

**CHALLENGES FACING NATIONAL BLOOD TRANSFUSION SERVICES
IN RETAINING VOLUNTARY BLOOD DONORS IN MBEYA CITY
COUNCIL: A CROSS-SECTIONAL STUDY**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF SOCIAL WORK**

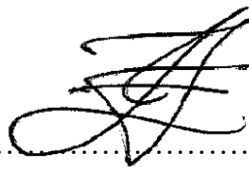
DEPARTMENT OF SOCIOLOGY AND SOCIAL WORK

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2023

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by The Open University of Tanzania a dissertation entitled “**Challenges Facing National Blood Transfusion Services in Retaining Voluntary Blood Donors in Mbeya City Council**”. In partial fulfillment of the requirements for the degree of Master of Social Work (MSW) of The Open University of Tanzania.



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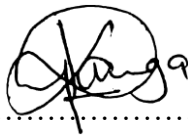
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DECLARATION

I, **Latifa Nyakunga**, declare that, the work presented in this dissertation is original. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfillment of the requirements for the degree of Master of Social Work of The Open University of Tanzania.



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Signature

.....
Date

DEDICATION

I dedicate this special study to my parents Mr.& Mrs. Zakaria Nyakunga and family members. Last to my sisters supported me during my study

ACKNOWLEDGEMENT

This study of the challenges facing NBTS in retaining voluntary blood donors in Mbeya city council has been successfully completed with the support of my supervisor Dr John Msindai. He assisted and make sure that I do the best in this study by giving all requirements needed. The knowledge he gave me helped me to continue for further studies.

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ABSTRACT

The challenges facing retention of blood donors still not well addressed. Therefore, this study assessed challenges facing national blood transfusion services in retaining voluntary blood donors in Mbeya City. To find out how many regular blood donors are present in Mbeya City; specifically, the study examined the attitudes of people towards blood donation, the challenges facing NBTS in retaining regular blood donors and identified ways of overcoming challenges in order to increase retention of voluntary blood donors. A descriptive cross-sectional study involving 114 respondents was carried out using questionnaires and interviews. The data were collected and analyzed while the qualitative data were transcribed and coded depending on the objectives of the study. The majority of participants aged 36-45 years and most were male about 51% were involved in the study. The categories of respondents were community members 51% and about 50% had less than Tsh. 500,000/= monthly incomes. From the randomly selected sample of 114 respondents, 62(54.4%) respondents replied that they had donated blood at least once in their life. The study results revealed that blood collection in Mbeya relies heavily on family replacement and voluntary donation while voluntary donation leads by more 77% of all collections. This study revealed that some people donate blood only if a family member is in need, others are paid to donate and others just give blood voluntarily regardless of the relationship they have with the patient. The reasons for blood donation about 48.0% was due saving the lives of those in need regardless of the relationship. The study concludes that, Mbeya City still has few regular blood donors which makes an alarm on the availability of sufficient blood in the blood bank.

Keywords: *Retention of blood, blood donors, blood transfusion, Mbeya City*

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LIST OF ABBREVIATIONS

HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
MOH	Ministry of Health
MOHCDGEC	Ministry of Health Community Development Gender Elderly and Children
NBTS	National Blood Transfusion Services
TTI's	Transfusion Transmissible Infections
VBD	Voluntary Blood Donors
VNRBD	Voluntary Non-Remunerated Blood Donors
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background

The availability of safe and enough blood in hospitals worldwide depends on voluntary blood donors and repeated blood donors who donate blood on regular bases. Repeated and regular blood donors help to increase safe blood and reduce high rate of Transfusion Transmissible Infections (TTI) such as Human Immunodeficiency Virus (HIV), syphilis, Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) which may be transmitted during transfusion (WHO, 2010). This is due to the reason that voluntary blood donors donate blood for the purpose of helping others who need blood. Further they understand the importance of safe blood as used in hospitals; therefore, they take care of their health by disassociating themselves from risk behaviors which prevent them from donating blood.

Retention of blood donors has benefits over recruitment of new blood donors. Retention is defined as preventing donors from lapsing and eventually becoming inactive. In the world there are about 7.5 billion people (World Population Data Sheet, 2017). According to World Health Organization (WHO, 2010) in order to have sufficient and safe blood in the country only 1% of the total population is required to donate blood. WHO policy on blood supplies in hospitals stress on promotion of voluntary blood donation than family replacement and paid blood donors to avoid the risk of Transfusion Transmissible infections because people donate freely without any force from relatives and payment purpose.

In Africa the problem of blood donor retention is faced by many of the African countries especially in sub-Saharan countries where they base on mixing of donating blood from both family replacements and voluntary blood donation. This is done because the number of voluntary blood donors is not enough to meet the need of blood in our hospitals. There are only few countries who meet hundred percent voluntary blood donations in Africa which are South Africa, Namibia and Zimbabwe who have reached hundred percent voluntary blood donations. According to WHO (2011) report, 43 countries in the African region reported collecting 4 million units of blood which accounts for 4.3 percent of the global donations although these countries around 12 % of the global population. This highlights a clear pattern that the majority of countries collect less blood than the country's need.

Dr. Dhingra, WHO coordinator blood transfusion safety (2006) also asserts that blood donation rates in Africa is very low. It is about five percent per one thousand population compared with developed countries which collect forty seven percent per thousand population in the United States. WHO reports that in Sub Saharan Africa 35(87%) countries collect less than half of the blood needed to meet the transfusion requirements of their countries (WHO, 2008). According to WHO GDBS report of 2008 until 2008 collection of sufficient blood to meet the demand remains a challenge in many African countries such as Zambia which collect six units per thousand population and Malawi less than ten units per 1000 population.

In Rwanda, blood collection has been successfully achieved and it is not a problem to Rwanda hospitals due to the fact that, they manage to fulfill the requirement of

hospitals which are transfusing blood. Rwanda National Blood Transfusion Services(NBTS) report of 6th February 2018 shows that National center for Blood Transfusion has been able to fulfill national hospitals demand for blood for more than 96% in 2017 from 49% in 2014. This is a result of strong awareness/marketing programs, implementation of annual blood collection plan and partnership through memorandum of understanding with institutions with big population, organizing blood donation campaigns and developing a donor communication strategy.

In Tanzania blood collection does not differ much with the collection of sub-Saharan Africa where the collection is less than 50% of the target and still depend on both family replacement and voluntary blood donation. According to Donor recruitment and retention guideline (2015), in Tanzania collected blood from Voluntary Non-Remunerated Blood Donors accounts for only 33% of the blood transfusion needs and the country continues to rely on donations by relatives in the events of patient requires a transfusion. The guideline explains that the deficit of 67% of blood requirement has been contributed to weak donor mobilization strategies, challenges in donor recruitment systems, and failure to retain blood donors which present a significant challenge to NBTS as it strives to maintain a continuous blood supply to health facilities.

1.2 Statement of the Problem

The mission of National Blood Transfusion Services is to be the sole organization in the country ensuring the availability of safe and enough blood and blood products that meets the national and international standards. Tanzania needs to have 100%

voluntary blood donors who donate blood on regular basis. In this case, having repeated and regular blood donors are the most important and help the country to meet the national and international standards. Tanzania under the MOH established a facility which deals with recruiting and collecting blood from different institutions and communities in voluntary basis and retains those donors to continue donating blood regularly. They collect, screen and supply safe blood to different hospitals which are transfusing blood. It is a responsibility of NBTS to ensure that all hospitals are transfusing blood which has been donated from voluntary blood donors.

Regarding this situation, blood transfusion services face problem of retaining voluntary blood donors which leads to shortage of blood in our hospitals. The facility manages to meet only 33% of the hospitals need. This causes the deficit of 67% of voluntary blood donors, (Recruitment and retention guideline 2015). According to Mauka (2014).

Tanzania NBTS total blood needed in 2013 was 450,000 units of blood and September 2013 to September 2014 total of 133,077 units of blood were collected which was almost 30 percent of the national requirements whereas 80% of the blood donors donated once. This shows that the number of blood donors who repeat to donate blood is low compared to the donors who are coming to donate for their first time.

In order to solve the problem, the Ministry of Health Community Development Gender Elderly and Children established small blood banks (satellites) and gave the role of center to collect blood and send them at Blood Transfusion Center for

screening. This aimed at reducing the scarcity of 67% deficit and to capture blood donors who cannot be able to reach NBTS center for repeating to donate blood again.

Despite the above measures taken by the MOHCDGEC, there is still a challenge of retaining blood donors to continue to donate blood regularly so as to solve the problem of blood shortage in our hospitals. This led to dependency of blood from patient relatives which is not advised by WHO as safe and reliable source of blood. It is against this background that this research intends to address the challenges facing NBTS in retaining regular blood donors.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to assess the challenges facing NBTS in Mbeya City in retaining blood donors for donation of blood regularly.

1.3.2 Specific Objectives

- i) To find out how many regular blood donors are present in Mbeya City;
- ii) To examine attitudes of people towards blood donation in Mbeya City;
- iii) To identify challenges facing NBTS in retaining regular blood donors;
- iv) To find solutions for overcoming challenges in order to increase retention of voluntary blood donors.

1.4 Research Questions

- i) How many regular blood donors in Mbeya city?

- ii) What is the attitude of people in Mbeya City towards blood donation?
- iii) What are the challenges facing NBTS in retaining regular blood donors?
- iv) How can the problem of raising blood donor retention be solved?

1.5 Significance of the study

As the research intends to assess on the challenges of blood donor retention as the major obstacle in meeting the blood needs in our hospitals, it will identify them and design ways of eliminating the obstacles. This study is so significant to the extent that it will help to identify as to why there is poor retention of voluntary and regular blood donors and the impact thereto. Also the study will come up with solutions which may be adopted by the government of Tanzania through NBTS to solve the challenges in retaining blood donors. Moreover, the study will help to increase voluntary blood donation from different people with safe blood from voluntary blood donors hence save the life of people who are in need in our hospitals and the community at large. The study will sensitize communities on the needs of safe blood in hospitals and the importance of enlisting as regular voluntary blood donors.

1.6 Limitations

In this part I wish to highlight the main problem encountered during the study. These are data collection from the respondent who was always tight on their official duties which resulted to late data collection and analyses and report compilation.

The problem of fund also was an obstacle due to the fact that I was responsible to all costs during the study and I was not sponsored by any person or institution.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter begins with the definition of terms and concepts. Then this section delves into the theories that explain the poor state of blood donation in general; and passes over to empirical literature review. The review of empirical literature comprises books, articles, papers, journals, and other studies which explain the same problem. The literature review critically examines areas covered, methods applied, results obtained and areas not covered which are of interest in this study. As a result of the review gaps in knowledge and research are identified. The identification of research gaps is closely followed by the erection of the conceptual framework which illustrates the major variables to be studied in this research.

2.2 Definition of Terms and Concepts

2.2.1 Blood Donor Retention

Blood donor retention is defined as preventing donors from lapsing and eventually becoming inactive. A donor is a person who gives something freely e.g. blood. Retention is defined as the continued use, existence, or possession of something or someone: The condition of retaining (keeping) something. (Cambridge Dictionary). Therefore, in the context of blood donors, it is the state of retaining (keeping) a donor for a long time once you have found one <http://www.businessdictionary.com/definition/retention.html>.

