads to its continued engagement.

Furthermore, individuals driven by value-based motivations (altruism and moral concerns) were more than twice as likely to be regular donors. This finding strongly supports the notion that intrinsic, prosocial motivations are key to sustained donation behavior. This finding is consistent with the broader literature emphasizing the importance of altruism in donor retention (Getie et al., 2024; Zhang et al., 2021). The stronger influence of value-based motivation on regular donation compared to other motivational factors suggests that emphasizing the impact of donation on recipients and the moral imperative to help others may be particularly effective in retaining donors.

This observation resonates with the broader literature indicating a link between a general inclination towards helping others and the willingness to donate blood. Interestingly, while the factor analysis identified reward, esteem, and social motivations as distinct factors, these did not significantly predict donor status in the regression model. This suggests that while these factors may contribute to the initial decision to donate, they may not be as critical in determining whether a donor becomes a regular or lapses. For instance, the initial draw of a free health check (reward) or the influence of friends (social) might not be sufficient to continue donation over time.

Chapter Six: Summary, Conclusions and Recommendations

The present study's summary, conclusions, and suggestions were presented in this chapter. The important points in the summary, conclusion, and recommendations were based on the research questions and its findings.

6.1. Summary

This mixed-methods study examined the association of knowledge, attitudes, motivation, and contextual factors influencing voluntary non-remunerated blood donation practices among regular and lapsed donors at the Red Cross Donation Center, Addis Ababa. The current study was guided by Functional Motivation Theory which emphasizes different motivational dimensions could influence the same behaviour.

To address the research problem, the study formulated the following research questions:

1. What are the primary recruitment channels (source of information) that influence individuals to become blood donors?
2. What is the association between perception of blood bank services and donation practices among regular and lapsed donors?
3. What is the association between knowledge, attitudes toward blood donation, and donation practices among regular and lapsed donors?
4. What motivational factors (value-based, protective, understanding, social, and enhancement/esteem motives) sustain long-term blood donation practices?
5. How do motivational factors (value-based, protective, understanding, social, and enhancement/esteem motives) differ between regular and lapsed donors?

The study addressed the four research questions using both quantitative surveys (n = 200) and qualitative interviews (n = 12). A consecutive sampling method was used to choose samples. Accordingly, 200 samples were selected from donors who visited the blood bank

and met the inclusion criteria. Data was gathered using a questionnaire and interviews. Thematic analysis was utilized to study qualitative data, while descriptive and inferential statistics were employed to analyze quantitative data. Responses from the 200 participants were collected and coded into SPSS version 27 for further analysis.

Demographic and Contextual Factors

The majority of participants were male (69%), married (54.5%), educated (66% undergraduate), and self-employed (65.5%). Qualitative interviews revealed that physiological concerns, such as fear of anemia, likely contributed to the underrepresentation of female donors.

Recruitment Channels and Service Experience

Social networks (37.5%) and campaigns (17%) were identified as primary motivators for first-time donations. Qualitative findings echoed this, showing that many initial donations occurred during school campaigns. Having a relative who needed a transfusion also served as both an initial and ongoing motivation due to increased awareness of the need. Regular donors reported better service experiences ($M = 40.67$ vs. 39.13 , $p = .022$). Interview responses also show dissatisfaction among lapsed donors, citing issues such as missed communication (e.g., lack of reminders, thank-you messages, or notifications when the donated blood was used) and geographical barriers because of limited access to permanent donation centers.

Knowledge and Donation Practice

74% of participants demonstrated sufficient knowledge about blood donation, with near-universal awareness of donation intervals (100%) and blood shortages (100%). However, gaps persisted in eligibility criteria for example, only 39.5% knew the correct age limit. Chi Square result showed there was a statistically significant association between donor status

and knowledge level, $\chi^2(1, n = 200) = 11.48, p = .001$. Nevertheless, logistic regression revealed that knowledge had only a marginal association with donor retention ($p = .069$), indicating that knowledge alone is insufficient to sustain donation behavior. Qualitative finding also show that there is a gap in consistently educating donors who visit the center.

Attitudes and Donation Practices

All participants held positive attitudes, with 95.5% agreeing that "all eligible people should donate." Regular donors exhibited stronger positive attitudes ($M = 30.51$ vs. $28.93, p < .001$). Logistic regression analysis confirmed that attitude is a strong predictor of regular donation ($OR = 1.246, p < .001$).

Motivation to Donate Blood

Factor analysis identified altruistic values (26.8% variance), personal rewards (21.87%), self-esteem (16.39%), and social influence (11.0%) as motivational drivers. Value-based motivations such as "helping others" were the strongest predictor of regular donation ($OR = 2.292, p < .001$), while reward, esteem, and social motives (e.g., peer influence) were non-significant, suggesting they may initiate but not sustain donation. These findings were supported by qualitative data, where participants consistently expressed strong altruistic motivations for donating blood. Additionally, qualitative interviews revealed other beliefs such as the notion that blood should be recycled every three months and replaced, and that donating blood promotes healthy behaviors, like avoiding tattoos. O-negative donors expressed a strong sense of purpose, believing their blood is especially needed.

6.2. Conclusion

This study found that regular blood donation practice was significantly associated with higher knowledge, positive attitude, better service perception, and altruistic motivation. These variables were strong predictors of being a regular donor. Compared to previous

studies in Ethiopia, the participants in this study demonstrated a higher level of cumulative knowledge and more favorable attitudes toward blood donation.

The findings indicated the importance of psycho-social and service related factors in shaping donor behavior. Altruism emerged as a dominant motivational factor among participants, although other motives also contributed to donor engagement. These results help explain the factors that influence blood donation in the Ethiopian context and show the need for practical strategies to improve regular donor retention.

6.3. Recommendations

Based on the findings of this research, the following recommendations are proposed:

- Addis Ababa is a large city, so the Ethiopian Blood and Tissue Bank Services (EBTBS) in collaboration with Ministry of Health, should work on expanding permanent donation sites and improve accessibility.
- The EBTBS should partner with schools, religious institutions, and community groups to educate the population on blood donation and to increase access for specific donor groups.
- The EBTBS Media and Outreach Department should address knowledge gaps (e.g., eligibility based on age or weight) by designing and launching targeted multimedia awareness campaigns to improve donor recruitment and retention.
- Blood bank staff and donor service personnel should receive regular training organized by the EBTBS and health sector training bodies, aimed at updating their knowledge on blood donation guidelines and improving customer handling.
- The EBTBS Communication Team should design recruitment and retention campaigns that highlight the life-saving impact of donation, including altruistic messages and real-life stories from recipients.

- Staff at the blood donation center should encourage current donors to bring friends or family members along with them during their next donation.
- EBTBS should work on implementing automated reminders, post-donation feedback (e.g., notifications when blood is used), and thank you messages via SMS or social media to encourage donors.

6.4. Strength, Limitations and Areas of Further Research

6.4.1. Strength and Limitation of the Study

The study used a mixed-methods design. This enabled to address the research questions in depth. The participants in the study were donor groups, and there is a lack of research on studying these groups exclusively in our setting. To the researchers knowledge, this is the first study to use VFI in blood donation by contextually adapting to the Ethiopian case. The results of the study can be used as a base for other studies.

