KNOWLEDGE, ATTITUDES AND PRACTICES ABOUT BLOOD DONATION AMONGST BLACK EMPLOYEES OF THE UNIVERSITY OF LIMPOPO, TURFLOOP CAMPUS, LIMPOPO PROVINCE, SOUTH AFRICA.

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by

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SUPERVISOR: PROF NZ NYAZEMA

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2012

DECLARATION

I declare that the mini-dissertation; Knowledge, Attitudes and Practices about blood donation amongst black employees of the University of Limpopo Turfloop campus, Limpopo Province, South Africa, hereby submitted to the University of Limpopo, for the degree of Master of Public Health has not previously been submitted by me for a degree at this or any other university; that it is my own work in design and in execution, and that all material contained herein has been duly acknowledged.

_____ _____

Mamabolo, MH (Ms) **Date**

DEDICATION

This dissertation is dedicated to my family, especially to my mom and late dad, my late fiancé, my friends, my colleagues for their support and encouragement.

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Last but not least, I thank God Almighty for instilling the self-trust in me that I always had the courage to go on. I thank Him for guiding, protecting and strengthening me at all my times of need.

ABSTRACT

The objectives of the study: To determine the knowledge, attitudes and practices of black employees of The University of Limpopo (Turfloop campus) about blood donation. To determine the degree of willingness by blacks to donate as well as suggesting some solutions to improve the performance by the South African National Blood Services.

Design: A descriptive study utilizing a self-reported questionnaire was carried out.

Setting: The University of Limpopo Turfloop Campus in the Limpopo Province of South Africa.

Material and Methods**:** A total of 138 employees participated in the study. With the aid of Predictive Analytics Software (PASW), 136 male and 101 female participants were randomly selected from the 40 University departments. The mean ages by gender was 36.91, ±10, 06 years for males, and 41.93, ±9, 35 years for females. The mean ages by donor status was 40.24, ±10, 15 years for donors and 37.94, ±9, 9 years for non-donors.

Outcome measures: Subjects demographic variables were determined by the use of a pre-tested self-reported questionnaire, which covered personal characteristics such as gender, age, residence, number of household members, marital status, educational background, faculty or department of

employment, as well as the monthly income bracket. Knowledge, attitudes and practices regarding blood donation were also assessed using the pre-tested self-developed questionnaire. The following information was included: previous practices, current and lifetime practices of blood donation.

Results: There was a general lack of practice of blood donation despite the presence of average knowledge relating to matters of blood donation amongst the black employees of the University of Limpopo, (Turfloop campus). There was no difference between black females and males as far as blood donation was concerned. There was a reflection of similar practices of blood donation by both genders. Blood donation generally started at a very late age due to early lack of exposure, information and awareness.

Conclusion: Findings from this study showed that the prevalence of non-donors amongst the blacks is high. The attitudes and practices of non-donors towards donation were generally less favourable, but it can be argued that a high percentage of these findings may likely change with the right interventions.

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(i) DEFINITION OF CONCEPTS

- **AABB**

American Association of Blood Banks (Transfusion Journal, 2009).

- **Attitude**

A like or dislike, a positive or negative evaluation about some aspect of the world. In this study attitude referred to attitude towards blood donation practices. (Hilgard, *et al*., 1979).

- **Autologous**

In blood banking terminology, autologous refers to a blood donation marked for use by the donor, typically for a scheduled surgery. (Beers, *et al*., 2003).

- **Autologous donors**

Donors who are recipients of their own blood. (Beers, *et al*., 2003).

- **Blood Bank**

A place where supplies of blood or blood components for transfusion, gathered as a result of blood donation, stored and preserved for later use. (Fowler, 1992).

- **Blood donation**

The process in which a volunteer who is a healthy person has his blood voluntary drawn for transfusion to the needy, or for preparation into other blood products by a process called fractionation. (Beers, *et al.*, 2003).

- **Blood Transfusion**

Transfer of human blood or a derivative of human blood from one individual (a donor), directly into the vascular system of another individual (a recipient). (Fish, 1979).

- **Direct donors**

A blood or blood component donation from a family member or a friend. This can happen only if the recipient and donor's blood types and Rhesus factors are compatible. (Beers, *et al*., 2003).

- **Fractionation**

A separation process in which a certain quantity of a mixture (solid, liquid, solute or suspension) is divided up in number of smaller quantities (fractions) in which the composition changes according to a gradient. Fractions are collected based on differences in a specific property of individual components. (Blood donation in South Africa, 2008).

- **Haematological diseases**

Illnesses affecting the physiological composition of blood and all other blood components such as red blood cells and platelets, resulting in conditions such as anaemia and even polycythemia. (Politis, 2000).

- **Knowledge**

The act of acquiring information about a particular fact or situation. The knowledge in this study referred to knowledge about blood donation matters. (Horny, 2000).

- **PEPFAR**

President's Emergency Plan for AIDS Relief

- **Plamapheresis**

From the Greek plasma, something moulded and apharesis, taking away. It is the removal, treatment, and return of components of blood, or blood plasma from the blood circulation. It is thus an extracorporeal therapy. (Beers, *et al.,* 2003).

- **Pro-social behaviour**

Acts beneficial to others, often cited by donors as reasons for their willingness to donate, and they include altruism, empathy, or social responsibility. (Ray, et al., 2001).

- **Regular donor**

A person (or a donor) that donates blood every 56 days, or six times in every year. Four donations in every year are also accepted by the South African National Blood Services as regular donations, since it is not always possible for one to donate every 56 days. (Standards for the Practice of Blood Transfusion in South Africa, 1990.).

- **SANBS**

South African National Blood Services. (www.sanbs.org.za)

- **Volunteerism**

Voluntarily undertaking a task or a service. This has to do with the question of free will, which is whether, and in what sense, rational agents exercise control over their actions and decisions. The principle of free will has religious, ethical, and scientific implications. (Alessandrini, 2004).

CHAPTER 1

1.1. BACKGROUND

Human blood remains the only source of replacement therapy that can be transfused to other human beings in cases of its loss and as well as for other components. In spite of the extensive promising research, a true substitute for blood and its components such as red blood cells, blood clotting factors (platelets), fresh frozen plasma or white blood cells will not be available for many years to come. (Al-Drees, 2008). These can only be available through donation. The availability of blood for transfusion depends therefore totally on a volunteer donor base in any country. (Gillespie & Hillyer, 2002).

Blood donation is considered an act that money cannot buy. It is an important link in the chain of life preservation and as such its value and place in society should be acknowledged. (Mehendale, 2008). Differences in blood transfusion practices do exist, and they vary from one institution to another depending on the availability of blood and blood components, number of patients and the laboratory support services. It also depends on the indication for transfusion; as either whole blood or a component may be transfused. (Al-Drees, 2008; Titmus, 1970).

The South African National Blood Service (SANBS) expects one million blood donations every year in South Africa in order to save lives. The South African National Blood Service does run into shortages of blood, especially during holidays. Over long weekends, for example, regular donors are unavailable to donate blood. On the other hand, according to SANBS, eight out of every ten people will need donated blood at some time in their lives. (Blood Donation in South Africa, 2008)

Many people do not give the Blood Transfusion Service a second thought, until they are the ones who are in need of blood and other blood products (Ray, *et al*., 2005). At the same time new deferrals and the aging population potentially impact the current donor base. An adequate, safe national blood

supply that depends on people willingly donating blood should be maintained. Cost effective approaches leading to long term success in donor recruitment as well as strategies that focus on retaining returning donors and transforming new donors into repeaters, are very essential (Gillespie & Hillyer, 2002).

Blood shortages have important implications for public health. Those implications include cancellation of major life saving interventions by medical practitioners, which may result in the loss of life. A better understanding of factors associated with non-donation of blood and blood products will not only help understand the reasons thereof, but will also provide clues to cab the shortages. (Blood Donation in South Africa, 2008)

1.2. The research problem

Blood supply is one of the major concerns in any population. Blood services are therefore, expected to provide adequate blood which is safe. However, the level of blood supply fluctuates throughout the year and is mostly insufficient during holiday seasons due to high demands and reduced blood donations.

According to Tshabalala, (2008) more than a quarter of a million South Africans are regular donors. Only 34 000 of those 350 000 donors around the country are black, and the irony is that 80% of patients needing blood transfusion are black. In light of the above stated problems the present study was carried out.

1.3. Research questions

- How well informed are the black employees of University of Limpopo, Turfloop Campus about blood donation?
- What is the level of knowledge about blood donation among the black employees of University of Limpopo, Turfloop Campus?
- What is the attitude towards blood donation among the black employees of University of Limpopo, Turfloop Campus?

- What is the practice about blood donation as followed by black employees of University of Limpopo, Turfloop Campus?

1.4. Aim of the study

The aim of the present study was to identify factors that influence blood donation amongst black employees at University of Limpopo, Turfloop campus.

1.5. Objectives of the study

The objectives of the present study were:

- To determine the level of knowledge regarding blood donation
- To assess attitudes towards blood donation and identify the practices

1.6. Conclusion

This chapter dealt with the background, the research problem, the research questions as well as the aim and objectives. The next chapter will be about the literature review.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction:

In this chapter the goal is to review the literature in relation to the topic. Specific findings in relation to the literature and debates are identified in an attempt to widen the frontiers of knowledge regarding blood, blood products and blood donation matters.

Blood donation is widely portrayed as an altruistic behaviour, and has been the subject of extensive study and comment. More blood donors feel a responsibility to help others, regardless of personal connection to those receiving the assistance (Alessandrini, 2004). Gillespie and Hillyer (2002) looked at the factors impacting on blood donation decision, and they found that decision making and behaviour related to blood donation are complex concepts that need to be evaluated on many levels simultaneously. Healy (2000) identified the religious activity and conviction of donors as indicators of the altruistic behaviour mentioned.

Titmuss (1970) conducted a ground-breaking international comparative analysis, which has been built on since. In his influential book, The Gift Relationship, this sociologist noted that blood donation practices vary widely between countries, depending on wether blood donation is seen as a gift or commodity. The study related declines in blood donation in the United States to perceived declines in social capital. Some people derive benefit from volunteering by experiencing a sense of social connection. The study by Trimmel, *et al.,* (2005), established though that the voluntary system reaches only a minority of the populations.