A strong system for the recruitment and retention of voluntary, non-remunerated blood donors ensures safe and adequate blood supplies and equitable access to safe blood and blood products, (WHO, 2010). Planning *donations* amongst busy lives helps *retention*, and suggestions are given on which interventions might be helpful.

2.2.2 Voluntary Non-Remunerated Blood Donor

Voluntary non-remunerated blood donor is a person who donates blood, plasma or cellular components of his /her own free will and receives no payments for it either in form of cash, or in kind which could be considered a substitute for money, (Recruitment Guideline, 2015). In this study voluntary non-remunerated blood donor is a person who donate blood freely without waiting to donate to a member of a family, friend or donate for payment purposes.

2.2.3 Regular Blood Donor

Regular blood donor is a voluntary non-remunerated blood donor who has donated at least three times, and the last donation being within the previous year, and continues to donate regularly without any break for longer duration (NACO, 2007). According to WHO, (2007) adequate stocks of safe blood can only be assured by regular donation by voluntary unpaid blood donors. In this study regular blood donor is a person who donate blood repetitively.

2.2.4 Repeat Blood Donor

Repeat blood donor is a voluntary non-remunerated blood donor who has donated at least twice a year (NACO, 2007). Repeat blood donation is affected by proximity of

donating site, awareness of the blood donation interval, intention to donate, and experience on previous donation, (Mahande et al. 2015).

2.2.5 Family Replacement Blood Donor

Family replacement blood donor is a donor who donates blood to replace the blood used by a patient who is family member or friend to him/her, (WHO, 2012). For many years, family blood donors have been considered less safe than volunteer non-remunerated blood donors and are actively discouraged by international organizations and affluent countries that support agencies for developing countries (Ahmed et al. 2018).

2.3 Theoretical Literature Review

The study was guided by two theories, namely: The Functionalism Theory and the Social Exchange Theory which were used in identifying the independent, intermediate and dependent variables. In addition, it was possible to explain certain behaviours and phenomena encountered in the investigations. Issue like fear of donating blood, low awareness of the duty for everyone to donate blood and the need for having adequate safe blood for all blood groups in the blood banks throughout the country. That people should find it a shame not to donate blood as frequently as possible. A detailed description and explanation of the theories is given below.

2.3.1 Functionalism Theory

Functionalism theory views the society as a system of interdependent parts. The functionalists believe that there are specific requirements (functional prerequisites)

that must be met in all social systems and that these do provide the basis for the comparative analysis of social institutions. (Holmwood, 2011). The origin of the theory of functionalism can be traced back to 1880s in anthropologists namely: Bronislaw Malinowski (1884-1942), Alfred Radcliffe-Brown (1881-1955) and Emile Durkheim (1858-1917), (Holmwood, 2011). According to the writers of the functionalism theory all actions of individuals are not to be explained by the immediate meanings they have for actors. They are to be explained by the function they serve for the wider social group (Holmwood, 2011).

The functionalism theory can fairly be explained based on the anthropology approach. Under this approach functionalism theory is divided into two types: bio psychological functionalism and structural functionalism. The bio psychological functionalism is explained by the early functionalist Bronislaw Malinowski in 1890 whose focus shifted from group to the individual focusing on how social institutions function in the satisfaction of individual needs. Malinowski explains that basic needs of humans are satisfied by derived cultural or social institutions and that culture is essentially a tool that responds to the needs of humans (Roberts, 2013).

On the other hand, structural functionalism as developed by Emile Durkheim claims that when the individual has been eliminated, society alone remains and that we must seek the explanation of social life in the nature of society itself, (Roberts, 2013). According to Durkheim society is an organism, and just like within an organism, each component plays a necessary part, but none can function alone, and if one experiences a crisis or fails, other parts must adapt to fill the void in some way

(Cossman, 2019). He then concludes that social behavior is more than sum of all individual, (Roberts, 2013).

This theory was used as a guide to this study since it stresses on importance of solidarity in the society for the purpose of reaching a collective goal. In the view of retaining voluntary blood donors, developing a culture of donating blood voluntarily and regularly in society can be the best tool in solving the challenges of retaining voluntary blood donors as explained by Roberts (2013) in the Malinowski's theory of functionalism. Moreover, the society should be made aware that each individual depends on the fellow at one point and none can stand alone as far as blood need is concerned as explained by Cossman (2019) in Durkheim theory of structural functionalism.

Despite the contribution of this theory to the study, it is featured with a couple of critics' weaknesses which this study wishes to find answers to at the end of the study. One of the weaknesses is that the functionalists define culture as a result of its function not the course of action which means if certain behavior doesn't not produce the intended effects, then it is not considered worthy (Holmwood, 2013). If one has to look on the light of blood donation it will then mean that all existing strategies for accessing safe and sufficient blood should be dumped because they have failed to bring the intended results in many of developing countries which goes contrary to the fact that regular voluntary blood donation has proved to be a reliable source of safe and sufficient blood in some countries in developed countries.

The functionalism theory also attached everything to culture in the society without acknowledging cultural diversities and the fact that some people do not abide to some norms yet they can be useful for the society. Moreover, functionalism theory may cause chaos in the society if used with bad intention for instance causing strikes in schools. According to (Gradesfixer, 2019) functionalism theory limits individuals from assuming personal roles to reaching a certain goal if the collective one has failed. Taking to consideration Gradesfixer's arguments if the society do not believe in donating blood nothing can be done to change their minds even if some individual in the same society wishes to donate.

In order to increase the number of voluntary blood donors, a culture of voluntary blood donation has got to be inculcated among people. People should find it a shame not to have donated blood in their lives. News media should be enlisted in the campaign to all people in the country for them to become regular blood donors. In so doing a culture will develop as people and communities realize that there is a thing like voluntary blood donation that every citizen is called upon to participate in order to save lives. As things stand now very few elderly people, and even young ones have ever donated blood in their lives. most of them the need to do so arises only when someone in their family is in need. Therefore, sensitization of communities should be on the top of the agenda.

2.3.2 Social Exchange Theory

Social exchange theory is a social psychological and sociological perspective that explains social exchange and stability as a process of negotiated exchanges between

parties. Social exchange theory was developed by Thibout and Kelly in 1952 suggesting that people retain relationships for gaining purpose (Oladepo & Olanipekun, 2016). Cook & Rice, (2006) on the other hand assert that humans in social situations choose behaviors that maximize their likelihood of meeting self-interests in those situations.

According to (Blau, 1964; Cropanzano & Mitchell, 2005) social exchange involves a series of interactions that generates obligations and that these interactions are usually seen as interdependent and contingent on the actions of another person. As the theory suggests that people commit into a relationship that is mutually beneficial to them. This theory can then be used to explain the challenges of retaining voluntary blood donors.

Social exchange theory also suggest that humans are likely to constantly respond to an action that give them a reward “when a person is rewarded for his or her actions, he or she tends to repeat the action (Oladepo&Olanipekun, 2016). For the purpose of this study this proposition can be used to evaluate the effectiveness of the current strategies used to retain blood voluntary blood donors. In this regard, social exchange theory can be used to explain why many people in developing countries commit to family replacement and paid type of blood donation as (Oladepo&Olanipekun, 2016) suggest that “humans act with other humans in full recognition that their acts will be noticed and, in some way, reciprocated”.

As other theories, social exchange there is been criticized for treating human behavior or social interaction as exchange, (Zafiroviski, 2005). Exchange theory is

based on the premise that human behavior or social interaction is an exchange of activity, tangible and intangible (Homans, 1961; Zafiroviski, 2005). Assumption that humans only commit into relationships or interact in the community for purpose of gaining something out of the interaction and if their expectations are not met, they are likely to limit their interactions disregard other people in the society who give for charity including blood donors. Although this assumption can be used to motivate people in doing something of benefit to the society, at the same time it treats people in the society as only opportunists who can never give without return.

Social exchange theory is also criticized for attracting negative vibes in the society as it is for positive ones (Antony et al, 2017). Since it suggests that people do give or interact for personal gain, people will choose to apply this theory, only a community of opportunists and heartless will be created. This means people will not interact, not help each other or do any good act before they are assured of the benefit. On the other hand, the same assumption can influence people to act negatively if their expectations are not reached.

2.4 Empirical Literature Review

Studies on blood donation have been conducted in both developed and developing countries for varying objectives. This section will discuss a few studies that are closely related to the objectives of the study which are to find out the number of regular blood donors, challenges associated with retaining regular blood donors and voluntary blood donors as well as solutions for retaining voluntary blood donors.

Ahmed et al, (2017) conducted a study on blood donation; knowledge, attitude and beliefs of the female attendants in Pakistan. This study was conducted basing on the stated fact that participation of women in blood donation process has been scarce equally in low & high resourced countries (Ahmed et al, 2017). Every year 3.5 million blood donations are collected in

Pakistan with very little percentage of females donating blood, (Ahmed et al, 2017).

The objective of the study was to assess the knowledge, attitude and beliefs of female attendants accompanying the patients. Cross-sectional approach was used to conduct the study which involved children's hospital and institute of Child Health. The study was conducted in 2015 and it took six months. The study sample included 306 females of age 16-50 years accompanying a patient in the hospital which were randomly picked.

The findings revealed that only 12.7% of respondents had donated blood before. 93.8% had the idea that a blood transfusion is a lifesaving procedure but only half of them knew the common blood groups. 87.3% knew that both males and females can donate blood but 75.5% thought that males are better donors than females. The study also noted a lack of knowledge about certain important facts about blood donation including transfusion transmissible infections, donation frequency, duration and volume of blood collected during a single session (Ahmed et al. 2017).

It was further discovered that majority believed that they are too fragile to donate blood and that severe and prolonged anemia can develop after donating blood.

Ahmed et al. (2017) therefore concluded that there is a need to develop effective interventions for the education and motivation of potential female donors towards blood donation in order to increase the donor turnover rate. Ahmed et al. (2017) further suggested that Pakistan should establish effective society based educational programs for females and especially mothers about the importance of blood donation, disseminating the necessary information regarding the issue. Local languages, religious beliefs, culture and local traditions should also be considered when setting strategies to attract regular and voluntary blood donors.

Alateeq et al. (2018) on the other hand conducted a study on Factors Influencing the Levels of Recruitment for Blood Donations in Saudi Arabia. Alateeq et al (ibid) put forth that understanding blood donor motivations is essential in successful efficient donor recruitment and retention strategies. The study used cross-sectional survey as a guide to collect data from 700 volunteers living in Soudi City Hail. Participants were randomly selected by simple random regardless of age, gender, and education or occupation.

The results showed that 50.7% of all participants had made a previous donation. Among participants with previous donation, 44% donated only for a friend or family which means they donated because they had no other choice. More interesting part is that that 44% of participants who gave unavoidable donation, 38% donated intentionally while 9.3% donated as a coincidence.