The researcher acknowledges some important potential limitations that should be considered when interpreting the results. The quantitative aspect of the study used a cross-sectional design, which prevents it from determining the cause-and-effect relationship. The possibility of social desirability bias and recall bias in the participants' responses cannot be entirely ruled out. To minimize these limitations, efforts were made to maintain participant anonymity, participants were assured that there were no right or wrong answers, and recall questions focused on recent experiences whenever possible, used pre-tested tools, and ensure the contextual adaptation of measurement scales. Additional limitation could be the study was conducted at a single site, which may limit the generalizability of the findings.

6.4.2. Suggestions for Future Research

Future research should be conducted that addresses the limitations and delimitations of this study. Longitudinal studies should be conducted to address the cause-and-effect

relationship between the study variables. The methods used in this study can also be applied to studying donors and donor groups or first-time and repeat donor groups, which could yield important findings. The analysis of this study didn't focus on individual items of motivation; it used composite scores, whereas analyzing individual items on donation is also important to develop actionable steps towards improving each motivation. In addition, it is also as important to investigate the relationship of demographic profiles with the variables that influence blood donation.

The qualitative findings of this study also indicate unexplored motivational factors, such as beliefs like 'blood should be recycled every three months,' influencing blood donation practices. Since there are limited qualitative studies, future studies should also focus on using a qualitative approach to explore psychological, social, and cultural factors influencing donation behavior.

Future research should include other donation sites, like mobile donation centers, which also serve a large number of donors. There could be an underlying difference in characteristics and motivation of blood donation participants who come on their own (which usually takes more effort) and those who are nudged through campaigns and activities in mobile donation centers. Additionally, investigating the specific barriers faced by underrepresented demographic groups, such as women and less educated individuals, is another area that is understudied.

References

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control* (pp. 11–39). Springer.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intention, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22(5), 453–474.
- Alfieri, S., Guidi, P., Marta, E., & Saturni, V. (2016). Economic crisis and blood donation: How are donors' motivations changing? *Transfusion and Apheresis Science*, 54(3), 396–400. <https://doi.org/10.1016/j.transci.2016.03.017>
- Alfieri, S., Pozzi, M., & Pistoni, C. (2020). The blood donation function inventory: Adaptation of the voluntary function inventory for a psychological approach to blood donors. *Journal of Civil Society*, 16(1), 16–76. <https://doi.org/10.1080/17448689.2020.1729299>
- Armitage, C. J., & Conner, M. (2001). Social cognitive determinants of blood donation. *Journal of Applied Social Psychology*, 31(7), 1431–1457.
- Asamoah-Akuoko, L., Hassall, O. W., Bates, I., & Ullum, H. (2017). Blood donors' perceptions, motivators and deterrents in Sub-Saharan Africa—a scoping review of evidence. *British Journal of Haematology*, 177(6), 864–877.
- Aworanti, O. W., Ogundeji, S. P., Oladele, A. Q., Akingbola, T. S., & Kotila, T. R. (2024). Factor analysis of motivational and deterrent factors among voluntary non-remunerated blood donors in Ibadan, Nigeria. *The Journal of Medical Research*, 10(1), 31–36.

- Aworanti, O. W., Ogundeji, S. P., Oladele, A. Q., & Okojie, E. A. (2022). Comparative analysis of blood donation practices among students at Nigerian University. *Open Journal of Medical Research*, 3(1), 42–49.
- Basukala, R. (2015). A qualitative study of attitudes, motivation and perception of blood donors towards blood donation in a tertiary care hospital. *International Journal of Indian Psychology*, 2(3), 105-117.
- Beyene, G. A. (2020). Voluntary blood donation knowledge, attitudes, and practices in Central Ethiopia. *International Journal of General Medicine*, 13, 67.
<https://doi.org/10.2147/IJGM.S246138>
- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis?. *Qualitative research in psychology*, 18(3), 328-352.
- Callero, P. L. (1985). Role-identity salience. *Social Psychology Quarterly*, 48(3), 203–215.
- Callero, P. L., Howard, J. A., & Piliavin, J. A. (1987). Helping behavior as role behavior: Disclosing social structure and history in the analysis of prosocial action. *Social Psychology Quarterly*, 50(3), 247–256.
- Chacón, F., Gutiérrez, G., Sauto, V., Vecina, M. L., & Pérez, A. (2017). Volunteer functions inventory: A systematic review. *Psicothema*, 29(3), 306–316.
<https://doi.org/10.7334/psicothema2016.371>
- Charng, H., Piliavin, J., & Callero, P. L. (1988). Role identity and reasoned action in the prediction of repeated behavior. *Social Psychology Quarterly*, 51(4), 303–317.
- Clary, E. G., & Snyder, M. (1999). The motivations to volunteer: Theoretical and practical considerations. *Current Directions in Psychological Science*, 8(5), 156–159.
<https://doi.org/10.1111/1467-8721.00037>
- Clary, E. G., Snyder, M., Ridge, R. D., Copeland, J., Stukas, A. A., Haugen, J., & Miene, P. (1998). Understanding and assessing the motivations of volunteers: A functional

- approach. *Journal of Personality and Social Psychology*, 74(6), 1516–1530.
<https://doi.org/10.1037/0022-3514.74.6.1516>
- Clary, E. G., & Snyder, M. (1991). A functional analysis of altruism and pro-social behavior: The case of volunteerism. In M. S. Clark (Ed.), *Review of personality and social psychology: Vol. 12. Prosocial behavior* (pp. 119-148). Sage Publications.
- Clary, E. G., & Snyder, M. (1999). The motivations of volunteers: The case of the Volunteer Functions Inventory. In T. D. Steer & T. D. Nelson (Eds.), *Motivation: Theory and research* (pp. 237-251). Academic Press.
- Darega, B., Dida, N., Tesfaye, T., & Lencha, B. (2015). Voluntary blood donation practices and associated factors among regular undergraduate Madawalabu University Students, Southeast Ethiopia: a facility-based cross-sectional study. *Journal of Blood Disorders & Transfusion*, 5(5), S5-005.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum.
- Deci, E. L., & Ryan, R. M. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.
- Enawgaw, B., Yalew, A., & Shiferaw, E. (2019). Blood donors' knowledge and attitude towards blood donation at North Gondar district blood bank, Northwest Ethiopia: A cross-sectional study. *BMC Research Notes*, 12(1), 729.
<https://doi.org/10.1186/s13104-019-4776-0>
- Ferguson, E. (2015). Mechanism of altruism approach to blood donor recruitment and retention: A review and future directions. *Transfusion Medicine*, 25(4), 211–226.
- France, C. R., France, J. L., & Himawan, L. K. (2008). Re-donation intentions among experienced blood donors: Does gender make a difference? *Transfusion and Apheresis Science*, 38(2), 159–166.