The survey by Hupfer *et al.,* (2005) looked at social factors that influenced people to commence blood donation. They regarded the findings of their survey as an interesting piece of micro-research on a group with relatively high educational attainment. In their study making a comparison with the

motivations by donors in Canada and in European Union done in Australia, they examined the explanations provided by individuals for their donor status. The findings were personal and institutional, constituent with the research of others. They found the Canadian survey to be particularly interesting in the sense that the Canadian rate of blood donation in the population was comparable to the Australian case. Their findings confirmed trends seen elsewhere, as was the case with a study by Gillespie & Hillyer (2002), which revealed that some people were motivated by the assurance of guaranteed blood replacement for family members, as well as for covering their own potential needs in the future.

For young people, the determinants of the intention to become blood donors include self-efficacy, attitude, personal moral norm regarding blood donation, subjective norm and perceived social support (Lemmens, *et al*., 2005). Alessandrini (2004) also looked into data collected in the United States, Canada, the European Union, as well as Australia. He cites the research conducted in Australia as supported, whereas in others, the findings served to illustrate social and cultural differences between Australia and comparator countries. In Australia, the collection of blood is performed entirely by the Australian Red Cross Blood Services. (ARCBS). This is a separately incorporated body to the Australian Red Cross.

Regarding compensated or voluntary blood donation, it was revealed that most blood banks in developed countries rely on and prefer uncompensated voluntary whole-blood donations. It was acknowledged though that there would be limitations with both the uncompensated or voluntary and compensated system of blood donations (Trimmel, *et al.*, 2005). Uncompensated blood donors donated mainly because they were motivated by the wish to help others, while most platelets donors and plasma donors were motivated by the compensation.

Healy (2000) established that donation rates are highest in countries with state-run blood collection regimes in which men with a high socioeconomic status are prevalent donors. This differs with the Red Cross systems, as there

are fewer donors, and a high education and income have less impact on donation rates. His study revealed that in countries with independent blood bank regimes, there is a wide variation in donor rate. This according to him might be because, in Red Cross centres donation is tied to religious activity and to volunteering.

Regarding the percentages of donors as well as non-donors, the study further established that only about 5% of the US population donated blood when the study was undertaken**.** The number of people who 'had ever given blood' by then in Europe ranged between 44% in France, 14% in Luxembourg, and 7% of the European population. Compared to people who never donated blood, blood donors were usually described as male, married and employed, had completed high school, higher than average socioeconomic status, and having higher altruism (Gillipsie & Hillyer, 2002).

There are a number of issues contributing as deterrents to initial and repeat donation such as time required for donation process, length of history taking, inconvenient hours or location, other sources of delay, and fear of temporal or permanent deferral (Gillipsie & Hillyer, 2002). Ferguson and Bibby (2002) added that observing others fainting, especially for first-time donors can be a stressful experience and can produce a reduction in the number of future donation even for occasional donors.

Allogeneic blood donation has been investigated worldwide for decades, for which the results are known to have not been widely successful, despite the efforts made at recruitment of expanded, consistent donor pool. To meet the demand for blood there is an ongoing need to recruit new and retain current blood donors because only a small proportion of eligible donors donate, while only a smaller percentage return to give blood for a second time (Steele et al, 2008; Gillepsie & Hillyer, 2002). To meet blood demand, according to Politis (2000), effective blood donor recruitment and retention should be managed in a business-like way by a director of blood donor recruitment, who is a professional specialised in communication, marketing and management, with extensive knowledge of the needs and capabilities of blood transfusion

services. Danic, *et al*., (2000) emphasises the professionalism and the specialised communication skills required.

According to a study which was a collaborative effort between the American Association of Blood Banks (AABB) and the Guyanese blood community, lack of available blood is the primary concern facing the Guyana National Blood Transfusion Service, with a significant portion of physician requests for blood going unmet every year (Fusco, 2007). The study indicated that lack of available blood can be largely attributed to general mentality of family replacement donation rather than voluntary donation for altruistic purposes. To capture the knowledge, attitudes and practices regarding blood donation in Guyana, the study was conducted under the auspices of President's Emergency Plan for AIDS Relief (PEPFAR). As far as the Caribbean country is concerned, it was revealed that there was general willingness by many people to help others by donating their blood. The problem appeared to be a widespread uncertainty, and lack of knowledge regarding the extend of the need for blood donations (Fusco, 2007).

Al-Drees (2008) revealed that a lot of community members are non-donors, and for that reason, most of the blood donors are direct donors instead of volunteer donors, paid donors, or autologous donors. The World Health Organization introduced the 100% unpaid, voluntary blood donation policy in 1997. On World Blood Donor Day held in Geneva in 2006, WHO published its findings from its recent global survey on blood collection and blood testing practices. World Blood Donor Day was established at the 58th World Health Assembly in May 2005 by WHO's 192 Member States, to urge all countries in the world to thank blood donors, promote voluntary, unpaid blood donations and ensure safe supplies of blood for all. The findings of the survey showed that slow progress was made towards the goal of 100% unpaid, voluntary blood donation. It showed that out of 124 countries that provided data to WHO, 56 countries saw an increase in unpaid voluntary donation. The remaining 68 have either made no progress or have seen a decline in the number of unpaid voluntary donors. Of the 124 countries, 49 have reached

100% unpaid voluntary blood donation. Out of those 49, only 17 were developing countries. (WHO, 2006)

A report of the first meeting of the “Global Collaboration for Blood Safety” held in Geneva stipulates that in developed countries, voluntary, non-remunerated donors give most blood, while blood in less developed countries is donated primarily by paid or family donors. The report further states that only 16% of the blood supply (in less developed countries) is donated by voluntary, non-remunerated, low-risk donors. This is no longer the case with South Africa in particular as a developing country (Titmuss, 1971). Currently, payment for blood no longer takes place, as this would be in contravention of the regulation contained within the Human Tissues Act 65 of 1983 (Blood Donation in South Africa, 2008). In keeping with the general laws of the country at the time, all blood (regardless of source or donor motivation) was divided according to the racial category of the donor, with paid donors also being segregated when it came to the payment that they received. While whites earned R4 per unit of blood sold, non-whites received only R1 per unit (Titmuss, 1971). This used to be practiced by the South African Institute for Medical Research (SAIMR) done for the provision of mine workers. The practice was stopped a couple of decades ago. (Blood Donation in South Africa, 2008). South African Blood Transfusion Services (SABTS), now SANBS, claims that South Africa became the first country in which donors gave their blood purely for altruistic reasons, with no monetary gains. (Blood Donation in South Africa, 2008).

Regarding the knowledge about blood donation matters, most people (96.3%) reported that they knew about blood donation. They had received information mainly from friends and media. Though sixty-one percent knew where blood was donated, all were unanimous about the vital role of blood. Whatever their religion, they recognised its sacred nature. The majority (85%) were willing to donate blood. The survey established a growing interest in the blood donation among the population, though new strategies were to be elaborated to inform the population and motivate blood donors (Agbovi, *et al*., 2003).

A survey done about blood donation in South Africa indicated that more than a quarter of a million South Africans are regular donors, but only 10% of them are black. In a general racial sense, it is clear that whites donate blood out of all proportion to their representation in the national population. (Blood donation in South Africa, 2008; Tshabalala, 2008) This means that there is a largely inverse relationship between the representation of whites on the national population register and in the blood donor pool, for if they were to donate blood in strict accordance with their racial presence in the country, whites would only provide about 15% of all the blood collected by SANBS. (Blood donation in South Africa, 2008). Tshabalala, (2008) highlighted the irony, indicated in the 80% of those patients needing transfusions, as being black. deConing (2002) acknowledged though that the impact of apartheid and the political turmoil that characterised the late 80's and early 90's had obvious implications for blood collection.

Major work needs to be carried out by blood banks in South Africa in order to increase the number of black blood donors in this country. As the analysis of the racial classification of donors clearly demonstrate the constitution of a minority of the donor pool, even though, as the major racial group in South Africa, they are likely to have the greatest total blood demand in the country. (Blood donation in South Africa, 2008). These imbalances between blood contributions and requirements are neither desirable nor sustainable and as such they need to be corrected. Should this not be done, it might result in severe supply problems when current donor sources are no longer available in as great numbers as they were in the past.

CHAPTER 3

METHODOLOGY

3.1 Study design

The present study used both the quantitative and qualitative approaches. As some characteristics had to be described, a descriptive study utilizing a pre-tested self-reported questionnaire was carried out. Since information that could not be expressed in numbers was required too in this study, qualitative methods were utilized.

3.2 Study site

The study was conducted at the University of Limpopo (Turfloop Campus). The University is located in the Mankweng municipality, a semi urban area in the Capricorn district of Limpopo Province, ± 35 km from Polokwane, the capital city of the Province.

3.3 Study population and sampling

A random sample of employees aged 18 years and above, was selected from the Human Resource Department database of University of Limpopo (Turfloop Campus) using the table developed by Morgan & Krejcie (1994). The sampling included both males and females, all with grade12 as their minimum qualification. Members of staff from all four faculties namely Humanities, Health Sciences, Management Sciences and Law, Science and Agriculture, plus the Administration and Support services were included in the study.

The University of Limpopo (Turfloop campus) had according to the Human Resources Department records, as on the 23rd January 2009, 402 black female and 304 black male employees. This in total is 706 black employees. From amongst 496 employees, who had a minimum of grade 12 as their qualification, all were regarded as the study population from which 217 were enrolled.

3.4 Ethical and legal considerations

Ethical clearance was obtained from the Polokwane-Mankweng Hospital Complex Ethics Committee and the Senior Degrees Committee. After obtaining clearance a letter was send out inviting participants to take part in the study. The letter informed participants about the aims, purpose and procedure to be followed in the present study. The participants were also informed of their right to abstain from participation or even to withdraw their consent to participate at any time without reprisal. (Appendix I & II)

3.5 Data gathering tools

- **The questionnaire**

A pre-tested questionnaire (Appendix III) prepared for the participants was made up of questions that covered the following aspects: demographic characteristics, the knowledge, attitude and practices about matters pertaining to blood donation as well as the prevalence and frequency of blood donation practices. Such questions included the respondents' donor or non-donor status, nature of their donations, number of their donations; date of their last donation in case of donors, as well as reasons for non-donation in case of non-donors. Participants were also asked about their views on promotion of blood donation matters, as well as whether they felt enough was being done to encourage black people to donate blood. Such were open questions and they were coded before they could be analysed. Not all participants were free to give written consent which was requested in the form of a signature. Their completed questionnaires therefore confirmed their consent.

