THE ATTITUDES AND PERCEPTIONS OF HEALTH CARE PROFESSIONALS TO ALTERNATIVES TO BLOOD TRANSFUSION: A CASE WITH JEHOVAH'S WITNESSES PATIENTS IN A CRITICAL CARE SETTING

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By

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DACLARATION

I DECLARE THAT THIS IS MY OWN WORK. IT IS BEING SUBMITTED FOR THE DEGREE OF: MASTERS IN CRITICAL CARE AND TRAUMA AT THE UNIVERSITY OF KWAZULU-NATAL, DURBAN. IT HAS NEVER BEEN SUBMITTED FOR ANY OTHER PURPOSE. ALL REFERENCES USED OR QUOTED HAVE BEEN ACKNOWLEDGED BY REFERENCING.

Vuyiswa Yvonne Mjoli

Signature..... DATE..30TH APRIL 2004

This study has been approved for submission by the supervisor of the study,
Dr B.R. Bhengu.

Signature..... DATE 30 April 2004

DEDICATION

TO ALL MY ENTIRE SPIRITUAL BROTHERS AND SISTERS, KEEP ON DOING THE GOOD WORK, KNOWING THAT THESE WILL NOT BE IN VAIN IN THE EYES OF THE LORD.

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ABSTRACT

Aim: The aim of this study was to explore the attitudes and perceptions of health care professionals to alternatives to blood transfusion for Jehovah's Witnesses patients in a critical care setting.

Methodology: Quantitative and qualitative approaches were used to explore the attitudes and perceptions of health care professional to alternatives to blood transfusion, in a critical care setting. The study was conducted in four largest hospitals in the Durban Metropolitan area, of which two were public and two private. A questionnaire was used as tool for collecting data. Space was provided to accommodate comments from the respondents in the questionnaire. Analysis of findings was done quantitatively by using a computer programme called SPSS (Statistical Packages for the Social Sciences), version 11.5. Themes that emerged from the participant's responses were classified under categories in the conceptual framework and analysed qualitatively.

Findings: Most of the respondents had mixed feelings about using alternatives to blood transfusion. The study revealed, however, that although alternatives to blood transfusions were commonly used in a critical care setting, some of the respondents did not know about the different types of alternatives available. Furthermore, it was evident from the respondent's comments that most of them had a positive attitude to people who refused blood transfusion and preferred

alternatives. Research into suitable alternatives to blood transfusion was encouraged by most of the respondents. However, transfusion transmitted diseases emerged as a current concern over and above the religious concerns. Recommendations for the future were made for the health care professionals working in critical care setting, nurse educators and nursing management.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

Blood transfusion is used worldwide as one of the prime tools in medicine for people who have lost blood owing to injury or disease. Like all other therapeutic interventions, blood transfusion has both medical benefits and risks which patients have a right to know about (Contreras, 1990). Blood is regarded as a gift of life, and the Blood Transfusion Service is committed to providing a safe, well-integrated, cost effective service that will function with transparency, since flaws and mistakes have been identified in their blood transfusion system (South African National Blood Transfusion services, 2001). The ABO blood group types were discovered by Landsteiner in 1900 (Silberstein & Toy, 2001). Since then significant advances have been achieved in improving the supply of blood with respect to availability, safety and fractionation into relevant components like red cells and plasma. Most procedures like complex cardiac surgery would be impossible without blood transfusion (Silberstein & Toy, 2001).

Studies done in Durban (South Africa) in 1995 and 1996 on the trauma profile within the Durban metropolitan area revealed that violence was the leading cause of death rating at 54.7% (S.A. Medical research council, 1997). The trend has not changed, as another study done in 1999 on a profile of fatal injuries in South Africa revealed that 25% were due to non-natural deaths, of which 80% had been traumatic deaths (S.A. Medical Research Council, 2000). Trauma is the fourth leading cause of all deaths of all ages in the United States (Gilcreast, Avella, Camarillo & Mullane, 2001). About 5.1million deaths per year worldwide are due to unintentional and intentional injuries

(Gilcreast, 2001). These figures highlight the importance of blood transfusion, since most of the traumatic cases need it.

Despite the advances and benefits that the blood transfusion services provide, there are fears associated with blood transfusion. Religious beliefs and fear of transfusion-transmitted diseases influence people's attitude towards blood transfusion. Human Immune Virus (HIV) and/or Acquired Immune Deficiency Syndrome (AIDS) is one of the most feared transfusion transmitted killer disease which has made people aware of the dangers of blood - borne diseases, including Hepatitis-B and other viruses (Contreras, 1990). HIV infected blood or blood products account for 3-5% of all adult HIV infection in Kwa-Zulu Natal (KZN Provincial Administration, 2000). Fear of such diseases has prompted people to resort to safer blood transfusion methods like autologous transfusion, which is the process of collection, storage and re-infusion of the patient's own blood. This procedure is usually done pre-operatively in anticipation of elective surgery. Alternatively, blood lost during an operation is collected and processed for re-infusion (Churchill, 1988). When loss of blood is severe, the best replacement is blood or other haemoglobin carrying products like red blood cells (Gilcreast, 2001).

Although there are various methods of blood transfusion, there is, however one example of patients who refuse blood transfusion because of religious beliefs. The Jehovah's Witnesses believe that blood is life and cannot be taken by any method (The Holy Bible Genesis 9:3, 4). These people maintain that they are not anti-medicine, and accept other blood - expander alternatives (Watchtower 1995 p13-15). Health care professionals (HCP) are sometimes faced with a challenge when a patient who needs a blood transfusion refuses it owing to

religious beliefs. Jehovah's Witnesses do not accept transfusions of whole blood, red cells, white cells and platelets but accept alternatives to blood transfusion (http://www.watchtower.org/library/hb/article-0.3.htm).

According to the Watchtower Bible and Tract Society (1995) the list of drugs and techniques acceptable for use during surgery have already been alluded to, however the list of fluids is as follows:

Volume expanders such as crystalloids like Ringer's lactate, normal saline and hypertonic saline etc.