The study therefore concluded that only a small number of people are willing to give a voluntary blood donation, which might be due to lack of awareness towards blood

donation. The great majority of those experienced previous blood donations were due to unavoidable donation (for relative or friend). According to Alateeq et al. (2018) religious, education, occupation factors should be considered in recruitment besides other known factors. Alateeq et al. (2018) further explain that young adult males are future potential donors who can be approached in colleges as most of them are students. The researchers also recommend for awareness programs regularly in the colleges to keep students well informed and motivated.

Another study was conducted in Kerman city, Iran by Mohamad, Pourdamghan & Safizadeh in 2007. The study focused on University Students Awareness and Attitude towards Blood Donation in Kerman City. The study reflected on the notion that students consist of a large and healthy group who are able of providing a large number of blood donation, however, blood donation is rare amongst them. A cross sectional design was used while considering a sample of 500 students in Kerman whose information were obtained through questionnaire.

Data analysis revealed that there was no significant difference in students' attitude between males and females, while males were more aware of blood donation than females. The study also unveiled that with an increase in students' awareness about blood donation, their attitude would improve as well. Moreover, only 24.6% of all students reported a history of blood donation whose awareness and attitude were better than other students. Positive history of blood donation was more frequent in males than females; 33.3% of males vs. 18.7% of females, which is a significant difference between two genders, (Mohamad, Pourdamghan & Safizadeh, 2007).

Similar study was conducted in Kilimanjaro Region Tanzania by Damian et al. (2016).

The objective of study was to evaluate the Knowledge, Attitudes, Practices, and Factors Associated with Voluntary Blood Donation among University Students in Kilimanjaro, Tanzania in 2016. The study was conducted for the purpose of understanding the knowledge and awareness of blood donation among potential blood donors in the population, like young people. Damian et al. (2016) used a cross-sectional design with a sample of 422 students from four selected Universities in Kilimanjaro Region.

Damian's study gave similar results as of Mohamad, Pourdam ghan & Safizadeh (2007) which was conducted in Iran in 2007. The results revealed that 30% of all respondents had ever donated blood and that among the donors 55% were repeated blood donors. It was also discovered that majority of the participants (93%) had positive attitudes towards blood donation whereby 88% displayed a will to donate in the future.

The study recommends the country should take advantage of the level of awareness among young people (University students) positive attitude, and a will to donate blood to collect more blood, retain them and motivate more young people to engage in blood donation. More importantly young people should be educated on the value of blood donation in saving lives and to give them correct information on overall requirements for blood donation, (Damian et al. 2016).

Heir et al. (2005) on the other hand conducted a survey in Norway for the purpose of establishing which motivational and socio-demographic factors influence long-term commitment as a voluntary, non-remunerated blood donor. A cross-sectional design guided selection of a sample of active donors in Oslo Norway. During donation donors were asked to fill a self-administered questionnaire. Five dimensions of blood-donor motivation were identified with factor analysis. These were: altruism and empathy; social reasons (such as the influence of friends and family); strengthening of one's self-esteem; positive experiences associated with donation; and a moral obligation to donate.

The results indicate that for the case of altruism 55% of all donors had been recruited by interpersonal contacts, 28.5% were recruited by colleagues, neighbors or acquaintances, 12% were recruited by relatives and 10.5% by friends, but only 4.5% were recruited by a spouse or partner. Another group of donors claimed to have been recruited by media advertisement whereby 20% of donors had been recruited via advertisements in newspapers, magazines, leaflets, posters, TV or radio. Other types of recruitment represented only a small percentage of the reported influences to volunteer for blood donation.

The study further revealed that commitment to donate blood is high among the Norwegian blood donors where by about 50% of the blood donors had donated more than twenty times and most of the blood donors donate blood for altruistic and empathetic reasons while others are influenced by friends and family. This indicates that most of the blood donors in Norway have a tendency of donating blood

regularly. This tendency promotes donors' health status and reduce the risk of donating blood which has transmissible infections, (Heir et al. 2005). The Norwegian example implies that blood donation to them is part of their culture and they understand the importance of blood donation.

2.5 Synopsis

Many countries in the world especially developing countries are facing challenges of having sufficient and reliable sources of blood hence operates on pressure. Voluntary and regular blood donors are suggested to be a reliable source of blood and blood products. Tanzania under the Ministry of Health established a facility which deals with recruiting and collecting blood from different institutions and communities in voluntary basis and retains those donors to continue donating blood regularly. However, the rate of safe sufficient blood collection is still low hence this study.

This study intends to find out the challenges facing the National Blood Transfusion Services in retaining voluntary blood donors. The study will focus on number of regular blood donors, challenges facing NBTS in retaining regular blood donors, challenges facing NBTS in retaining voluntary blood donors as well as major proposed solutions for retention of voluntary blood donors.

Descriptive cross-section will guide the study. A sample of 100 respondents from Mbeya city council will be used. Research participants will be selected through simple random sampling and purpose sampling. The sample will include repeated blood donors, NBTS staff, social workers, social institutions as well as facilities

selected by NBTS to collect blood from voluntary blood donors. Data collection will be done through interviews and questionnaire. Data analysis on the other hand will be done by SPSS program.

2.6 Research Gaps

In an effort to find a safe and sustainable source of blood donations all literature emphasizes that voluntary and regular blood donors as the best source. The challenge comes on how to retain that source. Literature review from developed countries shows a significant progress in collection of safe and sufficient blood from voluntary and regular donors while developing countries still struggle and many depend on family replacement and paid donors. While literature review from developed countries identifies the motives behind the progress collection of safe and sufficient blood literature from developing countries particularly Tanzania have concentrated in blood donation by University Students and the ratio of blood donation between men and women while leaving other members of community unattended. Research on blood donor motivation has started, in the 1970s, studies have mostly focused on recruitment of new blood donors, whilst retention of blood donors has often been overlooked. This study will, therefore, cover this gap by looking into challenges facing NBTS in retaining blood donors from all groups in the community and suggest possible strategies to retain regular voluntary blood donors reflecting on contemporary developing world. It makes a difference when programs focus on retention of donors rather than focusing on recruitment only.

2.7 Conceptual Framework

The need for blood donor retention is clearly evident to most medical practitioners who frequently encounter the problem, especially when they get patients who require blood from rare blood groups. In the hospitals, they usually have lists of available blood donors of such rare blood groups. And since those people know the problem, they are usually ready to donate blood to help the ailing persons.

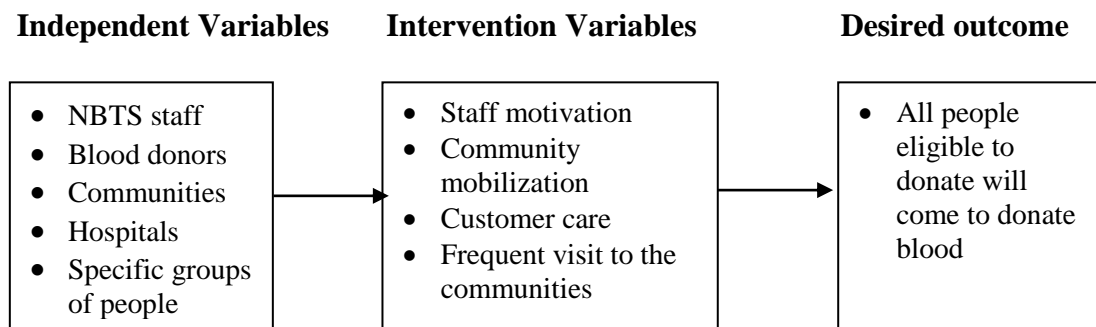


Figure 2.1: Conceptual framework for enhanced blood donation

Source: Current study

Although the burden of ensuring that there is adequate blood for all groups of blood in our hospital's rests on the hospital management, surely communities which are served by the hospitals have a very great role to play. Unfortunately, awareness of the communities on their roles is very low. However, on the other hand, the need for retention of blood donors is crucial for maintaining adequate blood supplies in our hospitals. The challenge of blood donor retention can effectively be influenced by NBTS staff who are responsible and have been given the duty of ensuring the availability of safe blood from donors who are donating in voluntary bases depending on their duration that is 3 months for men and 4 months for women.

When these donors are reluctant to donate, they may cause scarcity of blood in our hospitals, also hospital workers when they fail to retain these donors when they need blood may cause donors fail to repeat to donate blood.

Customer care and appropriate ways of handling of blood donors, sensitization and counseling are essential and necessary to retain blood donors. When blood donors are ill-treated and badly handled by NBTS staff, hospitals lose a lot of potential voluntary regular blood donors. Enlisting the support of religious leaders also boosts the morale of worshipers in donating blood in as many times as possible.

NBTS encourage regular blood donors because they understand that they will help to have blood all the time because people will come to donate on their own will all the time and maintain their health to reduce the risk of getting Transfusion Transmissible Infections. But the participation of all people technically and communities together will help to increase the number of people who are coming to donate blood.

Motivation of NBTS staff is the most important aspect which encourage hard work and extra hours that attract many blood donors to donate blood beyond normal working hours depending their ample time.

Community mobilization. If the community is aware of voluntary blood donation it will be easy for them to donate blood and become regular blood donors. The availability of regular blood donors will help the health facilities to have enough and safe blood.

Frequent visit of the community will help to reach the community and create awareness as a result many people will understand the importance of voluntary blood donation hence, they will donate blood regularly.

All the above will accelerate people to donate blood hence there will be no shortage of blood in hospitals because all eligible people who are willing to donate will donate blood and among them will be retained for further donation.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter provides an overview of how the study was conducted. The chapter includes research design, research area, population, sampling procedures, data collection procedures, data analysis, validity and reliability as well as ethical considerations.

3.2 Research Design

Research design is defined as a structure within which research is conducted. It is a blueprint for data collection, measurement and analysis (Kothari 2004). It provides a plan or strategy for conducting the research (Wiersma and Jurs, 2009). The study was conducted using a descriptive cross-sectional research design. It was selected due to the fact that it has less cost, it is time saving and provides a lot of information at short time.

The descriptive study design enabled us to “describe” situations, subjects, behavior, feelings, emotions and phenomena. Using this design, it was possible to answer questions of who, what, when, where, and how was associated with blood donation particularly volunteer permanent blood donors. The design allowed the researcher to gather quantifiable information that was used to statistically analyze target audiences or particular subjects.

Descriptive information provided rich data sets bringing to light new knowledge and awareness that may have otherwise gone unnoticed. It allowed the researcher to observe natural behaviors without affecting them and interfering in any way. The study is called cross sectional because the data will be collected at only once at one point.

3.3 Research Approaches and Related Instruments

The study adopted both qualitative and quantitative research approaches for collection of data in the field. Qualitative research approach was selected basing on the fact that it is highly exhaustive and reliable because it allows deep exploration of respondents to obtain information that is vivid and comprehensive (Cohen et al. 2000). The approach provided room to the researcher to enter the respondents' personal world in order to gain deep and clear understanding of their knowledge, experiences and feelings (Creswell, 1998). Thus, this approach was earmarked for the investigation on the involvement of all communities in blood donation.

Qualitative approach was also selected because its data collection method allows use of more than one technique. The use of more than one technique enabled the researcher to counter and strengthen data reliability. Therefore, the qualitative research approach enabled the community members and leaders to describe and narrate their experiences, anxieties and feelings towards blood donations. Quantitative research approach supported qualitative findings. Questionnaires were the major instruments used under this design.