- **Focus group discussion**

One focus group discussion was conducted. An invitation was send through an e-mail to the university of Limpopo community in general with the intention of getting equal female and male participants of the blood donating age. Some of the questions from the structured questionnaire were used as a guide to the discussion. The emphasis during the discussion was laid on 'why

blacks do not donate blood'. Two SANBS staff members took part in the focus group discussion which lasted for about two hours.

3.6 Data collection

With the aid of Predictive Analytics Software (PASW), 136 male and 101 female participants were randomly selected from the 40 of the 79 University departments. From the four main University faculties, and in addition, the Administration and support services, as well as the office of the Vice Chancellor, departments were first arranged alphabetically before they could be randomly sampled with the aid of PASW. From the sample that was recruited, only 36.8% males and 87.1% females accepted the invitation and participated.

Participants were assured of the strictest confidentiality. Participation was voluntary with no cohesion enforced to participants. No slot was provided on the questionnaire for the participants' names, which further assured them of their anonymity. The questionnaires were presented in English since the study was conducted at a university that uses English as its medium of instruction. The questionnaires were distributed and collected during the period of September 2009 to December 2009. More time had to be allocated to the respondents since a number of them were most of the time out of their offices.

To further safeguard confidentiality of participants' information, all completed questionnaires were returned in sealed envelopes through departmental personnel that could be trusted. A register was developed and distributed to each department. The register captured all the information regarding the participants and it made a follow up process of participants easier

3.7 Data analysis

The following statistical data was used to analyse the data:

- Pearson Chi-square test to find out if there was an association between Gender and Donating in which continuity correction, likelihood ratio, Fisher's exact test and linear-by-linear association were examined.

- Spearman’s correlations coefficient to determine the correlation between knowledge and attitude, in which both scores were tested using non-parametric correlations.
- Association between Education and Donating was also tested with the aid of the Chi-square test.
- All statistical analysis was performed using the Predictive Analytics Software (PASW) computer package programme.

CHAPTER 4

RESULTS

In this chapter the results of the study are presented as follows:

Section A: Demographic data of participants

- Gender
- Age
- Residential area
- Marital status
- Level of education
- Employment status and
- Faculty of employment

Section B: Knowledge, attitudes and practices of blood donation including the following aspects:

- Starting age of donating blood;
- First time blood donors;
- Blood donation practice according to gender;
- Blood donation practices according to academic qualification;

SECTION A

This section shows the results on the demographic data of the participants.

4.1 Age and gender

Table 4.1 shows the distribution of participants by age and gender. The majority of participants were in the age range 18 to 34 years (35.9%), males and females together, with female participants being the highest with 42.7%. The highest percentage of male participants was in the age range 45 to 62 years (41.3%). As it was indicated that 50 males and 88 females agreed to participate, it came out from the present results that ten participants (4 males and 6 females) did not respond to the question requesting their age.

Table 4.1 Participants per age and gender (n= 128)

Age group	Gender				Total n=128	
	Male n=46		Female n=82			
	N	%	N	%	N	%
18-34	11	23.9	35	42.7	46	35.9
35-44	16	34.8	27	32.9	43	33.6
45-62	19	41.3	20	24.4	39	30.5

4.2 Residential area

Figure 4.1 shows the distribution of participants according to their area of residence. The majority (47.5%) of the respondents lived in urban areas, 28.5% in peri-urban areas, while 24.1% lived in rural areas.

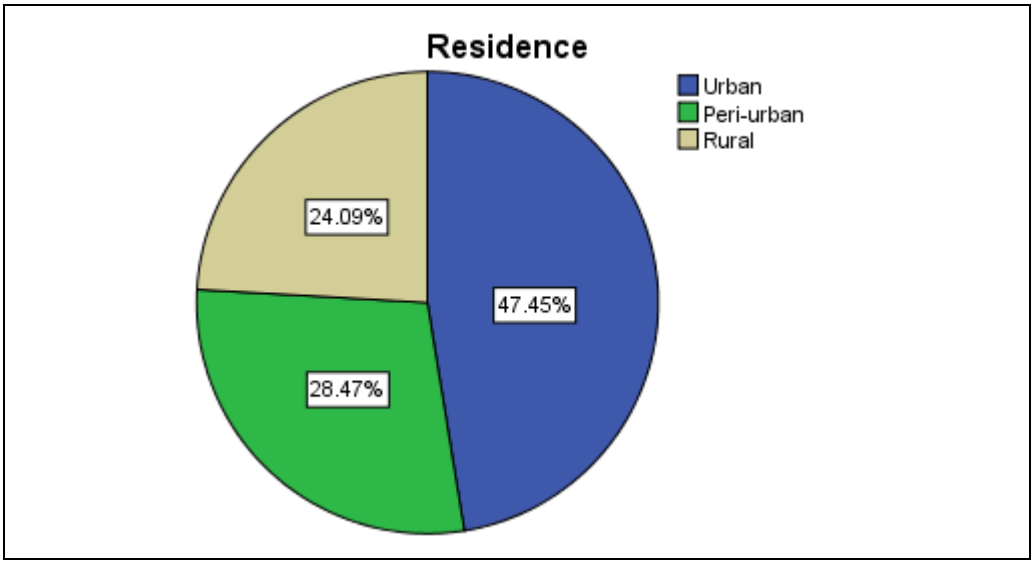

Figure 4.1 Participants according to their area of residence

4.3 Marital status

Table 4.2 shows the distribution of participants according to their marital status. The highest percentage of participants were married males (64.0%) followed by single female participants (54.5%).

Table 4.2 Participants per marital status n= 138

Marital status	Gender				Total n=138	
	Male n=50		Female n=88			
	N	%	N	%	N	%
Married	32	64.0	30	34.1	62	44.9
Single	13	26.0	48	54.5	61	44.2
Widowed	1	2.0	2	2.3	3	2.2
Divorced	3	6.0	6	6.8	9	6.5

4.4 Educational qualifications

Table 4.3 shows the distribution of participants according to their educational qualifications. Post-graduates were the highest participants (40.6%) with male post-graduate participants higher than female post-graduate participants, 40.9% and 40.0% respectively

Table 4.3 Participants according to educational qualifications n= 138

Education	Gender				Total n=138	
	Male n=50		Female n=88			
	N	%	N	%	N	%
Matric	5	10.0	2	2.3	7	5.1
Certificate	2	4.0	6	6.8	8	5.8
Diploma	8	16.0	18	20.5	26	18.8
Degree	15	30.0	26	29.5	41	29.7
Post-grad	20	40.0	36	40.9	56	40.6

4.5 Ethnicity

Figure 4.2 shows the frequency of ethnicity for participants by gender. Majority of the participants were Northern Sotho speaking (65.2%) followed by Tsonga speaking (9.4%). The lowest percentage of participants (1.4%) were Venda- speaking. Of the 65.2% Northern-Sotho speaking participants, 62.2% were females compared to 37.8% male participants.

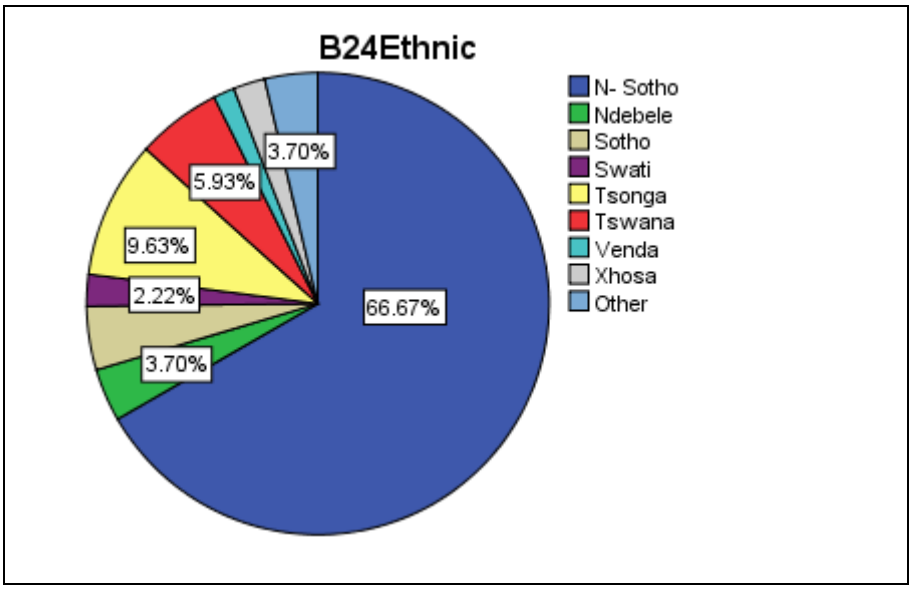

Figure 4.2 Participants according to ethnic groups

4.6 Participants per academic or non academic status and gender n=138

Table 4.4 shows the distribution of participants according to their academic or no-academic as well as their gender status. Fifty one point one percent of participants were academics, while 49.9% were employed as non-academics.

Table 4.4 Employment status

Employment status	Gender				Total n=138	
	Male n=50		Female n=88			
	N	%	N	%	N	%
Academic	25	50.0	45	51.7	70	51.1
Non-academic	25	50.0	43	48.3	67	48.9

4.7 Faculty of employment

Figure 4.3 shows the participants according to faculties they are employed in. The majority of participants (34.8%), were from the Administration and support Services department. They were followed by faculty of Health Sciences and faculty of Science and Agriculture with 26.8% and 22.5% respectively. The lowest numbers of participants were from faculties of

Humanities and Management Science & Law with 7, 3% and 8, 7% respectively. Female participants were higher in the Health Science faculty, followed by Admin and Support services.

The highest participating gender was males from the Admin and Support services (42%) followed by Science and Agriculture (30%). More females (88), participated as compared to males (50).