Colloids that do not contain blood products e.g. Dextran, Gelatin and Hestastarch are also allowed. Furthermore a product called Perfluorochemicals (PFC) fluosol da-20 is also acceptable.

To ease this problem Jehovah's Witnesses have developed hospital liaison committees, who, at the request of the patient, can come and provide HCP with the latest alternatives that can be used for Jehovah's Witnesses who refuse blood transfusion. There are more than 1 000 hospital liaison committees worldwide that are equipped to provide doctors and researchers with medical literature from a database of over 3 000 articles related to bloodless medicine and surgery. The information on bloodless surgery and medicine compiled by Jehovah's Witnesses does not benefit them only, but helps everybody in need of it. When compiling a book entitled, "Auto transfusion: Therapeutic Principles and Trends", authors consulted Jehovah's Witnesses to provide them with information about alternatives to blood transfusion (Watchtower Bible and Tract Society, 2000). By invitation, the hospital liaison committees make presentations to hospital staff (Watchtower Bible and Tract Society 2000).

There are various types of alternatives to blood transfusion. These are: fluid replacement (crystalloids and colloids), drugs (iron dextran, epoietin erythropoietin, etc) and techniques used to minimize blood loss. While the alternatives to blood transfusion are available in abundance and readily accessible, Malyon (1998) has observed that they are not often used in case of refusal of blood transfusion. This lack of use of alternatives, Malyon (1998) attributes to lack of knowledge of these alternatives.

1.2 RESEARCH QUESTIONS

- What perception do HCP have regarding alternatives to blood transfusion?
- What is the attitude of HCP towards the use of alternative methods to blood transfusion?

1.3 PROBLEM STATEMENT

Health care professionals are sometimes faced with a challenge when offering support to a patient who requires blood transfusion, but refuses it. People sometimes refuse blood transfusion for fear of transfusion-transmitted diseases or for religious beliefs, like the Jehovah's witnesses, yet delay, or withholding of blood transfusion may lead to disability or death. Health care professionals (HCP) have a duty to save the patient's life by whatever means, but the patient has a right to refuse treatment if it contravenes cultural or religious beliefs: thus the patient's rights clash with the HCP's duty to give care. To ease this problem Jehovah's Witnesses have developed structures; for example, a committee to advise HCP and patients in the face of such a scenario. Use of alternatives to blood transfusion is another option for HCP. Thomas, as cited by Malyon (1998), maintains that alternatives to the use of blood transfusion existed, but

he was of the opinion that lack of knowledge prohibited many practitioners from useful application of them. Hence the researcher deemed it necessary to establish the HCP's perception of, and attitude towards, the use of alternatives to blood transfusion.

1.4 PURPOSE OF THE STUDY

Patients nursed in a critical care setting often need immediate replacement of blood lost during surgery, trauma, disease process or delivery. It is quite a challenge to HCPs to nurse a patient who needs a blood transfusion but refuses it, for whatever reason. The purpose of the study is to determine HCP's perception of, and attitude towards alternative methods to blood transfusion and to do more research into them.

1.5 THE OBJECTIVES OF THE STUDY

The objectives of this study were:

- To investigate HCP's perceptions of the use of alternatives to blood transfusion for Jehovah's Witnesses patients in a critical care setting.
- To determine the attitudes of HCPs towards the use of alternative methods to blood transfusion.

1.6 SIGNIFICANCE OF THE STUDY

This study will highlight the HCP's perception and knowledge about the use of alternative methods to blood transfusion to all people in need of such service. No research literature was found on attitudes and perceptions of HCP towards alternatives to blood transfusion, and this study would add to a limited body of knowledge in this regard. Knowing alternatives, and honouring a patient's decision not to accept blood transfusion will promote good nurse-patient relationships and facilitate mutual respect,

and it will further result in improved negotiations as well as informed decision-making in patient treatment and care.

1.7 CONCEPTUAL FRAMEWORK

According to Burns & Grove (1987) the conceptual framework includes ideas from one or more theorists and is developed by identifying and linking concepts selected from theories, experience and studies. Andrew & Boyle (1999) are of the opinion that theories should be evaluated for their relevance before being used with clients from culturally diverse backgrounds. Some theories do not fit into transcultural nursing; for example Orem's self care theory. Andrew & Boyle (1999) stated that this theory of self-care could cause cultural conflict with Non-Western cultures and values that promote the caring role for others, and belief in interdependence and responsibility for others. Western cultures, on the other hand, have opposite values, which promote individualism, autonomy, self-reliance and independence. Andrew & Boyle (1999), state that, Leininger's (1995) theory of culture - care diversity and universality emphasises the cultural dimensions of human care and caring, and is relevant when caring for patients from diverse cultures. Leininger is the founder of transcultural nursing, and has done extensive studying on this subject after noting cultural differences between patients and nurses (Andrew & Boyle, 1999). Leininger's theory best fits the whole system of health care delivery whereas blood transfusion refusal and its implications only apply to one group of people, and usually one individual and one aspect at a time, for example, religion. Other cultural models of care are: Felder's Cultural Diversity Practice Model, Leininger's Sunrise Model. For this study the Papadopoulos, Tilki and Taylor Model for Developing Cultural Competence was chosen as a framework. This model was chosen because it explains how HCPs can do

assessment of their own culture and that of others so that they can make a distinction between professional power and personal position when caring for their patients.

1.7.1. Cultural Competence

It is defined as "a process in which the nurse continuously strives to effectively work within the cultural context of an individual, family, or community from a diverse cultural background" (Andrew & Boyle, 1999). This is a challenge to nurses, because it is impossible to learn all the culturally and health - related beliefs and practices of all people (Andrew & Boyle, 1998). The HCPs can master some beliefs of people that they usually nurse or come across. Andrew & Boyle (1999) list most of the common religious denominations in the United States and Canada (most of which are also common here in South Africa) and discuss their health - related beliefs on certain issues like euthanasia, abortion, organ transplant, blood and blood products, visitors, sacraments, diet and so on. Their research revealed that there were both similarities and differences in the health - related beliefs of different religions. Berlin & Fowkes (cited in Papadopoulos et al, 1998) suggested the LEARN Model Guidelines so as to become culturally competent, as follows:

Listen with empathy and understanding to the patient's perception of the problem

Explain your perception of the problem and your strategy for treatment.