- France, C. R., France, J. L., Kowalsky, J. M., & Cornett, T. L. (2010). Education in donation coping strategies encourages individuals to give blood: Further evaluation of a donor recruitment brochure. *Transfusion*, 50(1), 85–91.
- France, C. R., France, J. L., Kowalsky, J. M., Copley, D. M., Lewis, K. N., Ellis, G. D., McGlone, S. T., & Sinclair, K. S. (2013). A web-based approach to blood donor preparation. *Transfusion*, 53(2), 328–336.
- France, C. R., France, J. L., Kowalsky, J. M., Copley, D. M., Wissel, M. E., Bolinger, E. M., & Huckins, J. L. (2011). Enhancing blood donation intentions using multimedia donor education materials. *Transfusion*, 51(8), 1796–1801.
- France, C. R., & Masser, B. (2010). An evaluation of a donation coping brochure with Australian nondonors. *Transfusion and Apheresis Science*, 43, 291–297.
- France, C. R., Montalva, R., France, J. L., & Trost, Z. (2008). Enhancing attitudes and intentions in prospective blood donors: Evaluation of a new donor recruitment brochure. *Transfusion*, 48(3), 526–530.
- France, J. L., France, C. R., & Himawan, L. K. (2007). A path analysis of intention to redonate among experienced blood donors: An extension of the theory of planned behavior. *Transfusion*, 47(6), 1006–1013.
- France, J. L., France, C. R., Wissel, M. E., Kowalsky, J. M., Bolinger, E. M., & Huckins, J. L. (2016). Enhancing intrinsic motivation among prospective blood donors: Evaluation of a motivational interviewing-based intervention. *Transfusion*, 56(6), 1409–1415.
- Gebre, B. G., Ayele, T. T., Wale, D. D., Tarekegn, T. K., Gutta, A. T., Molla, B. A., Hassen, B. A., Neda, W. N., Tsega, S. W., Taye, T. E., Terefasa, L. K., Tesfaye, T. F., Aynalem, N. Y., Mesfin, Y. D., Gebremedhin, R. A., Tumdedo, B. A., Bzuayehu, H. M., Kassa, H. G., Semu, B. G., ... Tafesse, T. M. (2024). Knowledge, attitude, practice of blood donation & associated factors among undergraduate regular

- students at Arbaminch University College of Medicine & Health Sciences, Gamo Zone, SNNPR, Ethiopia, 2022 GC. *American Journal of Clinical and Medical Research*, 4(7), 141. <https://doi.org/10.47991/2835-9496/AJCMR-141>
- Getie, A., Amlak, B. T., Ayenew, T., Gedfew, M., Yilak, G., Wondmienieh, A., & Bimerew, M. (2024). Ethiopian residents' knowledge and attitude towards blood donation and its associated factors: Systematic review and meta-analysis. *BMC Public Health*, 24, 3256. <https://doi.org/10.1186/s12889-024-20679-3>
- Getie, A., Wondmienieh, A., & Bimerew, M. (2024). Attitude towards blood donation and its associated factors, types of blood donation, willingness, and feeling towards blood donation among potential blood donors in Ethiopia: Systematic review and meta-analysis, observational study. *Hematology*, 29(1), e2355600. <https://doi.org/10.1080/16078454.2024.2355600>
- Getie, A., Wondmienieh, A., Bimerew, M., Gedefaw, G., & Demis, A. (2020). Blood donation practice and associated factors in Ethiopia: A systematic review and meta-analysis. *BioMed Research International*, 2020(1), 8852342. <https://doi.org/10.1155/2020/8852342>
- Giles, M., & Cairns, E. (1995). Blood donation and Ajzen's theory of planned behaviour: An examination of perceived behavioural control. *British Journal of Social Psychology*, 34(2), 173–188.
- Giles, M., McClenahan, C., Cairns, E., & Mallet, J. (2004). An application of the theory of planned behaviour to blood donation: The importance of self-efficacy. *Health Education Research*, 19(4), 380–391.
- Glynn, S. A., Kleinman, S. H., Schreiber, G. B., Zuck, T., McCombs, S., Bethel, J., Garratty, G., Williams, A. E., & Retrovirus Epidemiology Donor Study. (2002). Motivations to

- donate blood: Demographic comparisons. *Transfusion*, 42(2), 216–225.
<https://doi.org/10.1046/j.1537-2995.2002.00008.x>
- Godin, G., Conner, M., Sheeran, P., Bélanger-Gravel, A., & Germain, M. (2007). Determinants of repeated blood donation among new and experienced blood donors. *Transfusion*, 47(9), 1607–1615.
- Guiddi, P., Alfieri, S., Marta, E., & Saturni, V. (2015). New donors, loyal donors, and regular donors: Which motivations sustain blood donation? *Transfusion and Apheresis Science*, 52(3), 339–344. <https://doi.org/10.1016/j.transci.2015.03.020>
- Hagger, M. S., & Chatzisarantis, N. L. D. (2009). Integrating the theory of planned behaviour and self-determination theory in health behaviour: A meta-analysis. *British Journal of Health Psychology*, 14(2), 275–302.
- Hagger, M. S., & Chatzisarantis, N. L. D. (2012). Transferring motivation from educational to extramural contexts: A review of the trans-contextual model. *European Journal of Psychology of Education*, 27, 195–212.
- Hagger, M. S., Chatzisarantis, N. L. D., & Harris, J. (2006). From psychological need satisfaction to intentional behavior: Testing a motivational sequence in two behavioral contexts. *Personality and Social Psychology Bulletin*, 32(2), 131–148.
- Huis in 't Veld, E. M. J., Verkooijen, K., Van der Klooster, K., & Veldhuizen, I. J. T. (2019). How public trust and healthcare quality relate to blood donation behavior: Cross-cultural evidence. *PLoS One*, 14(12), e0226413.
- Jemberu, Y. A., Esmael, A., & Ahmed, K. Y. (2016). Knowledge, attitude and practice towards blood donation and associated factors among adults in Debre Markos town, Northwest Ethiopia. *BMC Hematology*, 16(1), 23. <https://doi.org/10.1186/s12878-016-0062-8>

- Jibril, A., Mohammed, A., Hashi, A., Omer, M., Shegere, M., Joseph, N., & Palani, S. (2020). Knowledge, attitude, practice and associated factors of adult population towards blood donation in Jigjiga Town, Somali Region, Ethiopia. *Journal of Drug Delivery and Therapeutics*, 10(6), 149–165. <https://doi.org/10.22270/jddt.v10i6.4456>
- Kassie, A., & Birara, S. (2020). Retracted article: Practice of blood donation and associated factors among adults of Gondar City, Northwest Ethiopia: Bayesian analysis approach. *Journal of Blood Medicine*, 11, 525–532. <https://doi.org/10.2147/JBM.S283991>
- Katz, D. (1960). The functional approach to the study of attitudes. *Public opinion quarterly*, 24(2), 163-204.
- Kebede, A. A., Bitew, Y., Birku, T., Member, Z., Achenef, W., Tibebu, N. S., & Anteneh, T. A. (2022). Willingness to donate blood and associated factors among patient caregivers at the University of Gondar Comprehensive Specialized Hospital, northwest Ethiopia. *Clinical Epidemiology and Global Health*, 13, 100953.
- Masser, B. M., Bednall, T. C., White, K. M., & Terry, D. J. (2012). Predicting the retention of first-time donors using an extended Theory of Planned Behavior. *Transfusion*, 52(6), 1303–1310.
- Masser, B. M., & France, J. L. (2010). The psychological factors influencing repeat blood donation. *Journal of Health Psychology*, 15(8), 1239-1249.
- Masser, B. M., White, K. M., Hyde, M. K., Terry, D. J., & Robinson, N. G. (2009). Predicting blood donation intentions and behavior among Australian blood donors: Testing an extended theory of planned behavior model. *Transfusion*, 49(2), 320–329.
- Mecha, A., & Erchafo, B. (2022). Blood donation intentions and predictors among Hosanna town dwellers, south nation nationality peoples region, Ethiopia. *Journal of Family*