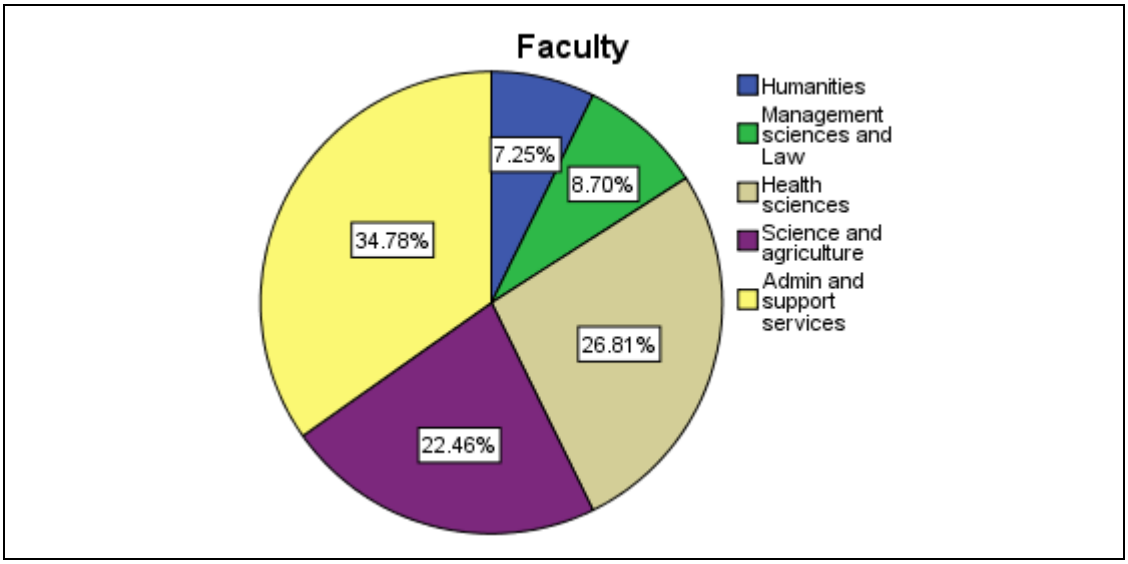

Figure 4.3 Participants per gender and faculty

Section B

Knowledge, Attitude and practices about blood donation

4.8 Definition status of blood donation by participants

Figure 4.4 shows the distribution of the status of knowledge of the definition of blood donation by participants. Fifty point seven percent of participants had the correct knowledge of the definition of blood donation while 49.3% lacked the correct knowledge.

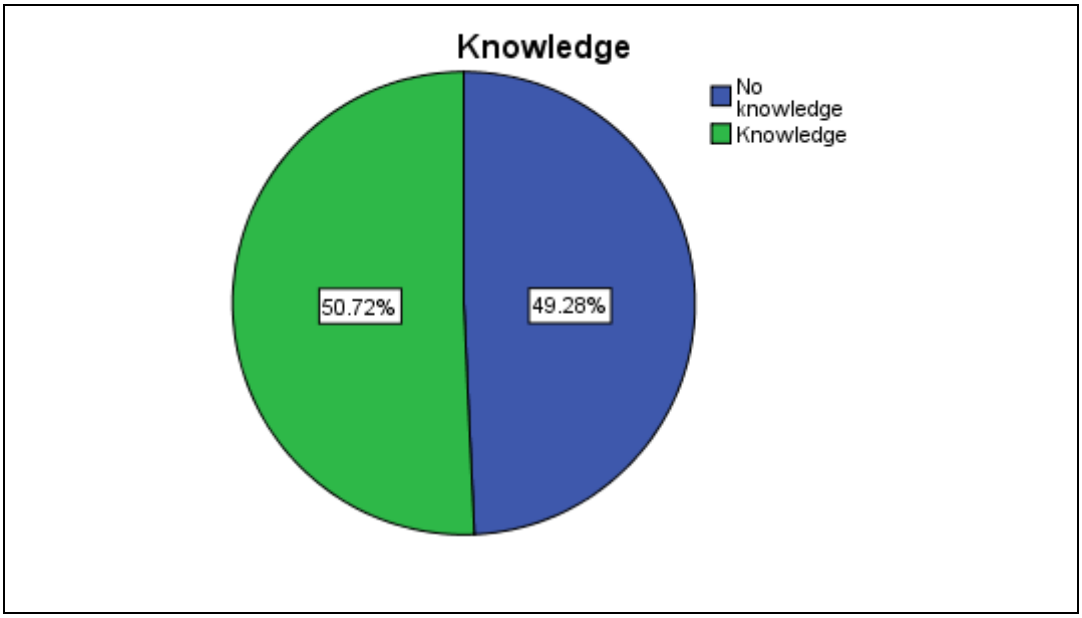

Figure 4.4 Definition status of blood donation

4.9 Knowledge status of blood donation intervals

Table 4.5 shows the distribution of intervals at which participants felt blood could or should be donated. A larger percentage, 26.9% thought blood should be donated whenever one felt like, followed by 22.4% of those who had no idea. 17.2% thought blood should be donated whenever there is a shortage, while 3.7% thought it should be donated every month. Only 17.2% knew the correct interval as stipulated by the standards for practice of Blood Transfusion, i.e. once every two months. (Standards for the Practice of Blood Transfusion in South Africa, 1990).

TABLE 4.5 Knowledge status about blood donation intervals

	Frequency n = 138	%
Monthly	5	3.7
Once every 2 months	24	17.2
Yearly	18	12.7
Whenever one feels like	36	26.9
No idea	31	22.4
Whenever there is a shortage	24	17.2

4.10 Blood donation practices

Figure 4.5 shows the distribution of the practice of blood donation by participants. Sixty point nine percent of participants were found to be non-donors while only 39.1% were found to be blood donors.

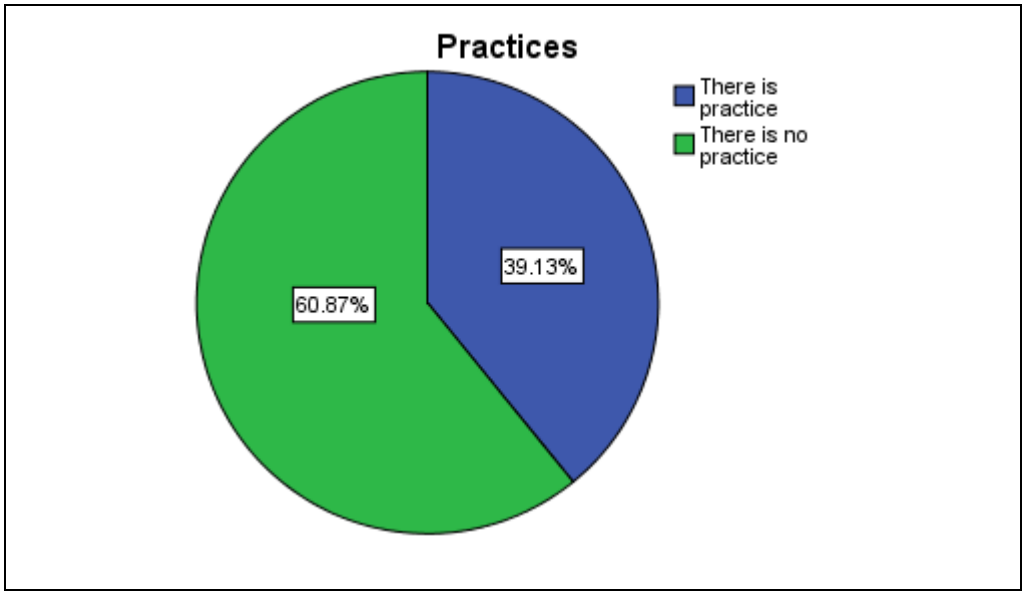

Figure 4.5 Blood donation practices

4.11 Blood donation practices per gender

Table 4.6 illustrates the differences in blood donation practices between males and females. Fourty seven point seven percent of the females donated blood as compared to 34.7% of males. The results show that there was no

significant difference in blood donation practices between males and females. On average the highest percentage (56.9%) was of non-donors. Sixty five point three percent of non-donors were males while 52.3% were females.

Table 4.6 Comparison of blood donation practices between males and females (n=59)

Donor status	Gender				Total n=138	
	Male n=50		Female n=88			
	N	%	N	%	N	%
Yes (ever donated)	17	34.7	42	47.7	59	43.1
No (never donated)	33	65.3	46	52.3	78	56.9

P-value = 0,10

4.12 First time donors

Table 4.7 show the distribution of first time donors according to their ages. Twenty one percent of donor respondents started donating blood as early as less than 29years of age, 8.0% started donating blood at the ages between 30 and 39years, and 2.9% at the ages between 40 and 49 years, while 3.6% of donor respondents started donating at the ages of 50 years and above.

Table 4.7 Distribution of first time donors according to age (n = 49)

Age range	< 29years	30-39 years	40-49 years	50+ years
Frequency n=49	29	11	4	5
%	21.0	8.0	2.9	3.6

4.13 Mean age by gender and donor status.

Table 4.8 shows a summary of mean age by gender and donor status. The mean ages by gender was 36.91 years, (SD = 10.06) for males, and

41.93years, (SD = 9.346) for females. The mean ages by donor was 40.24 years, (SD = 10.145) for donations and 37.94 years, (SD = 9.906) for non-donations.

Table 4.8 Mean ages by gender and donor status

Gender	Female	Male	Total
n	46	82	128
Mean age ±SD (years)	41.93 ± 9.35	36.91 ± 10.06	38.72 ±10.07
Donor	28 (32.9%)	19 (38.8%)	47(35.1%)
Non-donor	57 (67.1%)	30 (61.2%)	87(64.9%)

P value = 0.05

4.14 Blood donation and academic qualification

Table 4.9 shows the distribution of the participants according to their educational qualification and donor status. Fifty two percent of participants who held diploma as their highest qualification had donated blood more than any other group. They were followed by the group having degrees as their highest qualification (43.6%) and 42.9% of those who had only grade 12 or a certificate as their highest qualification respectively. The highest percentage of participants who had never donated blood in their lifetime was from the group with post-graduate qualifications (61.5%). It shows that qualification does not influence blood donation**.**

Table 4.9 Blood donation according to academic qualifications (n=138)

Donate		**Qualification**				**Total**
		Gr.12/ Cert	**Diploma**	**Degree**	**Post-grad**	
Yes	**N**	9	13	17	20	59
	%	42.9	52.0	43.6	38.5	43.1
No	**N**	12	12	22	33	79
	%	57.1	48.0	56.4	61.5	56.9
Total	N	21	25	39	53	138

P value = 0, 308

4.15 Attitude

Figure 4.6 illustrates the attitude of both the non-donor and donor participants. A higher percentage of participants (60.1%) had shown a negative attitude as compared to a smaller percentage of 39.9% that had shown a positive attitude towards blood donation matters.