3.4 Research Area

The study was conducted in Mbeya City which is in Tanzania mainland in Mbeya

Region southern west of Tanzania. The region is commonly known as southern highlands zone. The area is surrounded by Mbeya District in northern, eastern, southern and western directions. The area is accessible by the main road from Dar es Salaam to Zambia, TAZARA Railway from Dar es Salaam to Zambia and by air. Mbeya City is an elevated land along the slopes of Mount Mbeya ranges. It is characterized by temperature of 11°C to 25°C and rainfall 1200 mm from November to May every year.

The area was selected due to the reason that it has high population compared to other areas in southern highland zone; and the area has got many hospitals which are transfusing blood compared to other areas with hospitals which are using blood as a therapy.

3.5 Population

Mbeya City has a population of about 385,279 according to the National Census. of 2012 from the total population of 2,707,410 the whole region. According to the census, the population growth rate is about 2.7 like most of the regions in Tanzania mainland.

According to this population, the number of males is about 182,620 and females is about 202,659. From the total population the age group which is recommended for blood donation is between the age of 18 years up to 60 years. This shows that

eligible population for blood donation is about 179,111. The area has been given the target of about 8682 units of blood per year. The study population involved all individuals who are found within the particular area. The following members of the population were contacted so as to get information about the problem: NBTS staff members, satellites, religious leaders community members in the area. In relation to youth and religion groups there were choirs' groups, Muslim young men dishing food and washing sick people in hospitals (JAI). These groups were sampled.

Jamiiyatul Akhlaaqul Islaamiyyah (JAI) is an organization of Muslims operating to solve some of these back breaking challenges, dealing with patients with no financial support or even abandoned by their families due to their illness and long stay in hospitals. For years now, the organization has struggled to provide for important and lifesaving medical treatment to patients inside the hospitals.

The main sources of funding for the cause has been through masjid donations once a week at a local masjid inside the hospital compound which is subdivided into aid in feeding the patients, paying medical bills, transport and provision of other necessities like child and adult diapers etc.

Apart from that its services 3 sister hospitals, all located in the same compound and provides community services to orphanages and multiple other areas of need. Due to demand the services of JAI are spreading all over the country in hospitals, including Mbeya City. These religious groupings can be sensitized to provide permanent blood donors

3.6 Sample

3.6.1 Sample Size Calculations

In order to get the sample size, the following formula was used:

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

Where

n = Required sample size of the study population

N = Size of the Universe population of the community studied =

179,111 σ_p = Assumed standard deviation of the studied population

= 2.15 e = Acceptance error for the whole estimation = 0.05

Z = Table value under normal curve for the given confidence level of

95% $n = \frac{(0.95)^2 179,111 (2.15)^2}{(179,111-1) (0.05)^2 + (0.95)^2 (2.15)^2}$

$n = 83.48$

$n = 84$

This means that a minimum of 84 sample size is enough for the study. However, this study used a sample size of 114.

3.6.2 Sampling Procedures

Sampling is the process of selecting units to generalize the results (Omair, 2014).

The study used people who have been authorized to give in depth information on blood donor retention in Mbeya City. Therefore, in this study the researcher interviewed NBTS staff members who are responsible in blood donor retention,

hospital leaders who have been given the task to retain blood donors. Those who were willing to fill in the questionnaire were given questionnaires which were collected later. The study also collected information from people who have denoted as they are ones who are supposed to continue to donate blood on regular bases and to see if they have already been retained.

The study collected information from other community members who are active in blood donation activities and were among of the people who could volunteer give blood continuously on regular basis. This also included some of the patients who had received blood as well as the victims of blood need. The sample also included religious groups, such as choirs, volunteers from Muslim groups who provide food to patients who are hospitalized.

3.7 Data Collection Procedures

This study used both primary and secondary data to get information about blood donor retention in Mbeya City.

3.7.1 Primary Data

These are data which are obtained direct from the field. They were collected from NBTS staffs, blood donors, satellites and other community members and hospitals which were transfusing blood. Raw data were collected through questionnaires and interviews.

Questionnaires: Questionnaires were distributed to obtain information from NBTS staff members, satellites staff members and community members, blood donors and

leaders from different intuitions. Questionnaire consists of a number of questions printed, hand written or typed in a definite order on a form or set of forms. According to Kothari (1990) questionnaires are the most widely used instruments for obtaining information from individuals. A questionnaire consists of a number of questions set in a definite order on a form or set of forms. McMillan and Schumpeter (1993) support the use of questionnaire by pointing out that a questionnaire is relatively economical, has standardized questions, can ensure anonymity and questions can be written for specific purposes. Denscombe (1998) adds that questionnaires are economical in the sense that they can supply a considerable amount of research data for relative low cost in terms of materials money and time. He continues to argue that in using questionnaire, there is possibility of all questions to be answered. Information obtained through questionnaire can easily be interpreted as they emanate from standardized questions given to all respondents.

However, questionnaire has some limitation in data collection. For instance, some respondents may not have the same understanding of the questions, hence failure to get all the required information (Cohen et al, 2000). Some people may ignore to respond. It is difficult to administer this instrument to people who cannot read and write properly. Postal questionnaire offers little opportunity for the researcher to check truthfulness of answers given by respondents because the researcher does not meet the respondent and because the answers are given at distance. The researcher cannot pursue a number of clues that an interviewer might be able determine whether the answer is general or not (*Denscombe, 1998*).

Interview: Data were collected from the management of NBTS through in-depth interviews which helped to gather information about a particular study. The interviews touched on the challenges, impacts and solutions of blood donor retention in Mbeya City. An interview is a conversation for gathering information. A research interview involves an interviewer, who coordinates the process of the conversation and asks questions, and an interviewee, who responds to those questions. Interviews can be conducted face-to-face or over the telephone. The internet is also emerging as a tool for interviewing.

The interviews enabled us to collect in-depth information on people's opinions, thoughts, experiences, and feelings on blood donation and blood donor retention. Interviews were useful when the topic of inquiry related to issues that require complex questioning and considerable probing such as regular blood donation to blood banks. Face-to face interviews were suitable when the target population could communicate through face-to-face conversations better than through writing or phone conversations especially on issues touching on the health of people after blood donation.

3.7.2 Secondary Data

Secondary data were gathered from the institution records relating to blood donor retention. These data included total blood collected from voluntary non-remunerated blood donors, repeat and regular blood donors who come to donate at the NBTS center.

3.8 Data Analysis

Data cleaning and coding were carried out after collection of data and they were finalized through review of data collection instrument in the field at the end of collection day and entered and computed by SPSS computer program. Quantitative data were analyzed and presented in tables, figures and graphs. Thematic data analyses were ~~will be~~ carried out for qualitative data. The technique involved identifying coherent and important examples, including themes and patterns in qualitative data. Thus, qualitative data collected were classified, categorized and organized according to units of meaning for each response generated. Thereafter, the results of thematic data analysis were discussed before drawing conclusions.

3.9 Validity and Reliability

These are two criteria for good measurements in research. Validity was concerned with what an instrument measured, and how well it did so. Reliability concerns the faith that one can have in the data obtained from the use of an instrument, that is, the degree to which any measuring tool controls for random error.

3.9.1 Validity

Validity is the degree to which a research instrument measures what it intends to measure. There are two main types of validity, internal and external. Internal validity refers to the validity of the measurement and test itself, whereas external validity refers to the ability to generalize the findings to the target population. Both are very important in analyzing the appropriateness, meaningfulness and usefulness of a research study. However, in this study the focus was on the validity of the

measurement technique (i.e. internal validity). It ensured credibility, transferability, dependability and conformability. Pilot testing was carried out at the beginning of the study and triangulation was carried out to test the stability of data, albeit from different data collection instruments.

3.9.2 Reliability

Reliability is the degree to which an assessment tool produces stable and consistent results. Test-retest reliability is a measure of reliability obtained by administering the same test twice over a period of time to a group of individuals. Parallel form's reliability was used to measure reliability by administering different versions of an assessment tool (both versions containing items that probed the same constructs, skills, knowledge bases, etc.) to the same group of individuals. The scores from the two versions were then correlated in order to evaluate the consistency of results across alternate versions.

3.10 Ethical Considerations

Ethical considerations in research are critical. Ethics are the norms or standards for conduct that distinguish between right and wrong. They help to determine the difference between acceptable and unacceptable behaviors. Why were ethical considerations so important in this research? First, ethical standards had to be adhered to prevent the fabrication or falsifying of data and therefore, promote the pursuit of knowledge and truth which was the primary goal of this research. Ethical behavior was also critical for collaborative work because it encouraged an environment of trust, accountability, and mutual respect among researchers. This

was especially important when considering issues related to data sharing, co-authorship, copyright guidelines, confidentiality, and many other issues. The researcher adhered to ethical standards in order for the public to support and believe in the research. The public was assured that researchers were following the appropriate guidelines for issues such as human rights, animal welfare, compliance with the law, conflicts of interest, safety, health standards and so on. The handling of these ethical issues greatly impacted on the integrity of the research project and can affect whether or not the project received funding and permissions.

Because ethical considerations are so important in research, many professional associations and agencies have adopted codes and policies that outline ethical behavior and guide researchers. In this research, the code of conduct for medical personnel in

Tanzania was used. The code of conduct addresses issues such as honesty, objectivity, respect for intellectual property, social responsibility, confidentiality, non-discrimination and many others. These codes and policies provide basic guidelines, but researchers still faced additional issues that were not specifically addressed and this required decision-making on the part of the researcher in order to avoid misconduct. The resources on this page address many of those issues and the case studies used to provide excellent examples of these types of issues.

One of the most important ethical considerations in research was the use of human subjects. To address these considerations, most institutions and organizations have developed an Institutional Review Board (IRB). An IRB is a panel of people who

help to ensure the safety of human subjects in research and who assist in making sure that human rights are not violated. They review the research methodology in grant proposals to assure that ethical practices are being utilized. The use of an IRB also helps to protect the institution and the researchers against potential legal implications from any behavior that may be deemed unethical. In order to abide to such requirements, the study ensured that all permits for conducting the research were in place.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter summarizes field materials collected from both primary and secondary sources. It presents in a nutshell the findings from the questionnaires and interviews. The chapter also, illustrates different comparative analysis from previous studies in Tanzania. It also exhibits temporal differences between studies conducted in the past and the current study. The results are presented following the sequence of socio-economic characteristics, number of regular blood as well as major proposed solutions for retention of voluntary blood donors.

4.2 Socio-Economic Characteristics

The socio-economic characteristic section provides background information on categories of respondents, demographic characteristics, economic status as well as education level. Demographic characteristics of the participants include; age and gender, number of family members, income level and the reasons for their inclusion in the study. Education level of respondents in this study reflects exposure, reasoning capacity and power of decision making of some of the respondents.