Acknowledge and discuss the differences and similarities between these perceptions.

Recommend treatment while remembering the patient's cultural parameters.

Negotiate agreement, understanding the patient's explanatory model so that medical treatment fits into their cultural framework.

The LEARN Model is relevant to the patient's assessment rather than the HCP who are the focus of this study.

Papadopoulos, Tilki & Taylor (2003) summarise the stages for the development of cultural competence in the following conceptual model which is discussed subsequently (Figure 1.1).

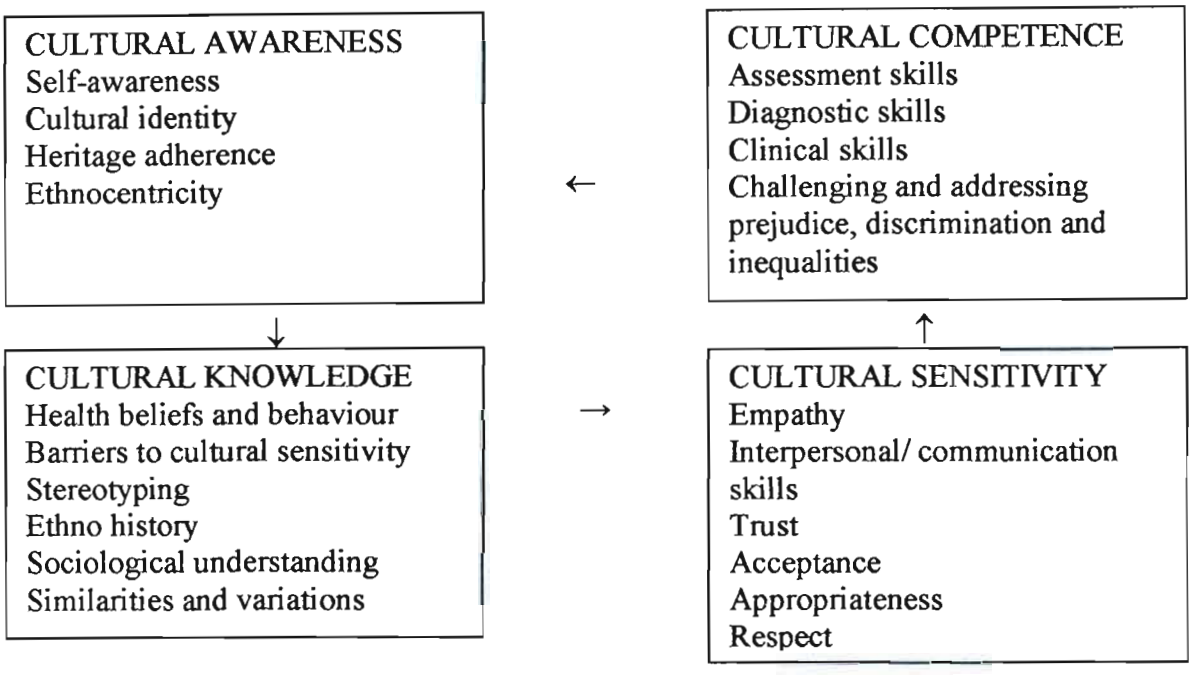

Figure 1.1 Papadopoulos, Tilki & Taylor Model for Developing Cultural Competence

1.7.1.1 Cultural Awareness (First Stage)

Cultural awareness refers to examination of our personal values, cultural identity and their influence on people's health beliefs and practices as a first step, so as to develop cultural competence (Papadopoulos et al, 2003). This includes knowing one's own cultural and religious beliefs.

1.7.1.2 Cultural Knowledge (Second Stage)

Cultural knowledge is knowledge of different cultures so that mutually shared nursing goals can be developed. This knowledge can be obtained during the assessment phase (Andrew & Boyle 1999). Cultural knowledge can be gained by being in contact with people from different ethnic groups. HCPs can gain this knowledge by cultivating good relationships with the patient, relatives and friends, and learning about their health related beliefs, for example knowledge of Jehovah's Witnesses illness beliefs and their rationale, including beliefs about blood transfusion. Students doing sociological studies can gain knowledge concerning professional power and control (Papadopoulos et al, 2003).

1.7.1.3 Cultural Sensitivity (Third Stage)

Cultural sensitivity is how HCP's view people who are in their care. Clients should be considered as true partners; if not, it would mean that HCPs are using their power in an oppressive way. Equal partnership involves trust, acceptance, facilitation and negotiation (Papadopoulos et al, 2003). Hence Jehovah's Witnesses' beliefs and explanation could be accommodated or negotiated on an equal footing.

1.7.1.4 Cultural Competence (Fourth stage)

This is when the previously gained awareness, knowledge and sensitivity will be synthesised and applied. Focus is given to practical skills and other caring skills. At this stage the ability to recognise and challenge forms of discrimination and oppressive practice is acknowledged, thus understanding human rights and inequalities (Papadopoulos et al, 2003).

The development of cultural competence means the learning of attitudes, beliefs, values and behaviour. This means that one must first do self-assessment and overcome one's ethnocentric tendencies, as well as cultural stereotypes that perpetuate discrimination against other group members. This is not an easy thing to do, but it is important in order to be competent and provide transcultural nursing care. Cultural competence is about understanding one's own and others' cultural beliefs and attitudes, and gaining of behavioural skills which will be necessary in nursing care; for example, when rehabilitating and helping a patient to feed himself, HCPs must learn and know whether to offer a spoon, knife and fork, or chopsticks or offer water to wash hands, as these will be needed by the patient according to different cultures (Andrew & Boyle, 1999). When cultural sensitivity, knowledge and skills balance with other health nursing skills, it can result in effective nursing intervention for people of diverse cultures.