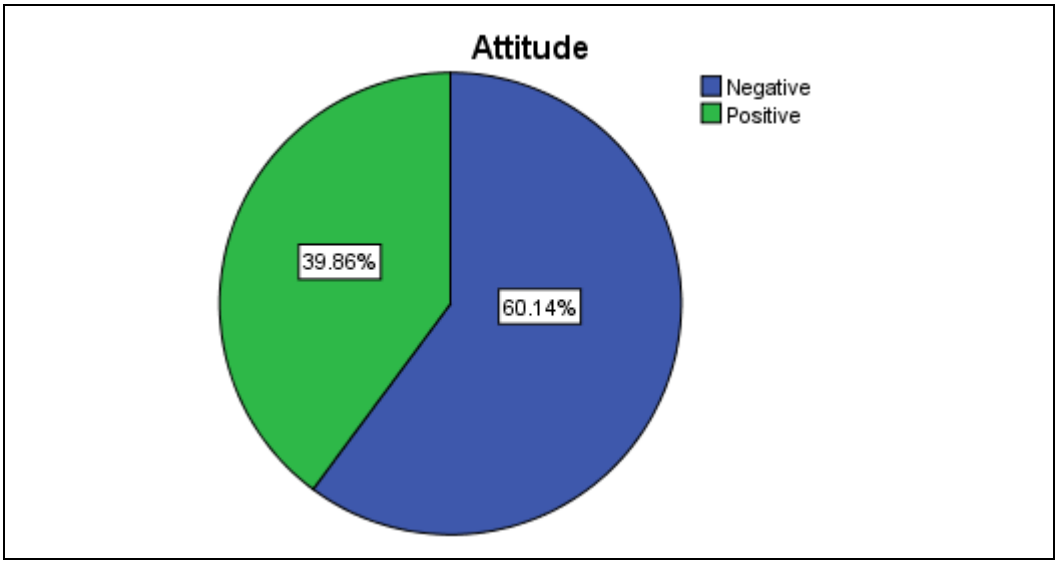

Figure 4.6 Attitude of participants towards blood donation

CHAPTER 5

DISCUSSIONS AND CONCLUSIONS

5.1 DISCUSSIONS

Understanding blood donor motivations is crucial to improving effectiveness of donor recruitment and retention programs. (Glynn, *et al*., 2002). The participants of the present study as expected were well educated, with the majority of them having university degrees. About 40.6% were having post degree qualifications. Matric, meaning at least 5 years post primary school education was the lowest qualification the participants of the present study had as their highest qualification.

Regarding information about the blood donation matters the respondents displayed a fair knowledge. As can be seen from the results the percentages of those who had general knowledge about blood donation matters did not differ much with those who did not have such knowledge. Of great significance, when asked about blood as a source of therapy, a larger percentage (73.2%) indicated that they really appreciated that blood was indeed a source of therapy. Unlike the respondents of the general public of Guyana who had partial knowledge of the physical characteristics of blood and its functions (Fusco, 2007), the majority of respondents (81%) in the present study understood what blood donation is all about. They also acknowledged that blood donation is very important in saving lives (85%). This was a positive and promising response.

A study carried out by Olaiya in 2004 obtained similar results to those of the present study in that though many of the respondents were educated (98.9%), the majority of whom had university degrees (36.1%) and have heard about blood donation before, 52.4% of them were not well informed about blood donation matters. However, Androulaki, *et al*., (2005) observed contradictory results in that one out of two respondents had little or insufficient information about blood donation matters.

It was assumed that the more educated the participants the more and better knowledgeable they would be about blood donation issues in general. The expectation was that since the University of Limpopo community was so well educated, they would then have more knowledge about blood donation matters, thus translating their knowledge into practice. This was not the case with the present study.

As results show, only 39.1% of participants had donated blood before, while 60.87% had never done so in their entire life. It was surprising to find out that even among post-graduates there were indeed few people who had given blood once in their lifetime, (only 20 of the 55), not to mention regular blood donors. The present study does not concur with that of Chliaotakis, *et al.,* (1994) as it had shown that recruits with higher level of knowledge in blood donation had a greater probability to become donors. A study by Allen and Butler (1993) had shown a different view though about education and blood donation. It revealed that donor knowledge may play a negative role. Their research findings suggested that donor knowledge increases the perceived risk of donating blood, and perceived risk decreases the frequency that donors intend to give. (Allen & Butler, 1994).

A study by Gilani, *et al*., (2007) that assessed knowledge, attitude and practices regarding voluntary blood donation amongst medical doctors and paramedics showed more blood donations from doctors than paramedics. They highlighted basic and advanced medical education of doctors as an obvious contributory factor to why doctors donated more.

In studies such as the present study, language and interpretation of scientific language play an important role if they are to be used for any meaningful purpose. The study showed that there was some confusion as to what blood donation really meant to some people. Blood collection for research purpose was confused with actual blood donation for transfusion purposes. This did not come as a surprise though, since the vernacular expression for the request of blood specimens from volunteers by researchers is sometimes misinterpreted by research subjects as donation. The type of bleeding

referred to here, is into 3-5 ml specimen bottles as compared to the 480 ml collected for transfusion purposes, the difference which, it would appear, was not quite appreciated.

Regular participants in research studies therefore believed they were regular blood donors because “they gave blood”. As far as they were concerned, they donated blood. This perceived meaning of “blood donation” could be taken as one of the factor that influenced the number of regular donors in some particular age groups. Regular donors return to donate blood at least every two months if they are well. The term regular donor was not even understood by those who indicated that they had donated blood before. It can then be argued that not knowing what is meant by being a regular donor might be one of the reasons why blood donation has been reported to be low amongst the black community. This is because most blacks would not return to donate again and again, thus not turning into regular blood donors because of not being informed.

Generally speaking, according to the standard practice to be considered a regular donor one is required to donate blood every 56 days, which is once every two months and therefore six time a year. (Standards for the practice of Blood Transfusion, 1990). Considering unforeseen health circumstances, a regular donor is expected to give blood not less than four times a year. (Blood donation in South Africa, 2008). This was not fully appreciated in particular by non-donors since only 58% of them indicated they would be willing to become regular donors in future. There were general misconceptions that one should donate blood once a year, whenever one feels like, or only when there is a shortage. These responses were given by participants when asked as to when a person should donate blood. The question was important in testing the knowledge of participants with regard to the time interval and frequency of blood donation. The answers gave a clear indication of how many, by when and how often are donors likely to return for the next donation in case they ever returned. It was indeed not encouraging to find that very few employees at a tertiary institution knew the importance of repeated and regular donation in relation to blood supply.

From these findings as stated above, it would be reasonable to assume that amongst most university employees education level did have a partial influence on understanding matters regarding blood donation, it unfortunately just did not translate the knowledge into the act of donating, which meant that there could be some other reasons contributing to the respondents not donating.

A considerable level of uncertainty amongst both donors and non-donors in the present study was established by responses that indicated that donating blood caused fainting and that one is likely not to be able to continue with their normal daily chores after donating blood. This gave an indication that people are likely not to participate in blood donation exercises due to those fears. Only if people understood that blood was donated to help those in need, the fears as mentioned would not be of great concern to those who are expected to donate. It did not appeal to them that their most needed donations meant “giving blood to the needy” or “helping others” which is an altruistic act that is required to motivate people to donate. From what was established one cannot say understanding or not understanding the meaning of the act of “blood donation” therefore means full or lack of comprehension of the term.

According to the international standards for the practice of blood donation, a healthy person of not less than 16 years of age, weighing 50kg and more, may donate blood once every two months. The legally defined age range for blood donation is in South Africa is 16 – 65 years **(**Standards for the practice of blood transfusion in South Africa, 1990**).** It was found out that of the employees at the University of Limpopo who had ever donated blood, they had done so in their late life not while at high school where it is expected to start. The fact that the majority of donor participants of the present study started donating at ages beyond those of high school level gives a clear indication that the blood donation matters are either not well addressed at high schools or not addressed at all.

In his book Blood banking and transfusion medicine, Hillyer (2007) cites 17 years of age as the legally defined age in most countries, with no age limit. In the United States the donor must be at least 17 years of age, with the upper age of 60. A 16 year old may donate but only with parental consent (Blood donor guidelines – America's Blood Centers, 2010). The fact that some participants in the present study mentioned that they started donating blood at the age of 14 an 15 years again confirmed the misunderstanding of the concept of blood donation since in South Africa the practice of blood donation starts at age sixteen, and no one below that age would ever be allowed to donate even with parental consent.

It was interesting to note that the University of Limpopo, Turfloop Campus being in the peri-urban area as it is, with its community having access to most forms of media that could help raise awareness regarding whatever matters, was found to be lacking the expected awareness and motivation towards blood donation. As indicated earlier, they had adequate knowledge but they seemed not to have enough motivation. As a knowledgeable community, the university community is expected to play an important leading role, use the knowledge they have in informing and raising awareness of the rest of the nearby uninformed communities about important matters, in this regard blood donation matters.

When it comes to gender it was interesting to note that gender did not appear to influence blood donation. This was because there appeared to be no apparent differences between women and men as far as the practice of blood donation was concerned. This to some extent disagreed with a study conducted by Steele, *et al*., (2008) who observed that altruistic behavior, empathetic concern and social motivation was more a woman than a man's character, which should lead to women donating blood more than men. The findings also disagree with the information gathered in South Arica as it indicates that blood is donated mostly by white male donors. (Blood donation in South Africa, 2008).

There are many reasons why people are willing to donate blood. One of them is just the wish to help others in need as shown by some studies. (Gillespie & Hillyer, 2002; Healy, 2000). Only 39.9% of the respondents of the present study showed an altruistic or a positive attitude towards blood donation matters as compared to a larger percentage (60.1%) whose attitude was negative. From those that had shown a positive attitude, 39.1% were blood donors, meaning the smaller percentage of 0.8% could be having genuine reasons that prevented them from donating, such as unfavourable health conditions. Few examples of such conditions may be anaemia, diabetes, hypertension and having an infection of some sort. To safeguard a recipient of donated blood only clean blood from a healthy donor free from infectious diseases may be transfused. Again to safeguard the donor, only when he is in a good state of health may he be allowed to donate. This is to make sure that he himself is not left weaker and seeking medical attention after donating his blood. (SANBS, 1995).

A reasonable percentage (58%) of the non-donors indicated though that they would be willing to become regular donors in future if they could be made aware of the importance of their blood as well as being informed of why them in particular and not only those who so like to donate. A smaller percentage (35.5%) of non-donor participants showed no interest at all towards blood donation matters as they indicated they were not willing to share their blood with anyone. This might possibly be due to lack of proper and adequate knowledge or to some extend merely ignorance.