4.2.1 Respondent Categories

The study involved four categories of respondents namely community members, NBTS and Satellite Staff, Religious leaders and Jay community all located in Mbeya City Council. Community members category carried 51% of all respondents and it included blood donors and non-blood donors (Table 4.1). The majority of

respondents in this study belong to community members category because NBTS highly depends on members of community for blood donation. Likewise, the study found its relevance in searching answers from community views particularly on what hinders their fully engagement in voluntary blood donation and how to influence their participation.

Other categories carry 49% of study participants: JAY community 18%, Religious leaders 16%, Satellites 8% and NBTS staff 7%. Information from these categories was used to complement responses from community members. These categories provided information on the status of blood donation in Mbeya City, current strategies of blood collections, challenges facing blood collection and the best possible solutions to challenges facing NBTS in retaining voluntary blood donors.

Table 4.1: Distribution of participants' categories

Participants	Participant Categories	
	n	%
Community members	58	51
Jay community	20	18
Religious leaders	18	16
Satellites	10	8
NBTS staff	8	7
Total	114	100

4.2.1.1 National Blood Transfusion Services (NBTS) and Satellite Blood Collection Sites

NBTS is a program under the Ministry of Health, Community Development, Elderly and Children. It is mandated to collect blood from voluntary non-remunerated blood donors, process and distribute to all hospitals in the country free of charge.

The program was established in line with World Health Assembly of 1972 which urged all member states including Tanzania to develop comprehensive and well-coordinated blood transfusion services based on voluntary non-remunerated blood donors. As a consequence, NBTS was then established in 2004. NBTS has evolved from hospital-based system relying on 80% family replacement donors to a coordinated centralized system based on voluntary non-remunerated blood donation.

Currently NBTS operates a network of seven blood centers countrywide namely; Lake Zone (Mwanza), Northern Zone (Moshi), Southern Highland (Mbeya), Western Zone (Tabora), Eastern Zone (Dar es Salaam), Southern Zone (Mtwara), and Tanzania People's Defense Force (TPDF) located at Lugalo Military Hospital in Dar es Salaam.

NBTS also has several satellite blood collection sites such as Mnazimmoja, Dodoma, Morogoro, Kagera, Mara, Kigoma, Iringa Mbeya zonal referral hospital Igawilo health center, Mbeya REGION and Lindi. Each zone strategically covers two to three regions except the TPDF which serves a network of military hospitals in the country. Since its establishment, NBTS has managed to increase blood collection from voluntary non-remunerated blood donors from 52,000 (2006) to 196,735 units in 2017. (Recruitment and retention guideline, 2015).

4.2.2 Participants Age and Gender

Age and gender are important variables in this study. The variation of participant age and gender can influence the level of enthusiasm in blood donation. According to

Bani (2010) gender plays key roles in the motivation to give blood (women being more altruistic, men being more individualistic). On the other hand, Saha (2016) affirms that age has a great role to play in donor motivation. The results in Table 4.2 indicate only a slight difference between male and female respondents which made the participation of men and female fairly equal. The equal distribution of male and female in the study was necessary to obtain diverse opinions on the challenges and solutions towards voluntary blood donation. With regard to age, the study was dominated by middle age group (18-45). The middle age group was expected to be more proactive in blood donation than older age groups which in this study covered 10% of all participants.

Table 4.2: Participants according to age and gender in Mbeya City Council

Age group (years)	Female		Sex	Male		Total	
	n	%		n	%	n	%
18-25	15	13.2		12	10.5	27	23.7
26-35	11	9.6		19	16.7	30	26.3
36-45	16	14		14	12.4	30	26.4
46-55	7	6.1		9	7.9	16	14
56-65	7	6.1		4	3.5	11	9.6
TOTAL	56	49		58	51	114	100

4.2.2.1 Participants' Family Members and Income Level

The study findings indicated that the majority of respondents belonged to families with three or more members of families (Table 4.3). While 70% of respondents told the researchers their monthly incomes, the rest 30% were not willing to tell us their monthly income for various reasons including having unfixed monthly income and lack of financial basics understanding.

About 70% respondents who gave their monthly incomes 50% had less than Tsh. 500,000/= monthly incomes. This group represented the majority of community members. Reflecting on the relationship between monthly incomes and the number of family members, results show that the majority of respondents with more than five family members had less than Tsh. 500,000/= income level. In later pages the relationship between income level and family size are discussed in relation to blood donation.

Table 4.3: Participants family size and monthly income

Family Members	Monthly Income for Family Members					
	Less than 500,000		More than 500,001-1,000,000		More than 1,000,000	
	n	%	N	%	n	%
Less than 3	15	13.2	12	10.5	7	6.1
3-4	19	16.7	7	6.1	11	9.6
Equal and more than 5	16	14	14	12.3	13	11.4

4.2.3 Participants' Education Level

The study was dominated by participants with secondary and primary level education 41% and 32% respectively. The study also included participants with higher education levels like bachelor's degree and above as well as informal education level (8%). With these variations in respondents' education levels, the study intended to find the relationship between education level (Table 4.4).

Table 4.4: Participant's level of education

Education Level	n	%
Bachelor's Degree	15	13.2
Tertiary education	18	15.8
Secondary education	41	36.0
Primary school	32	28.1
Non-formal education	8	7.0

Source: Field data, 2020

4.3 Number of Regular Blood Donors in Mbeya City

This study analyzed the number of blood donors by focusing on the proportion of blood donors and demographic characteristics of participants. Age, gender, income and education level all of which were incorporated for this purpose.

4.3.1 Proportion of Blood Donation in Mbeya City

In order to determine the percentage of people in Mbeya City who are blood donors, participants in the study sample were asked whether they have ever donated blood. Data from this study shows the overall proportion of blood donation in Mbeya City was 54.4%. This was obtained by asking participants if they had ever donated blood regardless of how many times they had donated. Since majority of participants were randomly picked, the results suggest that blood donation in Mbeya City is quite fair, however, the proportion does not imply sufficient collection of blood since some of donors may have donated blood only once and most likely a long time ago.

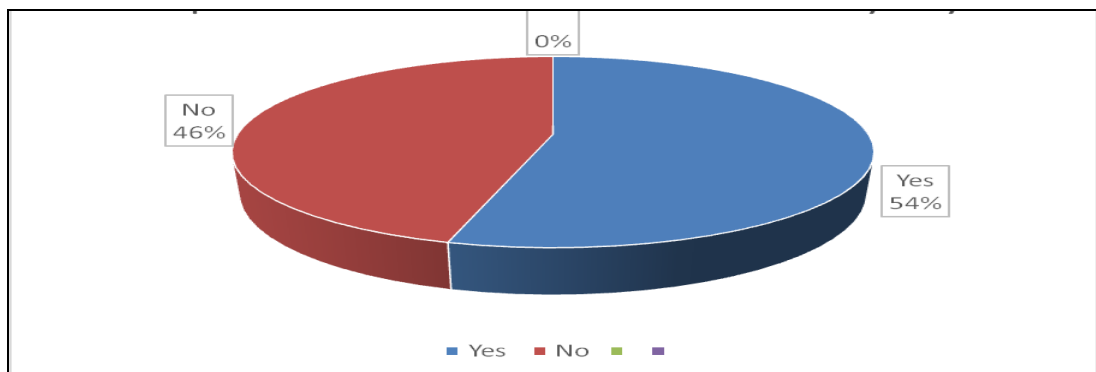


Figure 4.1: Proportion of population who have ever donated blood in Mbeya

Source: Current survey

From the randomly selected sample of 114 respondents, 62(54.4%) respondents replied that they had donated blood at least once in their life. This result suggests that

the number of people in Mbeya City who have at least once donated blood in their lives is relatively high. However, it is not clear whether these donors donated their blood out freely or were forced by circumstances, such as needs of a family member.

4.3.2 Relationship between Age and Blood Donation

The study included participants of age groups between 18 to 65years According to WHO guidelines on blood donation (2012) the age limit for blood donation is between 18 to 65 years. Results show that people of middle age donate blood more than older people. Data from Table 4.5 indicate that in Mbeya City people who fall under the age groups between 18 to 45 years are more active in donating blood than older people above 45 years. According to NBTS the youth account for 80% of all blood donors in Tanzania. Similar results were obtained in a study on “the Influence of Age and Education on Blood Donation in India which was conducted in by Saha in 2016. The study revealed that older people are scared of donating blood due to fear of health risks. Saha (ibid) quoted a participant stating.

“I cannot donate blood at this age”

Table 4.5: Relationship between age and willingness to donate blood

Age (years)		Proportion of Respondents who were willing to donate Blood		Total (%)
		Yes (%)	No (%)	
1.	18-25	20.2	3.6	23.7
2.	26-35	14.9	11.4	26.3
3.	36-45	9.6	16.6	26.3
4.	46-55	6.1	7.9	14
5.	55-65	3.5	6.2	9.6
Total		54.3	45.7	100

Source: Field data, (2020)

The extent of blood donation in Mbeya City seems to be far below the expected 80% donation from the youth. Why is it so? Is it due to resistance to blood donation by the youth? The answer is most probably quite the opposite. The reason is most likely that the culture of blood donation in Mbeya City has not been cultivated. Therefore, this indicates that NBTS in Mbeya City and in Tanzania as a whole has not devoted enough time for sensitization of the communities and individuals, including the youth, on the importance of saving people's lives through blood donation. It should be underlined that the rate of blood donation of a country is a measure of how cultured that nation is. This culture can only be developed through nurturing. The possession of the blood donor card should be taken seriously in the same way the possession of the NHIF card is taken.

4.3.3 Relationship between Gender and Blood Donation

Findings from Table 4.6 indicate that the majority of blood donors in Mbeya City are male (40.7%). Only (13.7%) of women sampled were blood donors. Out of 144 participants of the study only (54%) were blood donors. However, among the blood donors in this study who participated in the study (76%) were men. Moreover, interviews with key informants also suggested that more males donate blood compared to women. A similar study was conducted in Nigeria by Erhabor in 2014 which revealed that cultural and religious issues such as women's dependence on men, the erroneous belief that men are healthier than women, that women make monthly blood donations to nature through their menstrual cycle and other factors such as pregnancy and breastfeeding further restrict many women from donating blood in Nigeria (Erhabor, 2014).

Table 4.6: Willingness to participate in blood donation according to gender

Gender		Willingness to Blood Donation (%)		
		Yes	No	Total
	Male	40.7	20.2	60.9
	Female	13.7	25.4	39.1
Total		54.4	45.6	100

Source: Field data, (2020)

4.3.4 Proportions of Blood collections in Mbeya City Council

Interview with NBTS staff and satellites revealed that in Mbeya City Council NBTS and satellites collects an average of 100-500 units of blood per month. However, the amount of blood collected by NBTS and satellites is definitely not sufficient to meet blood needs in the area. Moreover, the results revealed that blood collection in Mbeya relies heavily on family replacement and voluntary donation while voluntary donation leads by more (77%) of all collections. The results imply that Mbeya has fairly made a shift from high dependence on family blood replacements to voluntary blood donation as the national and WHO policy on blood supply in hospitals directs; but the shift and improvement may not be sustainable as many voluntary donors were only first-time donors.