If a Jehovah's Witness patient refuses blood, alternatives can be negotiated for example crystalloids, or alternatively the patient can be asked which alternative he/she prefers. Jehovah's Witnesses carry medical directive cards, which have phone numbers of people the patient chose to negotiate with about alternatives that can be used. Knowledge of expectable cultural patterns differs from stereotypes who expect only that which they know. To label patients as "non-compliant", or too resistant to benefit from treatment, or to recognise the value of the care being offered could mean lack of sensitivity, knowledge and skills on the HCP's part (Andrew & Boyle, 1999). That is why it is important for health care professionals to be culturally competent.

1.8 OPERATIONAL DEFINITION OF TERMS

- **Blood transfusion** in this case refers to introduction of human blood into another's vein. Blood transfusion is the replacement of blood lost during surgery, injury or disease process (Http://www.cancernet.co.uk/blood.htm:Red blood transfusion, 2002).

- **Health care professionals** are all professional nurses and doctors working in the critical care setting who have nursed Jehovah's Witness patients. Nurses are registered with the South African Nursing Council (Van Rensburg, Fourie & Pretorius, 1992). Nurses are also registered under the Nursing Act 1978 (Act 50 of 1978; Juta, 1999). Doctors are medical practitioners registered under the Medical, Dental and Supplementary Health Service (Juta, 1999).

- **Alternative methods to blood transfusion** in this study will involve non-blood volume expanders like crystalloids, drugs like imferon, which is an iron supplement, or epoietin Alfa (erythropoietin), which stimulates the bone marrow to make red blood cells, and other techniques used for blood preservation (Watch tower Bible and tract society, 2000; Feagan, Wong & Kirkley, 2000), as well as bleeding control measures, e.g.electrocautery to minimize bleeding during surgery.

- **Jehovah's Witnesses** are a religious group whose beliefs about blood transfusion are derived from Biblical passages that prohibit the taking of blood (Watchtower Bible and Tract Society, 2000; Gilcreast, 2001). There are about

72 707 of them in South Africa, 6 304 645 worldwide (Watchtower Bible & Tract Society 2003).

- **Attitude**, according to Ajzen, (1988), is a predisposition to respond favourably or unfavourably to an object, person, institution or event. This view is also shared by Fishbein & Ajzen (1975) who view attitude as a "learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given object". According to Allport, (cited in Ajzen 1988), "an attitude is a mental and neural state of readiness, organised through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related". In this study attitude refers to the way people view, or respond to, alternatives to blood transfusion.

- **Perception** is defined as "a concern with describing the world as experienced by a human being and with relating this world to the physical environment, the structure and physiology of the organism and impact of prior environmental conditions on the currently perceived world" (Kauffman, 1979). In this context the use of alternatives to blood transfusion by HCPs may be influenced by their previous experiences with people who refused blood and were given alternatives, since perception means a way of regarding, understanding or interpreting something (Pearsall & Elliot, 1999).

- **Culture** is defined as "arts and sciences, religion and philosophies, system of technology, political practices, and habits of daily life" (Mead cited in Andrew

& Boyle, 1999). Culture provides a guide to people regarding their values, beliefs and practices, as well as their way of perceiving and behaving. Culture influences people's perception of illness and health (Andrew & Boyle, 1999). In this context culture might influence the patient's or HCP's perception of, and attitude towards, alternatives to blood transfusion.

- **Religion** is defined as "an organised system of beliefs concerning the cause, nature and purpose of the universe, especially belief in or worship of God or gods" (Andrew & Boyle, 1999). As an integral component of culture, religious beliefs may influence the patient's course of action (Andrew & Boyle 1999). In the context of this study the religion refers to religious factors affecting the Jehovah's Witness.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Discussion in this chapter will focus on the history of blood transfusion, when it was started, how transfusion used to be done and how it is done today. The importance of blood will also be discussed, to show why blood replacement or transfusion is necessary in cases of severe blood loss.

2.2 History of Blood Transfusion

Richard Lower, an Oxford physician did the first blood transfusions to animals in 1665, transfusing blood from dog to dog. In the following two years he performed blood transfusions from animals to humans. At about the same time, a physician in France was also experimenting and by 1667 he had successfully transfused four patients with calf or lamb blood. The fifth attempt failed when the patient reacted badly and died due to incompatibility of blood (O'Shaughnessy, 2000). Transfusions were then banned in France and England. A century later, a London obstetrician proved that blood could be transfused with a syringe, but after many trials there were still untoward reactions in patients until the discovery of the ABO blood grouping system by Landsteiner in 1900 and the discovery of the anticoagulant properties of sodium citrate in 1914. These two factors led to blood banking, as we know it today. The first donors volunteered to donate blood in London in 1921, and were unpaid. Blood was transfused by cutting into the donor's vein and transfusing directly into the patient.

Because of the threatening war, by 1938 it was realised that blood had to be collected and stored for later use. Regional depots were set up during the war and after the war these became the National Blood Transfusion Services (O'Shaughnessy, 2000). In blood banks today, blood is screened for diseases, preserved, and then stored for later use. The South African National Blood Service (SANBS) collects over one million units of blood annually. Recruitment of donors is based on a World Health Organisation endorsed programme. Though South Africa has one of the highest HIV infection rates in the world the SANBS maintains that blood transfusion in South Africa is as safe as in other developed countries. To maintain a high standard of blood transfusion the SANBS observes the following standards:

- Blood is collected from a voluntary, non-remunerated, low risk population and a donor selection programme is maintained.
- All donated blood is screened for transfusion –transmitted infections like HIV, hepatitis A & B, and other infections; blood grouping is established, compatibility is tested and blood is processed.
- Only necessary transfusions are carried out and alternative replacement is used if possible (SANBS, 2003). Blood is stored and transported in cold storage (SANBS, 2003).