There are many factors surrounding the blood donation that makes some people not willing to donate. The present study revealed that people do not donate blood because of reasons such as general fear of needle pricks, sight of blood, feeling weak after donation, medical excuses such as low iron levels in their blood. Some perceptions shown by respondents regarding the act of donating blood, among both the donor and non-donor sub-sample included that donating blood is frightening, time consuming, causes weakness and fainting and it leads to infection. If informed, people will know that the act of donating blood shall never come to harm donors as all measures are

observed to ensure total safety of the donor. An example is of tests done by the blood services such as ensuring that the donor's blood pressure, pulse, haemoglobin levels are normal before permitted to donate. Another is proper disposal of all used materials by the blood services personnel to ensure avoidance of contamination. (Standards for the Practice of Blood Transfusion in South Africa, 1990).

The infection aspect of these findings concurs with what Olaiya, *et al*., (2004) established in their study that investigated what motivated people to donate blood. In spite of the fact that the respondents of their study were considered knowledgeable, a very large percentage of them also feared being found to be HIV positive if they donated blood. These were people who for some reasons would not initiate their HIV testing, but would rather take chances and use the blood donation process for the purpose of determining their HIV status. They would donate and wait to see or hear if they are invited again for a further donation as it is the practice by the blood services. By being invited again to donate, one is certain that his blood is safe for transfusion, while not being allowed to donate again means one's blood is not safe for use. This would mean that some type of infection would have been detected in the other donation one gave. (SANBS, 1995).

The screening of blood for the Human Immunodeficiency Virus should really not be an issue to those committed to be regular donors. In other words, committed blood donors, of which appeared to be very few from the present study, are supposed to make efforts of knowing and keeping their HIV status negative and not make it the blood services' responsibility to worry about their lifestyle and HIV status as possible donors. Interestingly, the findings of a study by Zaller, *et al.,* (2005) revealed that in addition to blood donation being more due to social pressure, it was also due to the desire to know the screening results. Even if it remains part of their routine to test the donated blood for safety reasons, it would be a very expensive and a time consuming exercise for the blood services if they ever just went testing people's HIV or hepatitis status for the purpose of screening safe donors.

More reasons for non-donations were given by participants as never been asked by anyone to donate, never having thought about it and feeling blood donation matters should be left to health professionals. These reasons were found to be more worrying since general invitations are forever sent to every healthy person through different types of media for people to come and give this gift of life (blood) to the needy. Blood is a source of therapy, a fact missed by some people. It was interesting to note that some participants would not accept blood transfusion even if it was indicated for them for their survival. This they also used as a reason not to donate blood to save lives of those in need. As indicated earlier, some people, however, derive benefit from helping others by experiencing a sense of social connection. Voluntary donors feel a responsibility to help others, regardless of personal connection to those receiving the assistance. The data collected in the United States, Canada and the European Union as cited by Hupfer, *et al*., (2005) give evidence to this statement. Different from the findings of a larger percentage of participants from the present study, Alessandrini (2007) also established the evidence of voluntary blood donation in his Australian study.

There is always a need for aggressive campaigns to promote blood donation throughout the year. The results from study at the University of Limpopo revealed a serious concern by 56.9% of the participants. They felt enough was not done to encourage people to donate blood in spite of the fact that SANBS has regular visits to the institution. When asked how best they thought it should be done, the majority indicated that the promotions should be done in a manner in which HIV/AIDS information has been disseminated over the years, through health educational talks as well as through all forms of media. Because only a few people on campus donated blood each time the South African National Blood Services (SANBS) visited the campus, it would be reasonable to assume that the adverts and invites that are often run through the media urging people to donate blood are either ignored or not motivating enough to get people to donate as is the case with those in the present study. Further probing of the participants during a focus group discussion revealed that more frequent visits by SANBS to their campus were

preferred, not only for blood collection, but also to educate the community about blood donation matters.

During the focus group discussion it was pointed out that SANBS blood drives were really not visible enough to the general public, let alone the university community each time they visited the campus. The visits by SANBS to different institutions are mainly for the collection of blood or bleeding of donors as it is called. What could work even better is if only during these visits by SANBS not only introduction of blood donation matters to non-donors is done, but of great importance, education of people about what they need to know about blood donation. The fact that people need to make efforts of visiting other blood donation centers on their own, and not wait for SANBS to visit the campus is a valid fact that was not known to most of the respondents. This was also raised by participants from the focus group discussions. People are not informed about many more other centers designated for donation of blood out there, especially in urban areas. A very small percentage of the respondents as well as those from the focus group knew about those other centers where blood could be donated.

Some participants from the focus group remembered seeing a shop or office in town during their school going times, full of whites, but only got to know fully about it as a place were blood is being donated, only shortly after they started working. It unfortunately appeared from the focus group discussion that such centers if ever seen were regarded as places for whites, particularly males, where they could donate blood. This confirmed what had been said by the 27.1% of participants who had indicated that they did not know where blood was donated. As it came up in the focus group discussion that it is a perception which has to be changed through aggressive media campaign by SANBS, it is a course for concern.

It would be reasonable to then speculate that among certain people in the community there was a negative corporate image of SANBS. The South African Blood Services is not seen by some members of the community as a Health Care and Medical Institution as it is categorised. From the focus group

discussion and some of the respondents, it was felt that SANBS is not doing enough to educate, recruit or motivate black people in particular to donate blood. This is a further concern calling for action.

In some countries people are incentivised to come and donate blood. This could be in the form of what they get after donating their blood. (Mwaba & Keikelame, 1995). Routinely, a soft drink is given to donors as a standard procedure for assisting in the replenishment of body fluids after donating blood in South Africa and many other blood donating countries. Biscuits are also given together with the soft drink. These are seen as incentives by most of the donors. Time taken to consume these also allows the bleeding team time to observe any possible adverse reaction on donors, where they will have to then take a corrective action if the need arises. (SANBS, 1995).

In other countries such as Zimbabwe though, the soft drink and biscuits are the most preferred incentives after donating blood. Interestingly, preference for money, food, fruits and clothing was found to be very low particularly among rural respondents of a study carried out in Zimbabwe (Zimbabwe NBTS, 1995). In one anonymous survey involving 92,581 donors in the United States, as cited by Mwaba & Keikelame (1995), it was established that blood credits (61%), cholesterol screening (61%) and prostate-specific antigen (PSA) screening (73% of men) were the most frequent incentives, but for donors less than 25 years old (e.g. university students, recruits, etc.) gifts, compensatory incentives (e.g. tickets to events and tokens of appreciation were more important.

The more people who do not require any form of compensation the better for any blood transfusion services. In the present study only few respondents (26.3%) felt they would require payment as incentives for donating blood. This is likely never to happen since SANBS follows the WHO guidelines which discourage expectation of rewards following blood donation. (SANBS, 1995).
People should reflect an altruistic behaviour and learn to give their blood voluntarily. The more compensation the people seek the more unsafe the blood will be. Similarly, 13.6% of the respondents in a study by Olaiya, *et al*.,

(2004) preferred money. In addition, it was found that more preferred incentives; a finding not reflected the present study. Fourty one percent preferred certificates as incentives for donation. Less than 3% would have liked their names to be announced or published in the media while 2.58% would donate for nothing. Respondents also felt that donors should be given free medical services. In their opinion these people felt that they are also helping the institution in addressing the health needs of their needy patients. Regular donors who are not on medical insurance though, do get discounted, if not free blood and blood products, should they require transfusion themselves. This is a practice by SANBS. (SANBS, 1995). In contrast with the practice by SANBS, free medical testing and hospital treatment in public hospitals, leave incentives were recommended incentives in Greece as cited in a study by Androulaki (2005).

Participants were asked to suggest ways of improving blood donation practices among the black community and they responded by indicating that:

- **SANBS service delivery should be improved**

This was because SANBS was seen not to be successful in attracting and retaining more safe regular donors from the black community as the majority of the population of South Africa. During the focus group discussion a fact was raised that a minimum of 5 days stock of blood was needed all the time or everyday by SANBS. This was published daily by SANBS on their website. As of the day of the discussion the stock level was at 3.5 days. (SANBS, 2010). Again lack of information prevailed, as this was new information introduced. This information was not known to any of the participants from the group discussion, which possibly suggests the same for all other participants of the study.

Again the participants of the focus group felt that donor recruiters from the blood collection drives needed to be aware of the fact that the way their service is perceived by the people donating their blood may well determine the likelihood of the donor coming back to donate again. This would happen regardless of the reminders that are said to be sent to those who have

donated before. It was felt that to address the low blood stock levels; in their donor education, motivation and recruitment SANBS should consider targeting people that display healthy lifestyle attributes to come forward and while without causing offence discourage those who do not, while motivating them also to lead a healthy life style.

- **Rigorous education and workshops on blood donation and blood as a source of therapy**

It appeared that the participants knew more about HIV/AIDS infection as compared to blood donation. Most people felt that blood donation campaigns should be as rigorous as how HIV/AIDS ones are run at schools, colleges and universities targeting members of the youth community. Since the study revealed that people did not donate blood because of the fear of needle pricks, sight of blood, weakness, medical excuses, reactions, apathy and convenience, some respondents with a positive attitude felt that it was simply because those were never exposed to health talks about the fulfilling reasons of saving lives of others. They felt, should people be educated about the life saving aspect of the act of donating blood, they will feel the importance and stop thinking about their own feelings as they will be able to see a bigger picture of this life saving act.

Awareness about the benefits of donating blood, e.g., the occurrence of positive effects elicited by blood donation, i.e. feeling of satisfaction, greater alertness, increased wellbeing which were lacking among the respondents of the present study need to be highlighted in workshops educating about blood donation. The findings of a study by Al-Drees (2008) found in addition reasons of long distances to the donating site, transportation difficulty, time commitment, getting a short break from work/office, or a time off from home, mistrust as well as never being approached by anybody to donate as more discouraging factors. As never being approached and asked by anyone to donate as well as time commitments were also the findings of the present study, it meant that people are not considering themselves invited through whatever adverts are run by SANBS. The discussion group indicated that they

had a feeling that those invitation were targeted to a specific group they did not know. This is again a call to say invitations or adverts need to follow health talks with clear motivating reasons for people to understand they are directed to every individual who should either donate, encourage others to donate or do both himself as permitted by his health status .

The participants of the present study felt that, by educating the black community about the life saving aspect of the act of blood donation in particular, awareness could be raised, as such motivating black people to give their blood voluntarily. The participants also felt that such motivation could be needed to propagate for the recruitment of new blood donors from the general public, black in particular. More findings from the present study revealed that education about blood donation matters could help address whatever de-motivating factors and myths as well as the prevalent misperceptions which also include socio-cultural factors. These findings were in contrast though with those of a study by Andaleeb & Basu (1995) which revealed that awareness for the need of blood was found not to be a strong enough motivating factor for voluntary blood donation.