Table 4.7: The Proportion of total blood collected through voluntary, replacement repeat/regular and demand

Year	Voluntary		Replacement		Repeat/regular		Total collection		Demands
	N	%	n	%	n	%	N	%	
2015	1870	51.2	1651	45.2	130	3.6	3651	100	6313
2016	2733	56.6	1901	39.4	191	4.0	4825	100	8495
2017	3861	83.9	1059	13.7	172	2.4	5092	100	7646
2018	5167	85.9	642	10.7	203	3.4	6012	100	8502
2019	3961	90.9	202	4.7	190	4.4	4353	100	6802

Source: SHZBTC data, (2020)

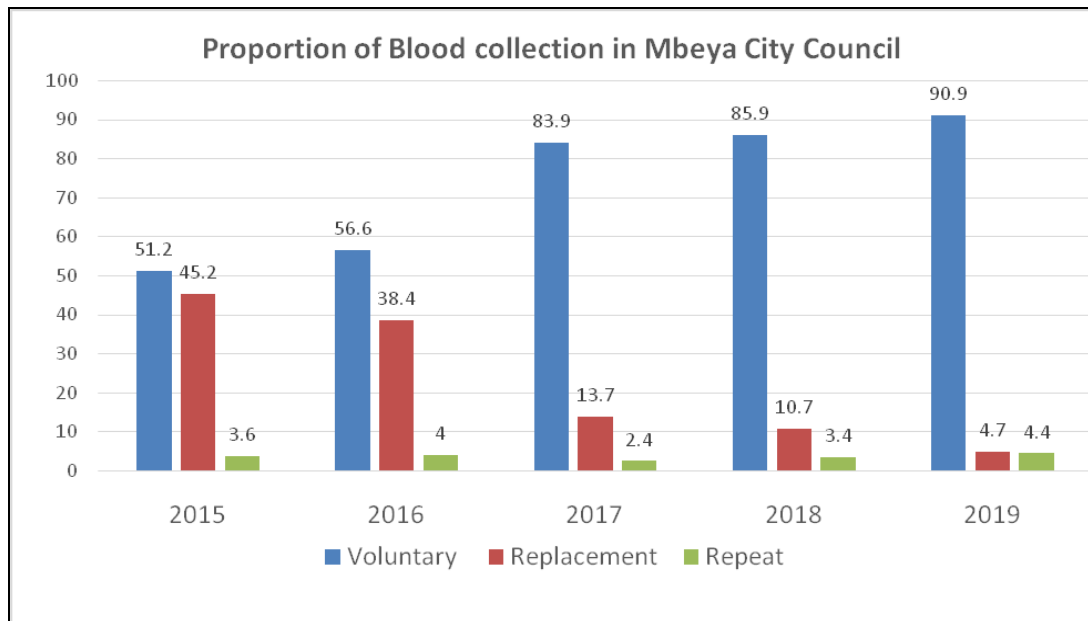


Figure 4.2: Proportion of Blood collections in Mbeya City Council through collected through voluntary, replacement, repeat/regular donations and demand

Source: Current survey

Figure 4.2 shows that voluntary blood donations have increased sharply in recent years; but the voluntary blood donations have almost reached a plateau. It is not clear what is the reason for this. Nevertheless, this can be a problem of combined low storage capacity and inadequate NBTS staff and facilities. I However, repeat and replacement blood have fallen and continue to fall.

4.4 Challenges Facing NBTS in Retaining Voluntary Blood Donors

4.4.1 Motivation towards Blood Donation

People donate blood for various reasons. According to the theory of functionalism, people's actions can be explained by the function they serve for the wider social group, (Holmwood, 2011).

In tandem with The Functionalism Theory, the Hierarchical Needs Theory by Abraham Harold Maslow (1943) stipulates that there are five hierarchical needs in organizations and in the management of employees. According to Maslow's theory, one cannot be satisfied with the second need until the first is satisfied. These levels of needs are displayed in the pyramid from the lowest need at the bottom to the highest need at the top (Figure 4.3). Needs at the bottom of the pyramid are basic physiological requirements including the need for food, clothing, shelter, sleep and warmth (Kapinga, 2015, Jarome, 2013).



Figure 4.3: Maslow's Pyramid of Hierarchical Needs

Source: Maslow's book on Pyramid of hierarchical needs

Once these lower-level needs have been met, people can move on to the next level of needs, which are for safety and security. According to this theory the basic needs at the lowest level NBTS project are the provision of transport, adequate personnel, facilities, blood collection facilities, state of the art laboratory equipment and a conducive working environment indoor and outdoor. These include food, uniforms, desks, beds and chairs, in general good infrastructure.

Job and financial security are also kinds of safety needs which should be considered to NBTS and satellite workers. The government should ensure fair remuneration and stable career to the employees (Jarome, 2013). NBTS should recognize community and various institutional contributions to stimulate continued multiple blood donations.; This should be persistent leading to affection, love of NBTS and creation of a sense of belongingness. The possession of a Blood Donor Card should be valued by all people.

According to WHO, (2010) the reasons why individuals donate blood for the first time is determined by multiple factors such as culture, religion, and individual values and beliefs. While altruism and awareness of the need for blood are often the most common reasons given for donating blood, some studies have found that the gap between motivation and the actual act of first donation is most effectively bridged through the direct influence of friends, relatives and peers, particularly those who are already enthusiastic, committed blood donors. Feelings of the need to assist a family member or friend in need are often the reasons for first blood donation.

Findings from this study revealed that some people donate blood only if a family member is in need, others are paid to donate and others just give blood voluntarily regardless of the relationship they have with the patient. Other respondents claimed that they had never been approached to donate blood; and neither heard of any blood donation campaign.

Nevertheless, despite those selfish individualist tendencies among people in society, the majority, 48% of participants of this study belong to a voluntary group of blood

donors (Table 4.8). This group is also known as voluntary non-remunerated blood donors. The result is a harbinger of high prospects for finding and recruiting many multiple blood donors. This is the group that has to be retained to become regular voluntary non remunerated donors because this group can ensure availability of sufficient and safe blood.

Mbeya City has about 176199 people aged between 18 to 45 years (National Census, 2012). Assuming according to our results that 48% are willing to donate blood voluntarily, it can be assumed that 84575 can willingly become voluntary multiple blood donors. So how do we tap this important resource? Definitely an intensive extensive blood donation campaign might be needed to inform the society about the need to donate blood to save lives, filling the gap in blood supplies that is endemic in hospitals.

Table 4.8: Reasons to why people donate blood in Mbeya City Council

Reasons	n	%
Saving life of a family member	32	28.0
Paid to save life	27	24.0
Saving the lives of those in need regardless of the relationship	55	48.0
Total	114	100.0

Source: Field data, (2020)

4.4.2 Knowledge on the Importance of Donating Blood

The study unveiled some myths about blood donation that frighten people to donate blood. Others believe that blood can be made medically, others understand that blood can always be bought from any part of the world and that the government has

funds and capacity to buy enough blood. Other respondents had concerns with their wellbeing which is influenced by the myths such as, blood donation is only safe for strong muscular people, blood banks take a lot of blood from donors, blood donation can harm health of a donor and that blood donation is painful.

4.4.3 Negative Cultural and Religious Beliefs toward Blood Donation

The study unveiled a number of myths connected to culture and religion that discourage people from donating blood. One of the strong myths concerns women; women are not supposed to donate blood because they donate a lot of blood through menstruation and during birth. In the survey, 57% of the responses affirmed that women should not donate blood because they give out a lot of blood throughout their lifetime. On the other hand, the rest 43% claimed that women should donate blood because they are more vulnerable to blood needs than men, hence they should donate as a storage for future needs and to save fellow women.

The study conducted in Nigeria in 2014 also revealed that female participation in blood donation is still very low (Erhabor, 2014). This is due to cultural and religious issues such as women's dependence on men, the erroneous belief that men are healthier than women, that women make monthly blood donations to nature through their menstrual cycle. Other factors such as pregnancy and breastfeeding further restrict many women from donating blood (Erhabor, 2014).

Findings from this study also revealed that people hesitate to donate blood because it is against their cultural and religious values. There are beliefs that in blood there is

life. Some further believe that upon donation their blood may be used for rituals in hospitals while others believe that they would be spiritually connected with someone who will use their blood. Umeora (2006) in the study of socio-cultural barriers to voluntary blood donation for obstetric use in a rural Nigerian village revealed that men were scared to donate blood for the fear of losing manhood.

4.4.4 Awareness of the Need for Blood in Hospitals

The study found out three major concerns that hinders voluntary blood donation as far as awareness is concerned were issues such as awareness on the need of blood, the amount needed and the outcome of shortage of blood in blood banks; like the number of people who lose life because they could not get blood transfusion in time. About 66% of respondent argued that it is very important to inform the public about the need of blood in blood banks, while 70% suggested that the public should be informed of the amount of blood that is needed in blood banks in order to ensure sufficient availability of blood and save lives. Moreover, 71% of the respondents argued that it is very important to mention the number of lives lost due to shortage of blood.

Table 4.9: Answers of respondents on awareness on the need for blood in hospitals in Mbeya City

Awareness of the Need for Blood in Hospitals	Yes	No
	%	%
It is very important to inform the public about the need of blood in blood banks	66	34
Public should be informed of the amount of blood that is needed in blood banks in order to ensure sufficient availability of blood and save lives	70	30
It is very important to mention the number of lives lost due to shortage of blood	71	29

4.5 Challenges Facing NBTS in Retaining Regular Blood Donors

4.5.1 Number of Regular Blood Donors

The study results indicate that out of 144 participants of the study, only 54.4% had donated blood in their life time, however majority of them had donated only once (Table 4.8). Regular blood donors accounted for only 20.2% of all participants. According to (NACO, 2007) a voluntary regular donor donates at least three times per year, and the last donation being within the previous year, and continues to donate regularly without any break for longer duration (NACO, 2007).

These results imply that the existing efforts to attract and retain regular blood donors have not been effective enough; hence endless shortage of blood in national blood banks. According to WHO, (2007) adequate stocks of safe blood can only be assured by recruiting regular donation by voluntary unpaid blood donors.

Table 4.10: Rate of regular blood donation in Mbeya City Council

Blood donation	How many times have you donated blood? (%)				Total (%)
	Never	One	Twice	More than twice	
Yes	0.0	28.9	5.3	20.2	54.4
No	45.6	0.0	0.0	0.0	45.6
Total	45.6	28.0	5.3	20.2	100.0

Source: Field data, (2020)

4.5.2 Common Challenges of Retaining Regular Blood Donors

Interview with key informants extracted major common challenges that decelerate the efforts to retain regular blood donors. The challenges suggested included poor or lack of awareness on importance of blood donation and its benefits to human health.

Another challenge were myths and religious beliefs that challenge blood donation; Many believe that.

“One can only donate blood once per year”,

Others think that

“Donating blood hurts”

Certain belief's view

“Donating blood is challenging God's creation”,

Others think that,

“if you donate blood to a patient, he or she will take your star and overshadow you” (Source: key informants, interview Mbeya city)

Weak donor motivation and mobilization were identified as other hindrances to regular blood donation. The participants further explained that during their first-time donation they expected that someone would make a follow up on their wellbeing and perhaps convince them to go for a second donation but it was not so. Others were disappointed during their first-time donation; hence they never wished to go for another round

“I expected to be given a t-shirt, instead I was only given a pen. What will do with that pen?”