Studies show that viral transmission still occurs even though donated blood is tested for infection. One of the reasons is the "window" period when the donor is infectious but has not yet developed a detectable antigen or antibody. Some chronic carriers of hepatitis-B or C are undetectable by current assays (O'Shaughnessy, 2000). Anti HIV screening was introduced in early 1985 in the USA and later in the UK. A report from a

confidential line known as SHOT (serious hazards of transfusion), which was introduced in November 1996, reported that there were two hundred and one cases of Acquired Immune Deficiency Syndrome (AIDS) due to blood transfusion between 1986 and 1992 (O'Shaughnessy, 2000). The annual report from SHOT highlighted the risks associated with the transfusion of blood components and strengthened the argument for the use of alternative methods where it was possible to do so.

The summary of SHOT annual report for 1998/99:

Reaction	**Report**
Incorrect blood component transfused (IBCT)	144 (58%)
Acute transfusion reaction (ATR)	34 (13%)
Delayed transfusion reaction (DTR)	31 (12%)
Post transfusion purpura (PTP)	10 (4%)
Transfusion related lung injury (TRALI)	16 (6%)
Transfusion transmitted infection (TTI)	7 (3%)
Unclassified	7 (3%)

(Watson & Taylor 2000)

Watson & Taylor (2000) suggest the following criteria as indications for giving blood transfusion: Platelet transfusion 10x10 per litre and haemoglobin level of 8g per decilitre.

2.3. The importance of blood in the body

In simple words the function of blood is to carry and deliver nutrients from food and oxygen to all the body parts where needed. Blood also collects waste products, like carbon dioxide. When there is severe blood loss organs cannot get enough oxygen

(Http://www.oxmed.com/docs/datafiles/blood%2transfusion%20alternatives.html:bloo d transfusion alternatives, 2003). Blood transfusion is the replacement of blood that was lost during surgery, trauma or a disease process. Before blood transfusion is done a patient's blood specimen is sent for compatibility so that the patient is transfused with blood compatible to his own group type. In emergency cases blood group O negative can be given to a patient because it is a universal donor (Http://kidshealth.org/teen/your-body/medical-care/transfusion-p4html: Blood transfusions, 2003). A blood giving set is connected to a bag or bottle containing blood which is transfused into the patient's vein. The procedure usually takes 3 to 4 hours for packed cells per pack, and 4 to 6 hours for whole blood per pack. Hourly observations are done on the patient during transfusion to check for untoward reactions. The transfusion is discontinued and the doctor informed should any untoward reactions occur, for example, tachycardia, chills, urticaria, and pyrexia. In order to understand why blood transfusion is necessary, a brief explanation of the different parts of the blood is given, namely:

- Red cells which have haemoglobin, and carry oxygen to all the tissues of the body.
- White blood cells which are part of the immune system, and help fight infection.
- Platelets which help control clotting thus preventing further bleeding.
- Plasma which is a yellowish liquid that contains proteins such as clotting factors and other important blood components.

2.4 Factors influencing the decision to accept or refuse blood transfusion

People refuse blood transfusion for various reasons, such as culture, ignorance about uses of blood in the body, fear of transfusion-transmitted diseases, religious and legal factors. Religious factors, legal factors and attitudes of HCP are the focus of this study and will be discussed at length.

2.4.1 Religious Factors

Martinelli (1993) describes religion as a person's attempt to understand his or her relationship with the world. Values and beliefs are derived from religion and can have great influence on health care practice. Christianity dominates in the South African context, and The Jehovah's Witness religion is basically Christian, but the Jehovah's Witnesses have a unique belief that affects health care delivery and warrants conscious progression through the steps towards cultural competence. Jehovah's Witnesses refuse blood transfusion because they believe that blood is life and cannot be taken by any method (The Holy Bible Genesis 9:3-4). They do, however, accept other blood expander alternatives (Watchtower Bible and Tract Society, 1995 p13-15). Previous studies have reported that the lives of many Jehovah's Witnesses patients are lost because of refusal of blood transfusion (Muramoto, cited in Malyon, 1998). Malyon (1998) refutes this suggestion by arguing that there is no statistical evidence of morbidity or mortality rates due to blood transfusion refusal because the cause of death is usually concluded as being due to natural causes even in cases where extreme loss of blood was obviously involved.

Shander, professor of anaesthesiology in U S A, (cited in Watchtower Bible and Tract Society 2000 p10), stated that patients who were not getting blood were "doing just as well and maybe better". Geoffrey, a British consultant surgeon, noted that morbidity

and mortality rates of those who prefer bloodless surgery are as good as those patients who receive blood and in many cases they are spared the post operative infections and complications due to blood transfusion (Watchtower Bible and Tract Society, 2000). "In truth the Jehovah's Witnesses rigorous stand has been a major force behind the safer medical treatment becoming available to all" (Watchtower Bible and Tract Society, 2000, p11). Spahn (cited in Watchtower Bible and Tract Society, 2000) stated that bloodless medicine was the method of choice even for his extremely well informed patients and quoted professors, surgeons and their families who had requested no transfusion and were treated without using blood. One hundred of hip replacements on Jehovah's Witnesses were done successfully in the U.S.A. with the use of hypotensive anaesthesia to minimize blood loss. Doctors are using the same bloodless procedure on all other patients that they do hip replacements on (Http://www.watchtower.org./library/hb/article-0.3htm, 2002). Denton (cited in Http://www.watchtower.org/library/hb/article-0.3htm, 2002) stated that the risk of surgery in patients who were Jehovah's Witnesses was not higher than for the other patients. "Because of consistent success in Jehovah's Witnesses and the fact that blood transfusion carries a risk of serious complications, we are currently performing most of our paediatric operations without transfusion" (Http://www.watchtower.org./ibrary/hb/article-0.3htm, 2002 p4).