- Medicine and Primary Care*, 11(9), 5320–5326.
https://doi.org/10.4103/jfmpe.jfmpe_1287_21
- Melku, M., Asrie, F., Shiferaw, E., Woldu, B., Yihunew, Y., Asmelash, D., & Enawgaw, B. (2018). Knowledge, attitude and practice regarding blood donation among graduating undergraduate health science students at the University of Gondar, Northwest Ethiopia. *Ethiopian Journal of Health Sciences*, 28(5), 571–582.
<https://doi.org/10.4314/ejhs.v28i5.8>
- Misje, A. H., Bosnes, V., Gåsdal, O., & Heier, H. E. (2005). Motivation, recruitment and retention of voluntary non-remunerated blood donors: A survey-based questionnaire study. *Vox Sanguinis*, 89(4), 236–244. <https://doi.org/10.1111/j.1423-0410.2005.00706.x>
- Moges, B., Kifle, A., & Kebede, A. (2016). Knowledge, Attitude and Practice Regarding Blood Donation among Graduating Undergraduate Health Science Students at the University of Gondar, Northwest Ethiopia. *Ethiopian Journal of Health Sciences*, 26(3), 263-270.
- Mohammed, A. S., Yassin, A., & Aliyi, A. A. (2022). Voluntary blood donation practice and its associated factors among civil servants in Bale Robe town, Southeast Ethiopia, 2021. *SAGE Open Medicine*, 10, 20503121221102099.
<https://doi.org/10.1177/20503121221102099>
- Mousavi, S. M., Kashani, H. R., Mohebali, M., & Kazemi, B. (2011). Knowledge, attitude and practice towards blood donation in Iranian population. *Transfusion Medicine*, 21(5), 332-337.
- Mussema, Y., Gebremeskel, M. G., Asamene, M., & Gosa, K. (2023). Blood Donation Practices among Health Profession Students in Northern Ethiopia: A Cross-Sectional Study. *Journal of Blood Medicine*, 14, 455-464.

- Mussema, Y., Alemseged, A., Asamene, M., & Getachew, A. (2024). Knowledge, attitude, practice and associated factors about voluntary blood donation among regular undergraduate students of Wachemo University, Southcentral Ethiopia: a cross-sectional study. *BMC Public Health*, 24(1), 1-9.
- Nigussie, Y., Ayalew, M., Mulu, T., & Abebe, M. (2020). Knowledge, attitude, and practice of voluntary blood donation among adult population in Chiro town, West Hararghe Zone, Eastern Ethiopia. *BMC Public Health*, 20(1), 1-8.
- Ogundeji, A. A., Adejumo, O. E., & Ayilara, V. O. (2021). Knowledge, attitude, and practice of voluntary blood donation among adult population in Sokoto Metropolis, Northwest Nigeria. *Journal of Public Health and Community Medicine*, 1(2), 1-10.
- Omaish, S. R., Hussein, R. R., Hani, M. M., & Al-Rubaye, R. N. (2023). Knowledge, attitude, and practice of voluntary blood donation among medical students in Iraq. *Cureus*, 15(8), e43477.
- Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology*, 56(1), 365–392.
<https://doi.org/10.1146/annurev.psych.56.091103.070141>
- Piliavin, J. A., & Callero, P. L. (1991). *Giving blood: The development of an altruistic identity*. Johns Hopkins University Press.
- Regassa, D. A., Nagaash, R. S., Habtu, B. F., Abdlshikure, S. A., Abagumbul, Z. H., Kiya, G. T., & Medeksa, A. K. (2024). Blood donation knowledge, attitude, and practice among regular undergraduate medical and health science students at Wolkite University, Central Ethiopia: A cross-sectional study. *International Journal of Blood Transfusion and Immunohematology*, 14(2), 7–18.
<https://doi.org/10.5348/100085Z02DR2024RA>

- Robinson, N. G., Masser, B. M., White, K. M., Hyde, M. K., & Terry, D. J. (2008). Predicting intentions to donate blood among non-donors in Australia: An extended theory of planned behavior. *Transfusion*, 48(12), 2559–2567.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78.
- Sahlu, D., & Tadesse, A. W. (2023). Blood donation practice and associated factors among adults in rural kebeles of North Shoa Zone, Oromia, Ethiopia, 2021: A community-based mixed-method study. *American Journal of Medicine and Public Health*, 4(3), 1045. Retrieved from <https://www.remedypublications.com/american-journal-of-medicine-and-public-health-abstract.php?aid=9791>
- Schwartz, S. H. (1977). Normative influences on altruism. In *Advances in experimental social psychology* (Vol. 10, pp. 221–279). Academic Press.
- Shama, H., Kebede, A., Adino, S., & Birlie, B. (2022). Attitude towards blood donation and its associated factors, types of blood donation, willingness, and feeling towards blood donation among potential blood donors in Ethiopia: systematic review and meta-analysis, observational study. *BMC Public Health*, 22(1), 1-13.
- Sinclair, K. S., Campbell, T. S., Carey, P. M., Langevin, E., Bowser, B., & France, C. R. (2010). An adapted postdonation motivational interview enhances blood donor retention. *Transfusion*, 50(8), 1778–1786.
- Snyder, M. (1993). Basic research and practical problems: The promise of a “functional” personality and social psychology. *Personality and Social Psychology Bulletin*, 19(3), 251–264. <https://doi.org/10.1177/0146167293193001>

- Snyder, M., & Cantor, N. (1998). Understanding personality and social behavior: A functionalist strategy. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology (4th ed., Vol. 1, pp. 635–679)*. McGraw-Hill.
- Steele, W. R., Schreiber, G. B., Guiltinan, A., Nass, C., Glynn, S. A., Wright, D. J., Kessler, D., Schlumpf, K. S., Tu, Y., Smith, J. W., Garratty, G., & Retrovirus Epidemiology Donor Study. (2008). The role of altruistic behavior, empathetic concern, and social responsibility motivation in blood donation behavior. *Transfusion*, 48(1), 43–54.
<https://doi.org/10.1111/j.1537-2995.2007.01481.x>
- Tebabal, B., Anagaw, T. F., Adamu, A., & Atnafu, D. D. (2023). Factors influencing blood donation practice among health care providers of public hospitals in Bahir Dar City, North West Ethiopia: a case control study. *Journal of Blood Medicine*, 14, 487–498.
<https://doi.org/10.2147/JBM.S423013>
- Tsega, A., Mullualem, D., & Tadesse, B. A. (2024). Assessment of knowledge, attitude, practice, and associated factors of voluntary blood donation in selected towns of Awi Zone, Injibara, Ethiopia. *BioMed Research International*, 2024, Article 6069684.
<https://doi.org/10.1155/2024/6069684>
- Urgesa, K., Hassen, N., & Seyoum, A. (2017). Knowledge, attitude, and practice regarding voluntary blood donation among adult residents of Harar town, Eastern Ethiopia: A community-based study. *Journal of Blood Medicine*, 8, 13.
<https://doi.org/10.2147/JBM.S121460>
- World Health Organization. (2010). *Towards 100% voluntary blood donation: A global framework for action*. <https://www.who.int/publications/i/item/9789241599696>
- World Health Organization. (2023). *Blood safety and availability*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/blood-safety-and-availability>