This concern by blood donors may be the result of poor understanding of the importance and need for voluntary non-remunerated donations and donor recognition strategies.

NBTS uses the following strategy to recognize donors;

For every donation NBTS issues

(i) Stickers:

Stickers are given out at each session to each donor every time they donate. The stickers are cost effective, have attractive designs and phrases that recognize the donor's contribution.

(ii) Pens:

Every donor receives a pen in order to allow the donor to fill out his or her donor questionnaire form. If a large number of donors appear and there are insufficient pens, it sometimes, though very rarely, causes a problem with the flow of the collections.

Ideally, pens are branded with the NBTS logo and "Changia Damu, OkoaMaisha" clarion calls in order to motivate other people to donate while at the same time applauding and recognizing the contribution of the donors.

After the 3rd Donation: At the 3rd donation, each donor is given a permanent donor card. This card is made of cardboard and has room for recording about 17 donations.

After the 5th Donation: Badges, or pins, are given out at the 5th donation. These pins have similar phrases as the stickers, but last longer and are more attractive.

After the 15th Donation: Hero Card: The permanent donor card that is given to donors on the 3rd donation only has room for 17 donation records. Near the 15th donation, the donor will need to replace his or her permanent donor card. At the 15th donation, the donor is given a “Hero Card” that has additional donation record slots and a special logo or design recognizing the donor as a hero for donating so often. The donor also receives a t-shirt with the NBTS logo, which also recognizes the donor for his or her heroic contribution to Tanzania.

After the 25th Donation: Donors who have donated 25 times are incredibly valuable to the NBTS. They have provided a great deal of blood, have shown a high level of commitment to the NBTS, and are a proven source of safe blood. These donors are warmly recognized as great contributors to the blood supply and safety of Tanzania. The 25th donation also corresponds to the goal and criteria for Club 25.

T-Shirt: The t-shirts for the 15th and 25th donations have the NBTS logo and recognize donors for their momentous contribution to Tanzania. Both T-shirts recognize donors and advertise for the NBTS and blood donation. Therefore, the messaging on the t-shirt are made clearly visible and distinctive.

Okoa Maisha Card: The OkoaMaisha card is a similar concept to the Hero card, but it is given out on the 25th donation. The Okoa Maisha Card is tied with Club 25 or a similar club. In addition, when donors have given 50, 75, and 100 times, they receive the bronze, silver, and gold cards, respectively. Due to the rarity of these cards and the important milestone that they represent, these cards are produced with

a higher budget and to higher quality standards than the Permanent card or the Okoa Maisha card.

Certificates and Ceremony on WBDD: In addition to the T-shirt and the Okoa Maisha card, the donors can be celebrated during a ceremony at the annual World Blood Donor Day celebration, where the donors are given certificates and recognized for their contribution. Recognition to the voluntary blood donors and community health education on blood donation and transfusion will be the best approach to retain the blood donors. The recognition to donors through different means such as cards, certificate and prizes will motivate and retains the planned blood donation. Also, community health knowledge will empower the communities to change from religious beliefs and cultural altitude that hinder the blood donation practices.

4.6 Major Proposed Solutions for Retention of Voluntary Blood Donors

4.6.1 Role of Religious Leaders and Jay Community in Influencing the Retention of Voluntary blood donors

During interview with religious leaders, they were asked what reasons or circumstances would lead them into convincing their followers to donate blood voluntarily. Majority explained that they could persuade their followers to donate blood only when a fatal accident happens and there was a great demand of blood. Others said they would be driven by charity events that their institutions would hold while others said that they could can only take such actions only when asked by the government. However, some of interviewees admitted that it is their normal practice to convince their followers to donate blood to help those in need regardless of the

reasons or circumstances. A few religious leaders claimed that it was a sin and abomination to donate blood; and that being the view of them of their faith, they would not ask anyone to donate blood. It would be going against the commandments of God. Those who claim that donating blood is a sin explained that:

“Blood is life and only God has power and authority to give and take away life”.

Moreover, the study found out that 90% of religious leaders and Jay community members believe that it is their obligation to persuade their followers and others to donate blood voluntarily. WHO, (2010) asserts that positive values, such as a religious or moral sense of duty to fellow citizens, can be powerful motivating factors for blood donation when harnessed in communication with audiences who share these values? This then calls for NBTS to strategically make good use of religious leaders in not only sensitizing their followers to regularly donate blood voluntarily but also to become regular donors, donating blood twice or three a year. These religious denominations also prohibit their members getting blood from donors by blood infusion even when they are sick and need blood. The study, therefore, concluded that this religious sect has to be educated and given knowledge on health issues in order to understand the importance of saving lives through blood transfusions.

4.6.2 Public Awareness on Hospital Records Concerning Blood Needs

Participants of this study overwhelmingly suggested that hospitals should be open about the amount of blood needed in the hospitals, the magnitude of blood shortage as well as the outcomes of blood shortage in hospitals and blood banks including the

number of people who lose their lives due to shortage of blood. About 71% of the respondents argued that it is very important to mention the number of lives lost due to shortage of blood. In conclusion, it might be surmised that it is necessary to recruit and attach professional public relations officers in all NBTS. The professional public relations officers will fill the gap that is glaring present between the public and the NBTS.

4.6.3 Educational Campaigns on Use and Importance of Voluntary Blood Donation

From the study it was also found out that majority of participants have little knowledge on why and when should they donate blood voluntarily. Majority of the respondents 81% understands that they donated blood only to save people who are injured when accidents happen. Very few understand that the blood they donated is also used to save the lives of women during birth while the rest have no idea why they should donate blood (table 4.10). Poor or lack of knowledge on importance of blood donation and its use limits people from donating blood even becoming regular blood donors, further they could go is only when there is an accident or when they have a friend or relative who needs blood donation for birth matters. This then calls for more educational campaigns on the importance of blood donation and its use.

Table 4.11: Importance of blood donation

Reasons of blood donation	n	%
To save the women when giving birth	8	7.0
To save the injured when accidents happen	92	81.0
I don't know	14	12.0
Total	114	100.0

Source; Field data, (2020)

4.6.4 Organizing More Voluntary Blood Donation Campaigns

Although NBTS has been organizing blood donation campaigns, still a good number of people in the community are not aware of such campaigns. Findings indicate that less than 20% of all respondents have frequently been hearing about blood donation campaigns while the rest have either heard few times or never heard at all (Table 4.11). This is a wake-up call for Tanzania NBTS to increase efforts in organizing blood donation campaigns in the community and in institutions with big population like schools, colleges, mosques, churches, barracks, prisons and big organizations such as telecommunication companies.

Rwanda National Blood Transfusion Services(NBTS) report of 6th February 2018 shows that National center for Blood Transfusion was able to fulfill national hospitals demand for blood by more than (96%) in 2017 from 49% in 2014. This impressive record was achieved as a result of strong awareness/marketing programs, implementation of annual blood collection plan and partnership through memorandum of understanding with institutions with big population, organizing blood donation campaigns and developing a donor communication strategy.

Table 4.12: Frequency of blood donation campaigns in Mbeya City Council

What is frequency of Blood donation campaign?	n	%
Very frequently	8	7.0
Frequently	13	11.4
Rarely	79	66.7
Never	17	14.9
Total	114	100.0

Source; Field data, (2020)

4.6.5 General Proposed Solutions Towards Voluntary Blood Donation

Findings from majority of respondents suggest that NBTS should conduct more awareness campaigns especially in rural areas. As discussed earlier, the majority of participants of this study had little knowledge on the importance of blood donation and the use of blood which was the major hindrance to voluntary blood donation, let alone regular voluntary blood donation. It should also be considered that this study was based in Mbeya City Council where there is a Zonal NBTS Office. The following question then arises, if people from the city where NBTS offices are located had such little knowledge of NBTS and blood donation, what about people from rural areas? The results indicate that more education is still needed to communities and various stakeholders in Mbeya City. People should be sensitized to the point of consciously feeling that “it is a shame for a person to say “I have not donated blood in my whole life.”

Moreover, the respondents also suggested that NBTS should improve its motivation strategies in order to attract more voluntary blood donors. As indicated in Table 4.12 respondents argued for motivation in form of easy access to blood when a donor or his/her family member needs transfusion. The respondents further argued that in few occasions, donors failed to get access to blood when they needed transfusion demoralized them. To curb this NBTS and hospitals should keep good records of their regular blood donors so that they provide them with best service when needs arise. This will attract more donors and influence regular blood donation.

Participants of this study also called for improved donor communication strategy. This included post donation follow up on the well-being of donors after they had donated blood, keeping good records of donors so that hospitals do provide them with due service when need arises. In this regard interpersonal communication in very important tool that can be used to erase all negative attitudes towards blood donation and impart appropriate knowledge on blood donation. Abril, (2016) affirms that interpersonal communication holds considerable potential to motivate and facilitate voluntary blood donation.

Table 4.13: Proposed solutions towards voluntary blood donation

Proposed solutions toward voluntary blood donation	n	%
No suggestion	45	39.5
Awareness campaigns especially in rural areas	37	32.5
Motivation (easy access when they need blood)	20	17.5
Improve post donation services including follow up on voluntary and regular donors	5	4.4
Blood donation clubs/campaigns	5	4.4
Openness about their real shortage of blood	1	0.9
Remind them of the importance of blood donation (Religious leaders)	1	0.9
Total	114	100.0

Source: Field data, (2020)

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents in nutshell the findings of the study. The main purpose of this research was to investigate the challenges facing National Blood Transfusion Services (NBTS) in retaining voluntary blood donors in order to increase blood supplies in hospitals in Mbeya City. Specifically, the study sought to find out how many regular blood donors were providing blood for transfusion on hospitals in Mbeya City. Given the paucity of voluntary blood donors, the study was interested in identifying the challenges facing NBTS in recruiting and retaining regular blood donors in order to ensure the provision of adequate blood supplies in hospitals, which are usually included also free of charge. In the end it was imperative to suggest ways of recruiting and retention of voluntary blood donors. The study was limited to Mbeya City where a sample of 114 respondents was drawn from Mbeya City population. The sample was dominated by community members, but included also religious leaders, satellite and NBTS staff, Data were collected from primary and secondary sources, Rigorous thematic and quantitative data analyses were carried out to arrive at conclusions and recommendations. It was not possible to answer all questions that arose in the cause of investigations, therefore, at the end of this study areas for further studies are suggested.

5.2 Conclusions

From this study finding it can be concluded that the magnitude of blood donation in

Mbeya City Council is quite fair since majority of participants of this study ~~since~~ about 54 % who were picked randomly in the survey happened to be blood donors. However, as a caution, the number of blood donors shown does not necessarily represent the same good number of regular blood donors. The majority of blood donors in this study were first time donors and very few had donated more than twice. Generally speaking, Mbeya City Council still has very few regular blood donors which makes an alarm on the availability of sufficient blood in the blood bank and hospitals in Mbeya City. In terms of volumes of blood donations in Mbeya City, records indicate that the amount of blood donated has increased tremendously in the past few years, but the graph shows that it is near its plateau, which is bad news to the people of Mbeya, whose population is still growing. A stimulus is, therefore, needed to boost voluntary blood donations in the city.