Andrew & Boyle (1999) were of the opinion that all religions address the issues of illness and wellness as well as caring and curing and that each religion has a different significance in relation to health matters. Andrew & Boyle (1999) suggested that the HCP had to ask patients or their relatives or friends about their religious beliefs and priorities so that the patient and the HCP could have mutual goals and priorities. Since

nursing emphasises holistic nursing care, which includes physical and psychological care, spiritual care should also be included. When HCPs provide care they should remember that the goal of spiritual intervention is not to impose their religious beliefs and convictions on to the patients. Andrew & Boyle (1999) has guidelines for assessing the spiritual needs in patients from diverse cultural backgrounds that could be used by nurses when giving spiritual care. Examples of these are that the HCP should assess whether the patient prays, mentions God's name, reads religious books, and uses a rosary and who visits the patient as a source of strength. Andrew & Boyle (1999) felt that although spiritual needs were recognised by many nurses, spiritual care was neglected owing to lack of knowledge about spirituality and religious beliefs of others. Andrew & Boyle (1999) listed most of the common religious denominations in United States (also common in South Africa) and discussed their health related beliefs on certain issues like euthanasia, abortion, organ transplants, blood and blood products, visitors, sacraments and so on. Their research revealed that there were similarities and differences in the health – related belief of the different religions.

There are institutions that admit all types of patients who choose bloodless surgery, one being all NETCARE hospitals (Http://www.netcare.co.za/html/services/blood-conserv.htm: Blood conservation – products and services, 2002). There are about 180 hospitals worldwide that have bloodless medicine and surgery programs (Watchtower Bible and Tract Society 2000).

2.4.2 Legal Factors

A blood transfusion is given according to procedures stated in the Human Tissue Act (Act no. 65 of 1983) which gives guidelines on:

- Licensing of blood transfusion organisations. Registers and records are to be kept by them of blood donors, blood donations, containers used and relevant statistics.
- Administration of blood and blood products.
- Standard practice of blood transfusion.
- Methods to be used in collecting blood.
- Requirements for whole blood and blood components.
- Tests for syphilis, HIV antibodies, Hepatitis and red cell grouping.
- Storing and transportation of blood at 2-10 degrees Celsius.
- Method of administering blood transfusion.
- Requirements for processing of blood and blood components.

(Strauss, 1991).

A medical dilemma arises when blood or blood products cannot be given to a minor because of the parent's religion. Parents are, however, informed of the legal implications of refusal for their children and that the doctor has a right to seek a court order to transfuse a minor if all alternatives have failed and blood transfusion is necessary (Strauss, 1991). According to Van Heerden, Cockrell, Eightley, Heaton, Clark, Siclair & Mosikatsana (1999), a person over 16 years of age may willingly donate blood but for a minor, parental or guardian's consent is required for donation of blood. The Child Care Act no.49 of 1996 states that if a medical officer is of the opinion that a certain operation or treatment is necessary on the child and the parent or guardian cannot be found or refuses to give consent, the matter is referred to the Minister of Health who may give consent if satisfied that such an operation is necessary

or else the hospital superintendent, after obtaining the views of another medical practitioner, may give consent (Juta's Statutes of South Africa, 1999).

According to Juta's Statutes of South Africa (1999), a married woman has equal status and capacity to enter into contracts as her husband. According to South African law, men and women enjoy equal status. Van Heerden et al (1999) argue that even marriage no longer results in discrimination on grounds of sex, which means that women can make their own decisions regarding blood transfusion. The Constitution of the Republic of South Africa (1996) affirms this argument about women as follows "The state may not unfairly discriminate directly or indirectly against anyone on one or more grounds, including race gender, sex, marital status,... age, religion, conscience, belief, culture, language and birth" (The Constitution RSA, 1996 p7).

2.4.3 Professional attitude and perception

Abbot & Sapsford (1998) are of the opinion that questions about attitudes and beliefs are more complex than they may first appear. Researchers have never managed to reach a consensus on how attitude should be defined. According to Abbott & Sapsford (1998) an attitude is something that a person has, a tendency to behave in certain ways but is not necessarily part of a person's conscious thought process. HCPs' attitudes towards alternatives to blood transfusion were determined by using questionnaires and the participants' responses were then analysed. Perception is learned and is the end result of a process of interpreting our sensations on the basis of past experience Rock, 1975; Hentschel, Smith & Dragun, 1986).

From the above definitions of attitude and perception it can be concluded that both are learned over time. A person's response, whether favourable (positive) or unfavourable (negative), is related to his/her perception of that object or situation. Since both attitude and perception are learned, it can be deduced that they can change from time to time depending on the situation or on what the individuals learn. Ajzen and Fishbein (cited in Frank-Stromborg, 1988) believe that humans are rational rather than being driven by uncontrollable desires and that behaviour is carefully reasoned as opposed to automatic. Both attitude and perception are inseparable but the difference between the two is that perception can come in different levels for an example: low, medium, high but this is not so with attitude.

Health care professionals are sometimes faced with a challenge when a patient who needs a blood transfusion refuses it. One rescue nurse on flight reported that she felt helpless when a patient who was a Jehovah's Witness, and had haemoglobin of 1.3gm/dl refused blood transfusion. This particular nurse further states that other caregivers who were also present at that time did not comprehend or accept her fateful decision to refuse blood on religious grounds but she had overheard one of the emergency nurses say " oh no, not another one". On arrival this patient had a haemoglobin of 9gm dl and doctors explained the consequences of refusal of blood to the patient .The article does not explain, however why the patient was not taken to theatre there and then to control bleeding surgically before the haemoglobin went down to 1.3gm dl. The article does not state what other alternative methods were used besides giving 13 L of normal saline infusion and 100% oxygen (Glendenning, 2002). This article is entitled "Refusal of blood because of religious beliefs: a patient's right to die"

and the author further appeals to others with similar experiences who might have solutions to this dilemma (Glendenning, 2002).