- Wong, C. M., & Foo, K. H. (2011). Motivational functions, gender, age and religiosity influences on volunteerism: A Singapore volunteer organization perspective. *Journal of Tropical Psychology, 1*, e4. <https://doi.org/10.1017/S1834490900000049>
- Youssef Ezeldain, A. Y., Hossein, Y. E.-S., Mohammed, E. S., & Amein, N. M. (2020). Assessment of knowledge and attitude among faculty of nursing students regarding blood donation. *Minia Scientific Nursing Journal, 8*(1), 39–47. <https://doi.org/10.21608/msnj.2020.188037>
- Zelege, A. M., & Azene, Z. N. (2022). Willingness and its associated factors for blood donation in Gondar Town, Northwest Ethiopia: A community-based cross-sectional study. *Hygiene, 2*(4), 212–225. <https://doi.org/10.3390/hygiene2040019>

Appendix A

English Version of the Questionnaire

Research Questionnaire

Addis Ababa University

Name of Student: Selam Aysheshim

Address: Email – selamaysheshim62@gmail.com

Dear Respondents,

This questionnaire has been prepared for thesis research purposes, as part of the requirements for the Master of Arts in Social Psychology, under the title "**Knowledge, Attitude and Motivation of Voluntary Non-Remunerated Blood Donors.**" The study targets voluntary blood donors visiting at the Ethiopian Red Cross Society.

This questionnaire has seven pages. It is categorized into six parts. The first part describes general demographic information, the second part relates to blood donation history and practices, the third part assesses knowledge about blood donation, the fourth part evaluates attitudes toward blood donation, the fifth part gathers feedback on services and facilities at the blood bank, and the sixth part explores motivations for donating blood. Please respond to all questions and mark (✓) the appropriate box that best suits your response. Thank you in advance for your cooperation and valuable contribution to this research.

Your participation in this survey is voluntary, and you are encouraged to provide honest responses to ensure the accuracy of the research findings. All data collected will remain strictly confidential and used solely for the purposes of this study. By completing this questionnaire and providing your signature, you confirm that you have been informed of the study's purpose, potential benefits (contributing to improved understanding of donor motivation), and absence of significant risks. You retain the right to skip any questions that make you uncomfortable and may withdraw from the study at any time without consequence. Your signature below indicates voluntary participation; please note that you are not required to write your name, as all responses will remain anonymous.

DO NOT FILL OUT YOUR NAME!

Part I: General demographic information

1. Gender: ☐ Male ☐ Female

2. Age: -----

3. Marital status: ☐ Married ☐ Single ☐ Widow /-er ☐ Divorced

4. Level of Education, please check only one box for your highest education:

☐ No formal education ☐ Elementary School ☐ Up to Grade 12
☐ TVET/Diploma ☐ Undergraduate degree ☐ Postgraduate and above

5. Occupation (please check only one box)

☐ Employed - fulltime ☐ Employed - part-time ☐ Self -Employed
☐ Student/ attending school ☐ Unemployed ☐ Retired
☐ Other fields, please specify-----

6. For those who are currently working: Is your current work related to healthcare?

☐ Yes ☐ No, please specify the field-----

Part II: Questions related to blood donation history/practice

1. How many times have you donated in your lifetime? -----

2. How many times did you donate blood in the past 2 years (including this donation)?

☐ Once ☐ 2 times ☐ 3 times ☐ 4 times or more

3. Where do you usually donate? (please check one box)

☐ National Blood Bank ☐ Red Cross ☐ Mobile Donation Centers

4. Have any of your family members or friends, received blood transfusion or blood products? ☐

Yes ☐ No ☐ Don't know ☐ Don't want to answer

5. Have you yourself received blood transfusion? ☐ Yes ☐ No ☐ Don't want to answer

6. Do you participate in voluntary or charity work?

☐ Yes ☐ No ☐ Don't want to answer

7. If your answer to the previous question was yes, what kind of service do you give?

☐ Monetary contribution ☐ Being physically present ☐ Both

8. Which source of information was most important in influencing you in your decision to start donating blood? (Please check only one box):

- ☐ Advertisement in papers, magazines ☐ Advertisement by leaflets or posters
- ☐ Friends were blood donors ☐ Influence by colleagues
- ☐ Relatives were blood donors ☐ Influence by spouse
- ☐ Advertisement on TV or radio ☐ I have received blood transfusion or blood products myself
- ☐ Someone close received blood transfusion or blood products
- ☐ Membership in voluntary activity ☐ Recommendation from health care profession
- ☐ Blood donation campaign(school, church) ☐ Don't know / don't
- ☐ Other source of information-----

Part III: Questions related to your knowledge about blood donation

1. What is the age limit for blood donation (lower and upper)? -----
2. What is the minimum weight to donate blood? -----
3. How frequently can a person donate blood?

☐ Once a year ☐ Once every three months ☐ Once every six months ☐ Twice every three months
4. Do you believe blood donation is useful for the donor's health?

☐ Yes ☐ No
5. If your answer is yes to the above question, what are the benefits of blood donation? (Select all that apply)

- ☐ Burns calories and controls body weight ☐ Feeling of happiness
☐ Free health checkup ☐ Healthy feeling
☐ Lower risk of cancer ☐ Reduction of heart attack risk

6. What are the possible health risks of blood donation? (Select all that apply)

- ☐ Anemia ☐ Cross infection ☐ None
☐ Fainting ☐ Sudden death

7. Can you list out all places in Ethiopia that facilitate blood donation? -----

8. Do you know there is a shortage of blood in health facilities?

- ☐ Yes ☐ No

9. Who are not eligible for blood donation? (Select all that apply)

- ☐ History of blood transfusion ☐ History of major surgery in the past year
☐ Infectious disease patients ☐ Intravenous drug users
☐ Pregnant and lactating women

10. What is the best source of blood donation?

- ☐ Family/replacement donation ☐ Voluntary non remunerated donation
☐ Paid donation ☐ Other (specify) -----

Below, from **Part IV, V, and VI**, you will find a list of statements with which you may agree or disagree. If you are unsure which option to select, you may choose the "**Neutral**" response.

Part IV: Statements related to attitude towards blood donation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A. All people should donate blood if he/she is eligible.					
B. Blood should be donated to family members only.					
C. Blood donation is harmful to donors.					
D. Blood donation should be voluntary.					
E. Financial compensation for blood donation is appropriate.					
F. Blood should be donated continuously.					
G. There is a shortage of blood in health facilities.					