Motivation to donate blood to save lives is high in Mbeya City. Despite some selfish individualist tendencies among people in society, the majority, 48% of participants of this study belonged to the voluntary group of blood donors. This group, also known as voluntary non-remunerated blood donors provides a significant amount blood available in blood banks in Mbeya City. The result is a harbinger of high prospects for finding and recruiting many multiple blood donors. This is the group that has to be retained to become regular voluntary non-remunerated donors, thereby guaranteeing availability of sufficient and safe blood. Motivation includes a package of pre and post donation services, follow ups and rewards in form of material mementos and blood provision for relatives of voluntary donors. Poor motivation limits voluntary blood donation and pushes people to donate blood only to save their

family members when they need blood transfusion. This is not good enough because it does not offer ample time for screening and classification of blood donations thereby ensuring provision of timely safe blood transfusions to the sick people in need. Voluntary multiple blood donations allow medical personnel to know the types and quality of blood readily available in the community for rapid responses to save lives in times of emergence.

Education on various aspects of blood, blood formation, blood volumes present in human beings, types of blood, blood donation, blood screening and analyses and blood transfusions will cushion community members from erroneous and misleading views from certain sections of the, Seminars of this kind are very essential throughout Mbeya City in order to promote enhanced blood donations to blood banks. Poor knowledge on the importance of blood donation and other attendant aspects also pose a challenge in retaining voluntary regular blood donors. Poor blood donation knowledge coupled with negative religious and cultural beliefs against blood donation add fuel to resistance on recruiting and retaining voluntary and regular blood donors.

Involvement of religious leaders and education and donor motivation programs can reduce the challenges of negative beliefs towards blood donation. Moreover, information on the actual needs of blood, use and importance of blood as well number of lives lost due to shortage of blood in blood banks and hospitals is necessary to attract and retain voluntary and regular blood donors. Blood donation

campaigns in communities and institutions with big populations can also be a solution to the challenges of retaining voluntary and regular blood donors.

5.3 Major Recommendation

From this study the following recommendation can be drawn; stakeholders and NBTS should make good use of social media to attract more regular donors. Social media play a great role in influencing behavior since it has power to segment the audience and provide specific message to specific groups of audience. Social media on the other hand makes a room for interchange of information which facilitates learning, change of attitude and influence behavior. This tool can be used to mobilize blood donors and increase knowledge on the importance of blood donation and eventually erase all doubts about blood donation

NBTS should join hands with religious, cultural and institutional leaders in creating awareness and recruiting more blood donors. Apart from creating awareness, leaders can help with organizing charity events focusing on blood donation and persuade their followers to donate. However, education on the importance of blood donation and negative beliefs about blood donation should start with leaders. NBTS should review its donor motivation strategy reflecting on feedback from this and other studies on donor motivation. NBTS should also consider conducting more researches on donor

satisfaction while considering cultural diversity.

Communities have better answers to the current status of blood donation and how should be efforts be improved. It is upon NBTS to consider involving the community in the whole process of planning blood donation programs.

5.4 Areas for further study

The community based qualitative study exploring reasons of people's willingness to donate blood and the contribution of health workers on voluntary blood donation programs. The qualitative study concerning converting the family blood donation replacement into voluntary blood donation.

The qualitative study on the contribution of religious and community leaders on retention of regular blood donors.

The qualitative study on the effectiveness of blood donor cards in retention of voluntary blood donors.

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[doi=10.1.1.454.7467&rep=rep1&type=pdf](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.454.7467&rep=rep1&type=pdf) on 24th November, 2020.

APPENDICES

APPENDIX I: Questionnaire for Community Members in Mbeya City Council

Introduction

My name is Latifa Nyakunga, a master's student at the Open University of Tanzania. I am conducting a study on **Challenges Facing NBTS in Retaining Voluntary Blood Donors in Mbeya City Council**. You have been chosen because you fall within this group and your valuable information will help me finalize my study. I understand the tight schedule you have, but you can assist. I am humbly, requesting you to fill in this questionnaire, all responses will be treated with the upper most confidentiality they deserve. Put a Tick (v) where appropriate.

A. Respondent's Social Economic Characteristics

1. Age group (years):

- (a) 18-24 () (b) 25 -35 () (c) 36-45 () (d) 46 - 55 () (e) Above 55 ()

2. Gender:

- (a) Male () (b) Female ()

3. Education:

- (a) Graduate () (b) Tertiary () (c) Secondary School () (d) Informal education ()

4. Number of family members

5. Monthly Income

- (a) Less than 500,000 () (b) 500,000-1,000,000 () (c) 1,000,000+ ()

6. Blood group _____

B. Challenges facing NBTS in Retaining Voluntary Blood Donors. *(Round the answer which is more appealing to you)*

1. What can be the most significant reason for you to donate blood?

- a) Saving life of a family member
b) Paid to save life

- c) Saving the lives of those in need regardless of your relationship with them
 - d) Advised by the doctor for your own wellbeing
2. He or she rather wait for an accident and campaigns before donating blood
- a) Like me,
 - b) Not like me
3. Hospitals/government/blood collection units do always remind people on importance of voluntary blood donations
- a) To a great extent
 - b) Somewhat
 - c) Very little
 - d) Not at all
4. Government/hospitals/blood donation units well appreciate voluntary blood donors
- a) To a great extent
 - b) Somewhat
 - c) Very little
 - d) Not at all

C. Challenges Facing NBTS in Retaining Regular Blood Donors

1. Have you ever donated blood?
- a) Yes,
 - b) No
- If your answer on the above is YES please proceed with the following questions
2. What was your experience with the first donation?
- a) Excellent
 - b) Good,
 - c) Fair,
 - d) Poor
3. Please explain your answer on the question above
-

4. Were you motivated to become a regular donors?
 - a) Yes
 - b) No
5. What was the reason for your second donation?
 - a) Saving life of a family member
 - b) Paid to save life
 - c) Saving the lives of those in need regardless of your relationship with them
 - d) Advised by the doctor for your own wellbeing
6. How frequent do you donate blood?
 - a) Very frequently
 - b) Frequently
 - c) Occasionally
 - d) Rarely
 - e) Very rarely
 - f) Never
7. Would your advice anyone to become a regular blood donor?
 - a) Definitely
 - b) Very Probably
 - c) Possibly
 - d) Probably not
 - e) Definitely not
8. What is the reason for your answer on the question above?

9. Women should be encourage to donate blood voluntarily
 - a) To a great extent
 - b) Somewhat
 - c) Very little
 - d) Not at all
10. What is the reason for your answer in the question above?

D. Major Proposal Solutions for Retaining Voluntary Blood Donors

1. Hospitals should always remind people the need for voluntary blood donations
 - a) Very Important
 - b) Moderately Important
 - c) Not Important
2. Hospitals should always tell the amount of blood needed
 - a) Very Important
 - b) Moderately Important
 - c) Not Important
3. Hospitals should always tell the number of people who lose their lives because of shortage of blood
 - a) Very Important
 - b) Moderately Important
 - c) Not Important
4. What do you suggest should be done to retain voluntary blood donors? _____

APPENDIX II: Interview Guide for NBTS and Satellites Staff

A. Respondent's Demographic Information

Employer_____

Location_____

Position_____

Education Level_____

Work Experience (years)_____

B. Number of Voluntary Blood Donors

1. What is blood donation rate in Mbeya City of
 - a) high
 - b) moderate,
 - c) low,
2. How many unit do you called per 1000 population_____
3. How many voluntary blood donors do you get per month/year in Mbeya City

4. What is the gender proportional of regular blood donors in the past two
years_____
5. Which age group donates blood regularly mostly?
 - a) 18-35
 - b) 36-55
 - c) Above 55
6. What the average of blood a single person donate in a
month_____
7. What is the proportion of blood need and blood donation in Mbeya City in
your specific area of operation? _____

C. Challenges facing NBTS in Retaining Voluntary Blood Donors.

1. Voluntary donors can stand alone as major source of blood in Mbeya City
 - a) True
 - b) False

2. What is your opinion on the following possible challenges that face voluntary blood donation in Mbeya City

- a. Weak donor mobilization strategy
- b. Challenge in donor recruitment system
- c. Others

(mention) _____

D. Challenges Facing NBTs in Retaining Regular Blood Donors

Regular blood donors can stand alone as major source of blood Mbeya City

- a) True
- b) False

What are the common challenges that face NBTs in retaining regular blood donors?

E. Major Proposal Solutions for Retaining Voluntary Blood Donors

1. Which type of blood donations is most common in Mbeya

- a) Family replacement
- b) Voluntary donation
- c) Paid regular donation

2. What is your opinion on the relevance of following possible solutions for retaining voluntary blood donors in Mbeya City? (Choose the most appropriate answer among the following; Very important, Important, Moderately Important, Slightly

Important, Not Important)

- a) Awareness programs
- b) Implementation of annual blood collection plan
- c) Partnership with institutions with big populations
- d) Blood donation companies

- e) Donor communication strategy
- f) Other (mention) _____

3. To what extent have the satellites managed meet blood needs in Mbeya city?

- a) To a great extent
- b) Somewhat,
- c) Very little
- d) Not at all

APPENDIX III: Time Frame

Research Work	2nd July to 15th July 2019	16th July - 30th July 2019	1st August -10th August 2019
Obtaining consent from Mbeya urban administration			
Data collection			
Return from the research area			
Data entry and data analysis			
Report writing			
Finishing and report submission			

APPENDIX IV: Budget Justification

S/N	ACTIVITY	TOTAL AMOUNT
1.	Survey areas and meeting with leaders of selected area	200,000/=
2.	Transport to the area of research during data collection	200,000/=
3.	Researcher allowance	150,000/=
4.	Stationaries	300,000/=
5.	Transport to HQ	600,000/=
6.	TOTAL	1,450,000/=

APPENDIX V: Research Clearance Letter**THE OPEN UNIVERSITY OF TANZANIA*****DIRECTORATE OF POSTGRADUATE STUDIES***

P.O. Box 23409
Dar es Salaam, Tanzania
<http://www.openuniversity.ac.tz>



Tel: 255-22-2668992/2668445
ext.2101
Fax: 255-22-2668759
E-mail: dpgs@out.ac.tz

Our Ref: PG201700595

5th November 2020

Zonal Manager,

National Blood Transfusion Service (NBTS),

P.O.Box 6576,

MBEYA.

RE: RESEARCH CLEARANCE

The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1st January 2007. In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief background, the purpose of this letter is to introduce to you **Ms. Nyakunga, Latifa Reg No: PG201700595** pursuing **Master of Social Works (MSW)**. We here by grant this clearance to conduct a research titled **"Challenges Facing NBTS in Retaining Voluntary Blood Donors"**. She will collect her data at your Office from 6th November 2020 to 30th November 2020.

In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820. We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours,

THE OPEN UNIVERSITY OF TANZANIA

Prof. Magreth Bushesha

DIRECTOR OF POSTGRADUATE STUDIES.