This view of people's right to die if they refuse a blood transfusion but accept alternative methods to blood transfusion may not be shared by other HCPs who have successfully used blood alternatives. Earnshaw, a consultant orthopaedic surgeon, stated that though bloodless surgery was relevant to Jehovah's Witnesses that was how they wanted to treat everybody (Watchtower Bible and Tract Society, 2000). Other examples where alternative methods were used successfully have already been discussed under religious factors. Other physicians believe that "no means yes" when faced with a Jehovah's Witness and they don't take their refusal of blood seriously (Davis & Dena 1994). Haljamae (1999) stated that it has been shown experimentally as well as clinically that pre-hospital or initial hospital resuscitation of patients in hypovolaemic shock with small volumes of hypertonic saline increases systemic blood pressure, cardiac output, and peripheral tissue perfusion and survival rates. Therefore alternatives to blood transfusion have a place in fluid resuscitation.

Health care professionals must first do self-assessment regarding their own cultural beliefs and values so as to overcome cultural stereotypes. They must also learn and understand different cultures of the people they care for, so that it is easy for the two parties to discuss nursing intervention and negotiate alternatives (Andrew & Boyle, 1999).

2.4.4 Medical Factors

A blood transfusion is given to replace blood lost in surgery, trauma and to treat anaemia. Any reduction in blood volume causes a reduction in the venous return and release of catecholamines. Shock is a clinical syndrome that results in inadequate perfusion of vital tissues. Anaerobic metabolism and lactic acidosis result when tissue demands for oxygen cannot be met. The sequence of events that occurs eventually leads to multiple organ failure (Manara, cited in v.d. Merwe, 1995; Kuhn, 1996). Treating the patient aggressively and timeously with fluid resuscitation can prevent complete vascular decompensation (Kuhn, 1990).

Blalock, cited in v.d. Merwe (1995 p2), was of the opinion that haemorrhagic shock could be reversed by simply administering blood. He defined shock as "a peripheral circulatory failure, resulting from a discrepancy in the size of the vascular bed and the volume of the intravascular fluid". As time went on other researchers recognised that shock was not only a volume problem and defined it as "a condition in which oxygen delivery to the tissues fails to meet the metabolic needs of the tissues at the time" (Manara cited in v. d. Merwe, 1995 p2). When one thinks of replacement of blood, one must think of both replacements of volume as well as improving oxygen delivery to the tissues (Haljamae, 1996). There is no consensus as yet regarding haemoglobin levels of patients who need transfusions. Normal haemoglobin value of a person is about 14 or 15 grams in every cubic centimetre of blood, for women 12-15g/dl and for men 14 - 16.5g/dl. Another measure of the concentration is hematocrit, which is usually about 45 percent, that is 37% - 45% for women, and 42% - 50% for men (Ignatavicius & Bayne, 1991).

The accepted rule was to transfuse a patient before surgery if his haemoglobin was below 10gm/% (Http://www.watchtower.org/library/hb/article-0.3htm, 2002). It is asserted that haemoglobin values as low as 2-2.5 gm/100% may be acceptable (Http://www.watchtower.org/library/hb/article-0.3htm, 2002). Manara (cited in v d Merwe, 1995) mentioned that the haemoglobin level accepted to proceed with surgery keeps coming down all the time. It used to be 12gm/% then came down to 10gm/% and some accept 8gm/% and even 7gm%. Fear of transfusion - transmitted diseases and the shortages of stored blood have prompted other people to choose bloodless surgery, which is the latest form of an alternative to blood transfusion.

There has been increased public concern with blood transfusion because of the fear of transfusion - transmitted diseases, especially HIV. In the late 1980s there has been an increase in the number of requests for autologous donations. This demand is directly related to articles in the media about HIV. Nowadays if patients are to be transfused they expect warranties about the quality of blood and often request alternatives. Hence the transfusion services have developed autologous services to meet this demand. Autologous transfusion is the collection and re-transfusion into the patient of his own blood (Watson & Taylor, 2000). The patient donates blood during a pre- surgery period, so that it can be used should the same patient need blood transfusion during surgery. This procedure benefits the patient because blood is easily available when needed; there is no risk of transfusion infection or reaction due to incompatibility. This procedure is not without its own problems though, which include advance planning, which is time consuming for both the patient and staff, it is costly, blood sometimes is wasted when it expires and surgery is delayed. Supplementary iron can be given during the procedure and blood can be collected four weeks before surgery.

A second method of autologous infusion is acute normovolaemic haemodilution (ANH) that is carried out in the immediate pre- operative period. During induction of anaesthesia, blood is withdrawn from the patient and replaced with colloid or crystalloid solution, resulting in red blood cell mass dilution. Circulating blood will have low haematocrit and the number of red cells lost during bleeding during surgery will be less. At the end of the procedure the blood with a high haematocrit is replaced when surgical haemostasis has been achieved (Watson & Taylor, 2000).

The third method of autologous transfusion is intra - operative cell salvage where blood from the surgical wound is collected and re- transfused. Should a patient refuse blood transfusion because of religious beliefs or fear of transfusion-transmitted diseases, what other alternatives can be offered? When offering alternatives to blood transfusion, patients must be assessed individually, bearing in mind other risks like chronic illnesses, age, amount of fluid and blood loss and the condition of the patient (Haljamae, 1996). Alternatives chosen must address both volume replacement and oxygen delivery. Fluid replacement with volume expanders will be discussed at length, since other alternatives, such as drugs and other techniques, have already been discussed in this study. Tissue oxygenation and haemodynamic stability is dependant on the maintenance of blood volume. The two types of plasma expanders are crystalloids and colloids. Examples of crystalloids are: Normal Saline, Ringer's Lactate and Dextrose solution, and colloids are: Albumin, Dextrans, starches and gelatins. Crystalloids are a first choice of intravenous solution for hypovolaemia and colloids are suitable for patients who cannot tolerate the larger volumes required during resuscitation.