Part V: Your views on services and facilities at the Blood bank

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A. It really bothers me filling out forms and screening questionnaires before donation					
B. I think the atmosphere at the blood bank is really pleasant					
C. Blood bank staff are competent					
D. Facilities at the blood should be better equipped for receiving blood donors					
E. I find it hard to find a parking lot when I donate					
F. I spend too much time waiting when donating blood					
G. I think the incentives for donating should be better					
H. Coming to the blood bank takes a lot of effort					
I. I think donating is really unpleasant					
J. The blood bank should have longer opening hours					
K. I appreciate getting a small token “gift” for having donated blood					

Here you may write your views on blood banks services and facilities that are not mentioned above:

Part VI: Your views on why you donate blood

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A. Blood donation is a cause that is important to me					
B. Donating blood makes me feel important					
C. My friends donate blood					
D. Blood donation increases my self-esteem					
E. Donating blood makes me feel better about myself					
F. I think blood donation benefits my own health					
G. For me blood donation is primarily a moral duty					
H. I donate because I feel great compassion towards the receivers of blood products I					
I. My friends think it is important that I donate blood					
J. I donate blood because it is important to help other people					
K. By donating blood I can explore my own strengths					
L. Donating blood makes me feel needed					
M. Blood donation is an important part of who I am					
N. People I know share an interest in donating blood					
O. An important reason for donation is that I get a health check for free					
P. I can do something for a cause that is important to me					
Q. Donating blood relieves me of some of the guilt over being more fortunate than others					

If there are other reasons important for your commitment as a blood donor, not mentioned above, you may please write them here:-----

Thank You!

Appendix B

Amharic Version of the Questionnaire

- selamaysheshim62@gmail.com

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Family/replacement donation

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Appendix C

Interview Questions (English Version)

1. What initially motivated you to donate blood?
2. How do you feel about the idea of giving blood without receiving anything in return?
3. Are you happy with the services provided by the donation center? What areas of improvement have you noticed?
4. Do you think the service is accessible to most people?
5. What are the main barriers to blood donation you can think of?
6. Do you think donating blood is beneficial? If so, how?

Appendix D

Interview Questions (Amharic Version)

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Appendix E

Pilot Study Report

Introduction

The primary objective of this pilot study was to evaluate the reliability, clarity, and contextual appropriateness of the data collection tools designed for the main study on voluntary blood donation. The pilot helped the researcher anticipate potential issues with administering the questionnaire and interviews, and make necessary revisions prior to launching the main study.

Methods

Participants in the pilot study were 20 voluntary blood donors (10 regular and 10 lapsed) who were selected through consecutive sampling as they arrived at the Ethiopian Blood and Tissue Bank Donation Center, one of the two permanent donation sites in Addis Ababa. This site was chosen to reflect the setting of the main study, which was conducted at the Ethiopian Red Cross Society Donation Center.

All sections of the data collection tool, including socio-demographic items, knowledge, attitude, motivation, and donation history, were tested. In addition, semi-structured interviews were conducted with 10 of the pilot participants to assess the clarity and cultural relevance of the qualitative interview questions.

Pilot Study Result

Demographic Status of Pilot Participants

The demographic characteristics of the 20 pilot participants included 8 males, most of whom were in the 26–35 age range. Six participants were married, and seven held undergraduate degree. In terms of occupation, most were self-employed, reflecting the demographic pattern observed in the main sample. This indicates that the pilot participants shared similar characteristics with the main study sample and were therefore suitable for assessing the appropriateness and effectiveness of the tools across comparable participant profiles.

Reliability Test

To evaluate the internal consistency of the data collection instruments, Cronbach's alpha coefficients were calculated for the main constructs. The knowledge section produced an alpha of 0.724, indicating acceptable reliability. The attitude section showed higher consistency, with an alpha of 0.873, and the motivation section had the strongest reliability, with an alpha of 0.908. These results showed that the questionnaire items had internal consistency within the acceptable range and are reliable enough to be used in the main study.

Pilot Test Results

The pilot study included both quantitative and qualitative components. The quantitative pilot test indicated the need to revise certain questions in the questionnaire. Some items were ambiguous revised. Other statements like 'blood donation is a way to make new friends' and 'If I don't contribute, no one else will' were understood differently by different respondents despite revision so items were removed. Participants also expressed that the questionnaire was too long, which led to fatigue during completion. Initially, the data was planned to be

collected prior to donation, assuming it would be a more relaxed time for participants. However, many individuals seemed uneasy and hesitant to sit down and complete the questionnaire calmly before donating. It was later found that the post-donation recovery period was a more suitable time, provided the timing was clearly communicated. This required politely checking whether participants were in a hurry and explaining the estimated time needed, as some agreed to participate but did not give the questionnaire the necessary attention.

Obstacles Observed

The questionnaire took longer than expected to complete, leading to participant fatigue. Some donors were in a rush and did not focus while filling it out. The income-related question was left unanswered by 18 of the 20 participants. When asked, most indicated that the question made them uncomfortable. Questions regarding hours spent volunteering per week and distance traveled to the donation center were interpreted inconsistently. Questions related to employment type were also not considered relevant by many respondents. Additional response options were needed for certain items such as recruitment channels, as participants shared options that were not originally included. Some items were ultimately removed due to ongoing confusion or inconsistent interpretation despite previous revisions.

Improvements Made After Pilot Study

Several changes were made to improve the tools and process before the main study. The questionnaire was shortened, with non-essential items, especially from the donation history section, being removed to reduce participant fatigue. The income-related question was eliminated entirely due to discomfort and high non-response. Ambiguous items were revised for clarity, and some questions were adjusted to avoid multiple interpretations. Additional

response choices were added for questions such as recruitment channels. The timing of administration was shifted from pre-donation to post-donation recovery time, which proved to be more effective. Clear communication about the time required and checking participants' availability helped improve completion quality. Interview questions were also reworded to be more concise and appropriate for the context.

Conclusion

The pilot study confirmed the feasibility of the study design, tools, and participant recruitment approach. The internal consistency results supported the reliability of the questionnaire, and participant feedback helped refine the content for better clarity and cultural fit. As a result of the pilot, the data collection tools were meaningfully improved, enhancing the likelihood of success for the main study. These revisions set a strong foundation for implementing the main study with a more generalizable sample.