Though it was only a smaller percentage (22.9%) of respondents from the present study that felt for a person to donate blood he/she must have more blood than an average person, again lack of information prevailed. By so saying people felt they only had enough to make them live or sustain themselves. They felt by giving they would finish the little they had in their bodies. People need to know also that like knowledge, blood does not reduce by giving as Mehendale (2008) reported. People are not made aware of the fact that in a healthy individual the plasma part of the blood gets replaced within a short space of time after donating, with adequate fluid intake, while it takes the red bone marrow approximately 36 days to replace the lost red blood cells. (SANBS, 1995). This kind of information could be easily understood by people exposed to science and simple biology of the body, who will in turn spread this positive information that would then dismiss this myth that people have. Well informed people will be encouraged and as well take part in educating and encouraging others to respond to the call of

donating blood and saving lives. It appeared in this study that education, in addition to lack of awareness, were just what is missing amongst the University of Limpopo community. These similar findings were also obtained by Fusco (2008) in his study.

Informed people are privileged in a sense that they can use the information they have to act accordingly. People without the proper knowledge can never be trusted to act like those who are knowledgeable. People should be given education about blood donation matters, as it would to some extend help deal with the possible donor attrition rate in future. A general feeling gathered from the study was that youth, as very influential members of the community should be the population to target in this education endeavour. Another general feeling from the study was, should blood donation matters not be addressed in the black communities as a whole; there will always be a gap between exposure to blood donation information, knowledge and the adoption of the blood donation practice.

The fact that a large percentage of the participants had an idea that blood was a source of therapy and that blood donation was important in saving lives and yet only about four percent of those that ever donated blood voluntarily were found to be the only regular donors was an indication that something was lacking. A similar observation was made by Wawinitkit (2002) in his study, where 80% of the respondents knew something about blood donation and yet only 11% had ever donated blood voluntarily. Be that as it may, at least through continuing proper and detailed education the numbers may be increased in future.

The combination of adequate knowledge, positive attitudes towards donating blood, and a good corporate image from SANBS should generate and maintain appropriate practice behavior. This means that greater participation in blood donation activities by low risk individuals and groups should be encouraged, established, promoted and maintained. The complex interplay between knowledge levels, attitudes and actual practice should not be overshadowed by the fairly simple conclusion made from what is thought to

be the requirement to motivate people to donate blood. Black people as guided by the given low numbers of their participation require positive and active involvement in this regard.

- **Evidence that the blood is actually transfused to the needy.**

It was interesting to note that some people felt that the blood they would donate would not find its way to the intended users. Some respondents had a feeling that the blood collected from the black people was not used to save the lives of their fellow blacks. From both the respondents and the participants of the focus group, it came up that only water was transfused to the blacks. This again shows the lack of knowledge about transfusion matters. In this instance, evidence could be obtained from the hospitals that provide service mostly to the black community, on blood and blood products consumption patterns. This evidence could then be used during the education campaigns and workshops. This also could go a long way in informing the black community in particular about transfusion matters.

It has been revealed that if members of communities do not believe that the donations they give go to help those in their community or their immediate friends and family, they may be less willing to donate (Steele, 2008) The study was in agreement with the one by Gillespie & Hillyer (2002) which also revealed that, some people were motivated by the assurance that guaranteed blood replacement for family members, as well as for covering their own potential needs in the future.

The report by Tshabalala (2008) indicated that only 10% of black people in South Africa donate blood and yet they consume 80% of the blood that is donated mostly by the white community was presented to the focus group. This was again new information and bad news that the group learned about. The group's feeling was that only if the black community could be made aware by somehow being informed about this huge gap of blood donation practice they would take it upon themselves to correct the imbalances. This is also because the group acknowledged that there is also a possibility that

some of the white donors (from the majority of the donor pool) may become tired and discouraged by lack of commitment in this vital exercise of life saving by the other group (from the minority group of the donor pool) who are said to be having the greatest total blood demand in the country.

5.2 GENERAL CONCLUSIONS

- **Knowledge**

The level of knowledge about blood donation and transfusion matters appeared to be present but not as it would be expected among the educated University community. Confusing blood donation for life saving purposes with specimen donation for research purposes should be treated as a great concern as it clearly portrays lack of understanding of blood donation matters. There was also lack of information regarding blood donation centers or where blood may be donated. This clearly indicated that those centers are likely never to see this University of Limpopo community visiting them for donation of blood since they are not known to this community Androulaki, *et al*., (2005) established that it is very clear that donor knowledge is a prerequisite though not a sufficient factor to lead to voluntary blood donation.

- **Attitude**

Overall, there appeared to be a positive pre-disposition towards donating blood. There was no much argument about the need to help others and save lives and therefore, the linkage with donating blood was a base to build further blood donations by SANBS.

Several types of fears seemed to underlie most of the negative perceptions of giving blood and clearly tended to contradict the life saving, helping others, self sacrificing good intentions of donating blood. It is likely that the perceived risk of any type of infection far outweighed the perceived benefit of saving the needy life and therefore, tilted the balance in favour of not donating. There was also a misconception about blood re-generation process.

- **Practices**

The desired, appropriate practice or regular donation of blood depends on appropriate knowledge and attitude levels. In other words, incomplete knowledge and negative attitudes regarding any matter, blood donation in this regard are likely to induce non-compliance with desired behavior practice. This was a general feeling that prevailed from the present study. The South African National Blood Services need to appreciate the fact that, irrespective of gender, the low practice indicator; a gap between knowledge/awareness; attitudes and the actual act of donating blood is also consistent with limited direct or indirect experience of receiving blood.

5.3 RECOMMENDATIONS

It is very clear that the racial imbalances as occurring in South African blood donation practices are undesirable. In the mean time, strategies need to be urgently developed and implemented to correct those racial imbalances. Appropriate educational and motivational strategies are required to increase the level of knowledge among the black communities in order to promote and encourage blacks to become the majority of the donor pool, as the major racial group in South Africa. Factors that have been consistently identified as negative in potential donor decision making amongst the blacks need to be addressed. Aspects that need to be addressed include; lack of appropriate knowledge and information on the need for blood and blood products; the importance of blood and blood products; misconceptions about blood donation, fears and all factors contributing to the negative attitude of black people, as well as inaccessible blood donation facilities. Programs for motivation, recruitment and retention of voluntary non-remunerated donors should be created and strengthened.

- **Policy making**

Policy makers in the health sector need to recognise the nature of blood shortages as experienced by SANBS. Although those shortages are to some

extent still manageable, there is a need for an introduction of interventions that will address the exiting imbalances between blood supply and its requirements. Implementation of the policies will help in combating the possible severe shortages that are likely to occur should the current donor sources no longer be available in as great numbers as they were in the past like SANBS is aware. (Blood Donation in South Africa, 2008)

Since the national and international standards for the practice of blood transfusion indicate that blood donation should resume at the age of 16, (Standards for the practice of Blood Transfusion in South Africa, (1990) as well as Blood donor guidelines – America's Blood Centers (2010) this gives a clear guideline to those making policies as well as those who are supposed to educate the nation that, the educational interventions regarding blood donation should be targeted at high school level. Should secondary school children be made aware of the vital role of blood and other blood products, be taught about blood donation as their social responsibility, they will look forward with excitement, to reaching the blood donating age. This will also encourage the young ones to lead a healthy life style, as it is a requirement for blood donation. It will in turn help combat the spreading of diseases that so much contribute towards the reduction of possible future blood donors. Sick individuals give rise to sick communities, society and a sick nation which is so much of a financial burden to the government by depleting resources.

- **Information, Communication and education**

To promote and encourage the practice of blood donation by the black community a number of issues about blood donation matters need to be communicated to non-donors in particular. They include matters such as why the rejection of donors, the production and availability of blood and blood products as well as the importance of the lengthy screening questionnaire to be filled every time one wants to donate blood. People should be informed that transfusion of blood requires a safe donor, hence the questionnaires has to establish that safety and honesty. Fernadez, *et al*., (1996) and Al-Drees

(2008) reported that lack of information was one of the principal factors discouraging people from donating blood.

Rejection or deferral of donors does happen during procedures of donor screening for very valid reasons, safety being the major one. Despite it being a necessary exercise, it becomes problematic when donors are not informed about the reasons of their rejection as well as not being given advices on their deferral status. There should always be an explanation following the rejection of a donor. That will leave donors comfortable and happy despite their rejection. Donors will also be encouraged to return for further donations when their times are due and were advised to return. This is also a requirement as outlined in WHO's deferral policy and deferral criteria. (WHO, 2011). The South African National Blood Services need to educate their screening staff members about the vital importance of good donor treatment. If rejected, uninformed donors are left discouraged, depressed and live with fear as most jump into conclusions that the possibility might be that they are HIV positive. They are left confused, shocked, panicking, and living with disbelief, fear, anger, stigmatization and loss, regretting why they ever made a move to try and help save a life.

Boe & Ponder as cited by Gillespie (2002) emphasised the following incidences; that volunteering donors may not return for subsequent donations because of temporary deferral, including low haematocrit, sore throat, fever, or use of disallowed medication within established time periods before the donation point. They also mentioned that anticipation of temporary or permanent deferral has been frequently cited as a reason to avoid donation. He cited also another study by Oswalt in 1975, which revealed that close to 60% of potential donors claimed concerns about chances of being medically disqualified as donors or physical reactions to blood donation as sufficient reasons not to give blood. Lack of communication on reasons for temporary or permanent deferral of donors leaves those individuals, who are possible future donors with no option but to spread negative messages about the blood donation practice as a whole. When heard by other non-donors, these negative messages spread like wild fire. The end result will then manifest

itself in a very low number of blood donors among blacks in particular, turning up for donation.

Communication with clear explanations, possibly through health education could save both the most needed possible donors and the blood service such unwarranted disappointments. A lot of donors dislike filling in the lengthy screening questionnaire used by SANBS for screening purposes. The SANBS screening team members must take it upon themselves to explain the importance thereof to the donors. That it is essential in ascertaining that the blood services makes sure that one will come to no harm by giving blood. The people should be made to understand that, it is through the same questionnaire that SANBS can establish that donors are engaging in the act of blood donation responsibly, with honesty and not for different motives such as HIV testing. The people should be made aware that it is for reasons of safeguarding both the recipients of their blood and themselves against any illnesses. Educators have to develop new methods in order to present this information more clearly and concisely, and try new teaching methods in order to convert the non-donors as well as casual donors' favourable attitude towards blood donation to active blood donation behaviour.

It was a feeling of most of the study's respondents that blood donation and transfusion matters should be left to health professionals to handle on their own. Information regarding blood donation matters and blood products should aim at making all those that lack social responsibility or the knowledge about blood donation matters aware of the fact that it is never possible to do so. Black people should be made aware that blood and blood products cannot be manufactured in a laboratory for use by those who require it. Announcements over radio stations, phrases in news papers or even magazines calling for people to donate blood and save a life should be structured to be more informative than just being invites. The advertising of course does raise awareness, though it alone will not induce voluntary blood donation as reported by Andaleeb & Basu (1995). Only informed people will act accordingly.

Programmes should be developed to include this subject in the school curriculum as it is life and health oriented. Rigorous health education and workshops should be conducted on regular basis in order to educate and inform people about the crucial importance of blood, blood products and blood donation. Such programmes will help encourage students to lead healthy life styles as they would not want to be excluded from taking part in this crucial responsibility. Students will then serve as an entry point into the community, and through them larger percentages of the community members will be reached as these teenagers will spread the message to their entire family members.

Blood and blood components shortages are a social ailment as well as a public health concern. It is therefore essential that effective interventions in promoting blood donation be a collaborative effort between the community, the Department of Health, the Department of Education and the relevant stakeholders, in particular, SANBS. There is a need for recruitment of new black donors to replace other donors who have and are becoming ineligible, dropped or are still to drop out of the donor pool, as well as for building the solid blood supply to prevent shortfalls.

Motivation can be achieved through an effective information, education and communication strategy, such that people will be informed and become socially sensitive donors who would not be motivated by personal gains as Androulakki, *et al.,* (2003) stipulated. Non-donors need to be made aware of the social responsibility they have towards saving lives of others.

It can only be through some form of education, formal or informal, that people get to acquire knowledge about matters they never knew about before. Greater alertness increases well-being as well as satisfaction. A number of studies have shown that university students compared to general population had a high level of knowledge and a more positive attitude towards blood donation. Hosain, *et al.,* (1997), Mwaba, *et al.,* (1995) and Wiwatnik (2002) reported that health education about blood donation matters, through which awareness will be created, would be the only major tool to achieve the goal of

getting the black community to donate blood. This will serve the purpose of ensuring there is enough safe blood and blood product at all times. Strategies that focus on retaining returning donors and transforming first-time donors into repeaters should be implemented as they would be beneficial.

Education about blood donation should start from the secondary level of education. At this level the content of information and its mode of presentation will suffice to convert high school students into prospectively active donors. Both the content and the method should be combined with efforts to nurture feelings of altruism and voluntarism in the context of a multidisciplinary approach throughout one's education. This was also a suggestion by Pittadaki & Louizou (1991). Lemmens, *et al.,* (2005), revealed also that, for young people, the determinants of the intention to become blood donors include self-efficacy, attitude, personal moral norm regarding blood donation, and subjective norm, being perceived social support.

The type of education as recommended will help in building a favourable attitude towards blood donation which when combined with further education, as well as with incentives for first time donors can lead to active blood donations. As it was once a recommendation by Politis (2000); as well as Danic & Beauplet (2000), that effective blood donor recruitment and retention should be managed in a businesslike way, with passion as an integral part of the health system, this would be what to recommend at the end of the present study.

However, a larger study needs to be conducted with a wider pool of participants in order to gain more insights about people's knowledge, attitudes and practices about blood donation.

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Appendix I

Memo
From: MH Mamabolo
To: The participant
Re: Invitation to participate in a study

I, as a student in the School of Public Health, University of Limpopo, Turfloop Campus, am involved in a study to assess the knowledge attitudes and practices about blood donation amongst black employees of the University of Limpopo, Turfloop Campus.

The procedure to be followed in this study is to administer a questionnaire to willing participants in order to assess socio-demographic status and the information related to blood donation.

I would like to invite you to participate in this research study. Please find attached a consent form. Participation is voluntary and you are free to withdraw from the study at any time. If at any stage you have queries or questions about the research, or would like to obtain more information about this study, please feel free to contact me and I will gladly answer your questions.

Yours sincerely

MH Mamabolo Ms

Tel: 015 268 3293 /2356

School of Public Health,

University of Limpopo

Sovenga, 0727

Appendix II

CONSENT FORM

Statement by the participant

I fully understand the aim, objectives and procedure to be followed in this study. In signing this form, I agree to this investigation and understand that I am free to refuse or withdraw this consent regarding my participation in the study, at any time.

Signed: _____

Date: _____

Appendix III

QUESTIONNAIRE

THIS IS CONFIDENTIAL AND ANONYMOUS. PLEASE FILL IN AS MUCH AS YOU CAN.

A. SOCIO-DEMOGRAPHIC INFORMATION

Date of interview: …….

1. Gender:

Male	1	Female	2

2. Age: ……. years

3. Residence:

Urban	1	Peri-Urban	2	Rural	3

4. How many of the following groups are there in your household?	Number
Number of pre-school children	
Number of primary school children	
Number of secondary school children	
Number of adults younger than 60yrs	
Number of adults older than 60yrs	

5. What is your marital status?

Married	1	Single (Never married)	2
Widow	3	Cohabiting	4
Divorced / Separated	5	Widowed	6

6. What is your highest level of education?

Matric	1	Certificate	2
Diploma	3	Degree	4
Post-graduate	5		

7. In which section are you employed?

Academic	1	Non- Academic	2

8. In which faculty/department are you employed:

Faculty of humanities	1	Faculty of Management Sciences and Law	2
Faculty of Health Sciences	3	Faculty of Science and Agriculture	4
Admin and Support Services	5	Office of the Vice Chancellor	6

9. Your monthly income bracket is between:

R 1 000 – R 4 999	1	R5 000 – R9 999	2
R10 000 – R14 999	3	R15 000 – R19 999	4
R20 000 – R24 999	5	R25 000 and more	6

B. KNOWLEDGE, ATTITUDES AND PRACTICES ON BLOOD DONATION

1. What do you understand blood donation to be?

……

……

……

2. How important is Blood Donation in saving lives?

Not important at all	1	Little important	2	Important	3	Very important	4

3. Have you ever donated blood before?	Yes	1	No	2

4. Would you regard yourself as a blood donor?	Yes	1	No	2

5. If yes, what really motivates you to donate blood?

…….

……

6. If you are a donor, do you donate blood on a regular basis?	Yes	1	No	2

	Your answer
7. How often do you donate blood?	
8. Which year did you start donating blood?	
9. At what age did you start donating blood?	
10. How many times have you donated blood to date?	
11. What is your blood group?	

12. Reasons for not donating blood **regularly** (less than 4 times per year) **would** be:

Use the following keys to indicate your choice:

SD = Strongly disagree; **D** = Disagree; **A** = Agree; **SA** = Strongly agree.

	SD	**D**	**A**	**SA**
a. Blood donation is time consuming	1	2	3	4
b. Blood donation causes weakness and fainting	1	2	3	4
c. Blood donation is harmful to the donor	1	2	3	4
d. The fear of needle pricks	1	2	3	4
e. The fear of contracting diseases like hepatitis, HIV etc.	1	2	3	4
f. The frightening sight of blood	1	2	3	4

g. Fear of being diagnosed HIV positive	1	2	3	4
h. Fear of being rejected as a donor	1	2	3	4
i. Not having enough blood to spare	1	2	3	4
j. Never willing to accept blood transfusion even if in need	1	2	3	4

k) Other reasons for not donating blood **regularly** could be

……..…

……..……

13. If you are a donor, do you donate blood **voluntarily?**	Yes	1	No	2

14. If you do not donate voluntarily, please give a reason.

……

……

……

15. How often do you think a person should donate blood?

Once every month	1	Once every two months	2
Once yearly	3	Whenever one feels like	4
I have no idea	5	Whenever there is a shortage	6

16. If you are **a regular or a casual** blood donor, would you donate blood to the following persons:

a. An immediate family member?	Yes	1	No	2
b. A relative?	Yes	1	No	2

c. A friend?	Yes	1	No	2
d. A stranger in need?	Yes	1	No	2
e. A person from a different cultural group other than yours.	Yes	1	No	2

[Please respond to question no 17 even if you are a donor]

17. If you **are not**, or **<u>were not</u>** a blood donor your reasons for **not donating** could be/could have been: Use the following keys to indicate your choice:

SD = strongly disagree; **D** = Disagree; **A** = Agree; **SA** = strongly agree.

	SD	**D**	**A**	**SA**
a. No one has ever asked me to donate	1	2	3	4
b. No one close to me has ever needed blood	1	2	3	4
c. I never thought about it	1	2	3	4
d. I do not know where blood is being donated	1	2	3	4
e. The people from the blood bank do not visit regularly	1	2	3	4
f. I was rejected as a donor previously.	1	2	3	4
g. My religion is against blood donation	1	2	3	4
h. The questionnaire used for screening purposes is intimidating	1	2	3	4
i. The blood donation process is time consuming	1	2	3	4
j. It should be left for nurses and doctors	1	2	3	4

k) Other possible reasons for donating could be

……

……

18. A person should be paid for donating blood?

Strongly Disagree	1	Disagree	2	Agree	3	Strongly Agree	4

19. Enough is being done to encourage people to donate blood?

Strongly Disagree	1	Disagree	2	Agree	3	Strongly Agree	4

20. How best do you think people could be encouraged to donate?

……

……

21. How would you respond to the following statements?

	True	False
a. Blood is a source of therapy		
b. Blood loss always leads to death		
c. People with high blood pressure should be the only ones to donate blood		
d. To save costs, one needle can be cleaned and used more than once		
e. For a person to be able to donate blood, he must have more blood than an average person		
f. A healthy, fit person can donate as often he can		
g. An HIV positive person can donate blood for use by other HIV positive people		
h. If human blood is not available in stock, some can be prepared from the laboratory		
i. It is always best to receive blood from an immediate family member		
j. Blood in the blood bank is always safe		

22.

Would you like to become a regular blood donor if you are not one yet?	Yes	1	No	2

23. If no, please give your reason

……..……...

……

……

24. To which ethnic group do you belong?

N-Sotho	1	Ndebele	2	S-Sotho	3	Swati	4	Tsonga	5	Tswana	6
Venda	7	Xhosa	8	Zulu	9	Other	10				

THANK YOU EVER SO MUCH FOR YOUR TIME AND PARTICIPATION.