Appendix F

Normality Assumption

Figure F1

Histogram Presenting Attitude Scores for Regular Donors

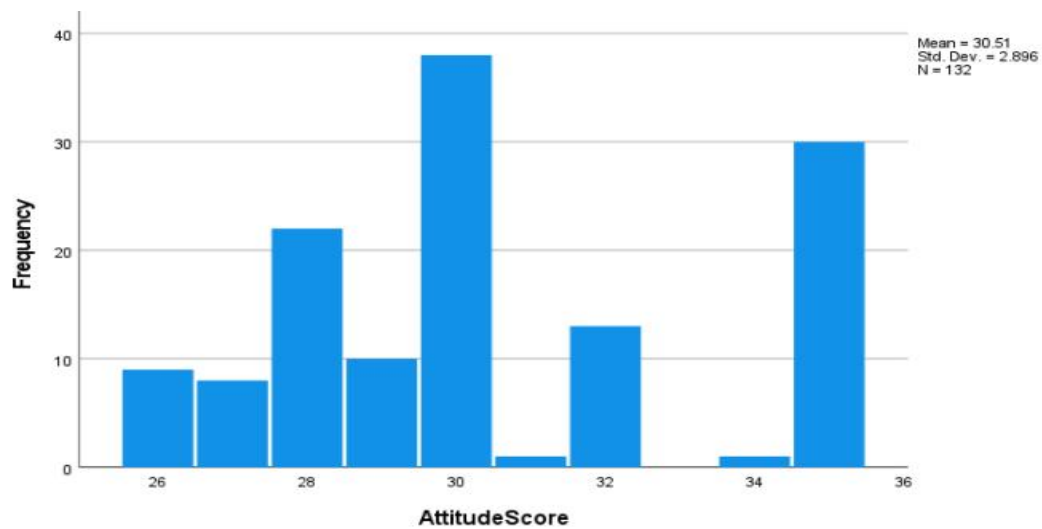


Figure F2

Histogram Presenting Attitude Scores for Lapsed Donors

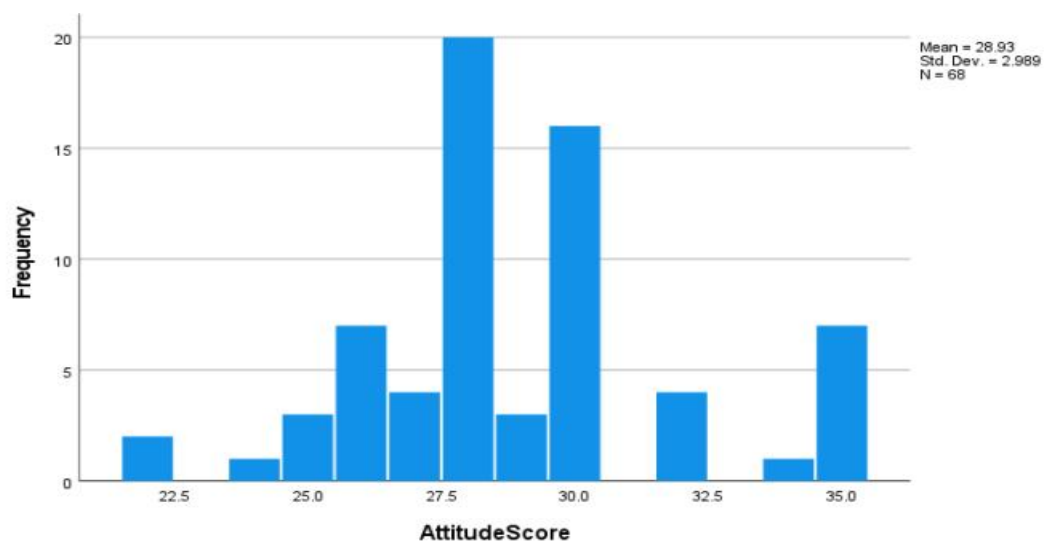
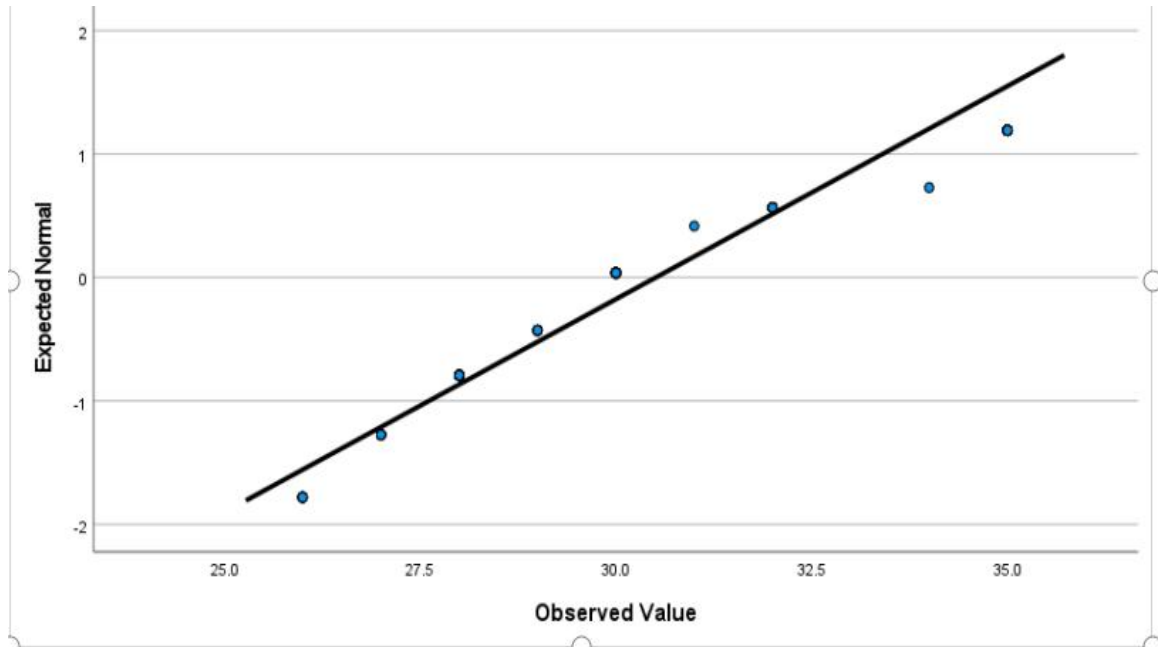


Figure F3

Q-Q Plot Showing Attitude Score of Regular Donors

**Figure F4**

Q-Q Plot showing Attitude Score of Lapsed Donors

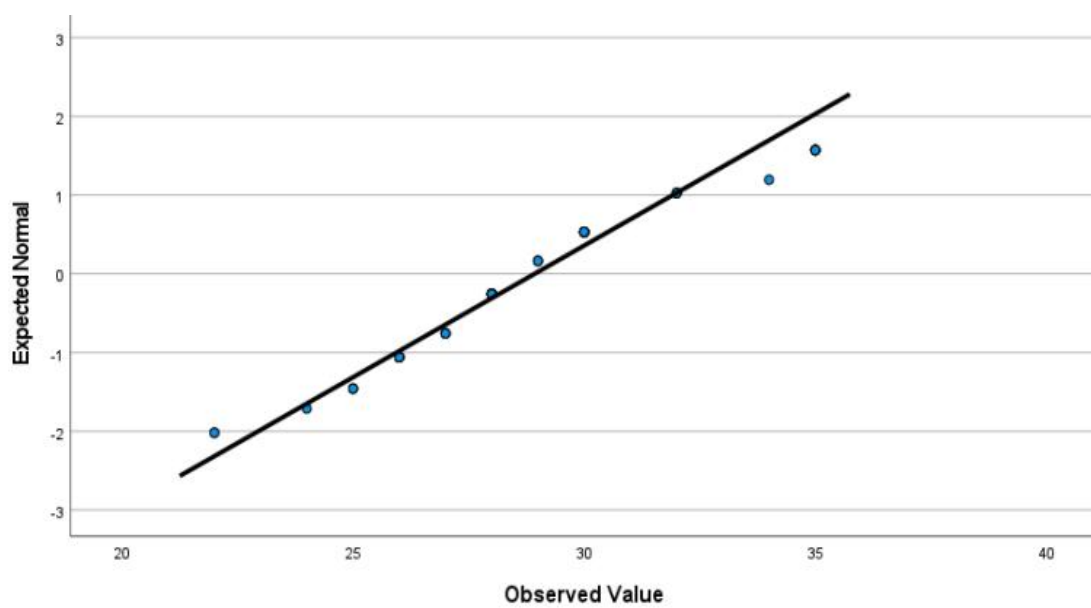
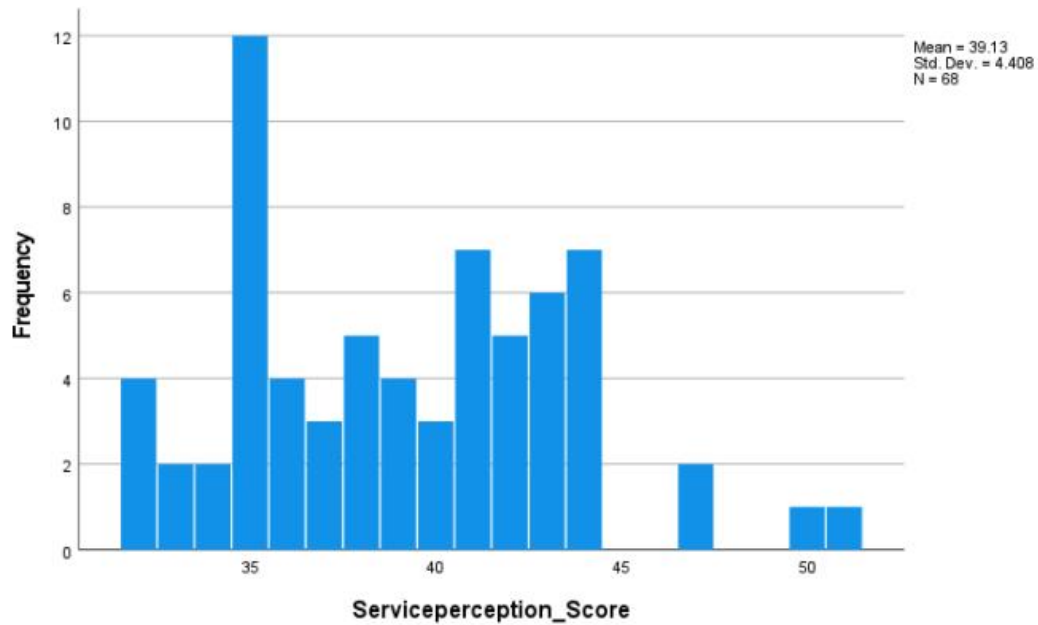


Figure F5

Histogram Presenting Views on Service Scores for Lapsed Donors

**Figure F6**

Histogram Presenting Views on Service Scores for Regular Donors

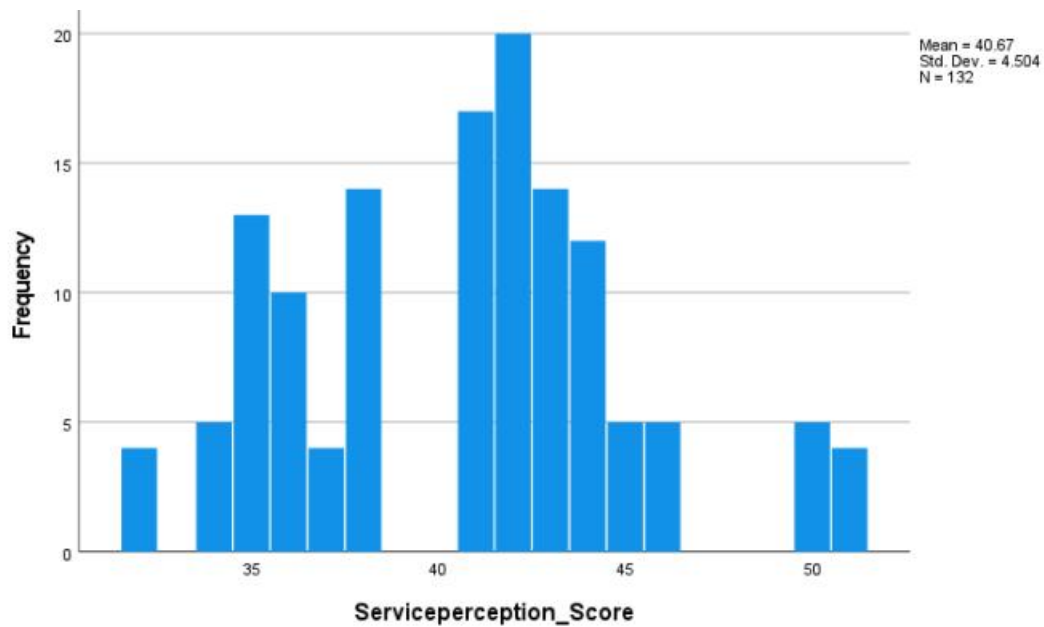
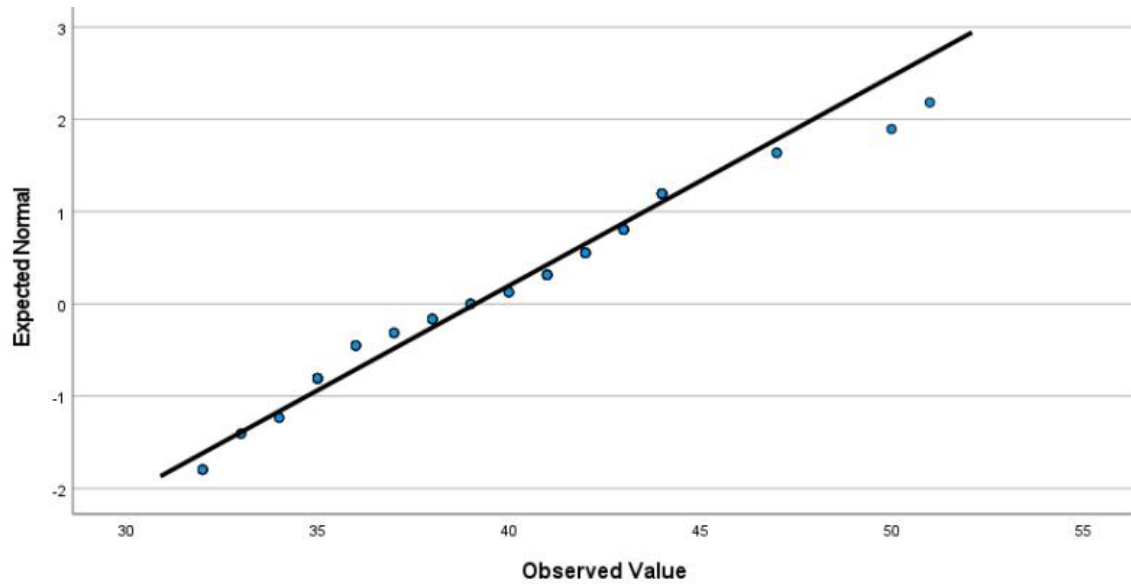


Figure F7

Q-Q Plot Showing Views on Service Score of Lapsed Donors

**Figure F8**

Q-Q Plot Showing Views on Service Score of Regular Donors