A list of techniques used in bloodless surgery is outlined by Gilcreast (2001), which, according to her, can reduce blood loss to a greater degree. Other alternative methods to blood transfusion have already been mentioned earlier on in the study. There is usually debate over the preferable resuscitation fluid. Advocates of crystalloids state that they are cheap compared to colloids, yet those who prefer colloids state that they are more efficient, more rapid in resuscitation and lower volumes of fluid are needed for resuscitation (Henry & Scalea, 1990). The pro- crystalloid argument is based on the fact that acute changes take place in the extracellular fluids associated with major trauma or surgery and that the resulting extra cellular deficit can be corrected by infusing large quantities of crystalloids e.g. Modified Ringer's Lactate (Haljamae, 1996). The pro - colloids are of the opinion that the primary problem in the critically ill patient is the restoration of plasma volume, blood volume and oxygen transport. Colloids provide a greater haemodynamic response than crystalloids; even if crystalloids are given in four times greater quantities (Haljamae, 1996). Tissue oedema was more significant in patients given large volumes of crystalloids Haljamae (1996) concluded that colloids have a role to play in the fluid therapy of a critically ill patient and that the real question of interest was which colloid to choose.

Muckart and Bhagwanjee (2000) are of the opinion that in view of possible disadvantages of colloids and crystalloids it would be wise to individualise patient management according to the anatomical nature and physiological severity of the insult. According to them, class I and II haemorrhage (from Advanced Trauma Life Support) may be treated safely with crystalloids, and class III and IV would merit the expense of colloidal resuscitation protocol. The Advanced Trauma Life Support

classifies haemorrhage according to amount of blood loss and signs of the patient, and suggests management thereof with fluid replacement.

Fisher (cited in v.d. Merwe, 1995) referred to this debate as a scenario where two treatments are so close to being identical that there is virtually no difference. Stockwell, Soni & Riley (1992) summarise this debate of colloids versus crystalloids by pointing out that it has swung in favour of colloids. There would be no controversy if blood loss was replaced with blood, but blood has its own disadvantages, points out Manara (cited in v.d. Merwe, 1995). He further points out that:

- It may take up to 40 minutes to group and crossmatch blood for the individual patient.
- Stored blood will have poor platelet function and a high potassium ion concentration; platelets and white cells fragment rapidly and lose normal function.
- Blood has a high viscocity, and the microcirculation in shock may be improved by a reduction in the packed cells volume to about 30%.
- Blood has the risk of passing on infectious diseases especially HIV.
- Whole blood is not always readily available, if red blood cells are given, something else must be given to provide volume.

As was mentioned earlier on in our discussion, red blood cells have haemoglobin, which carries oxygen to all the parts of the body where it is needed. Alternatives given should cater for the oxygen need of the body. Literature shows that as yet there is no known oxygen carrying solution which can be used as an alternative for patients who

need blood transfusion (Watson & Taylor, 2000). The following techniques can be used to preserve blood as alternatives to red blood cells:

Alternatives to Red blood cells

- Prevention of blood loss in the first place, as was discussed under other techniques (Watson & Taylor, 2000).
- Minimizing the amount of blood taken for specimen to 1ml and avoiding wasting blood.
- Minimizing blood loss during procedures like insertion of arterial, peripheral and central venous lines by not fidgeting with the patient, finishing the procedure in time and cleaning and securing the catheter inserted.
- Oxygen carriers- as yet there is no known oxygen carrying solution for use in patients who require a blood transfusion to maintain oxygenation (Watson & Taylor, 2000).
- Cell free haemoglobin preparations- studies have shown that this type of haemoglobin preparation has problems because it is nephrotoxic and oxygen is not released to the tissues as readily as it is from haemoglobin inside erythrocytes and the last problem is that since human haemoglobin is being used, viral infection and immunological incompatibility still pose a problem. Development and research is still under way in SA in this regard (Watson & Taylor, 2000).
- Perfluorocarbon (PFC) emulsions –these have a greater oxygen carrying capacity and they also carry nitrogen. When formed into emulsions they

can be administered to patients. These PFC may be able to support oxygenation to areas where it is needed (Watson & Taylor, 2000).

A study done by Stockwell, Soni, & Riley (1992) on patients in CCU who were given either albumin or synthetic colloid (Haemaccel) revealed that there was no significant difference in length of stay between the two groups and also there was no significant difference in patient outcome. They came to the conclusion that the theoretical benefits of albumin did not appear to influence outcome, and their results justified the use of synthetic colloids for volume replacement in the critically ill. The choice of colloid should be based on the plasma volume supporting capacity, intravascular persistence, modulating effects on cascade system activation (Pharmalink, 2002).

2.4.5 Choice of fluid for replacement

The choice of fluid to be used in resuscitation of patients with haemorrhagic shock is usually controversial. Some doctors prefer colloids to crystalloids and vice versa (Manara, cited in v.d. Merwe, 1995; Haljamae, 1996). Muckart & Bhagwanjee (2000) are of the opinion that the controversy continues because some studies are done on animals and reactions are not the same as for humans.

Manara (cited in v.d.Merwe, 1995), is of the opinion that the choice of fluid used in replacement is less important than the speed and adequacy of fluid replacement. Guidelines for intravenous fluid replacement are outlined in *The ABC of major trauma* (Skinner, Driscoll & Earlam1996) whereby haemorrhage is divided into four classes according to the amount of blood that was lost.

2.4.6 Drugs

Imferon (iron dextran) is an iron supplement in an injection form which is given to replace depleted iron stores and iron levels in haemoglobin. Imferon can be given to patients who are anaemic owing to severe blood loss or a disease process. Blood loss removes erythrocytes from the circulation, thus reducing the oxygen carrying capacity of the blood (Watson & Royle, 1987). Iron is needed to maintain enough haemoglobin within red blood cells (RBC) to transport and deliver adequate oxygen. Iron deficiency results in decreased haemoglobin synthesis, decreased RBC production with resultant anaemia. Absorbed iron is taken up into the bone marrow tissues that form blood cells where it is used to synthesise haemoglobin (Christman, 1980). Iron replacement can also be given orally in patients who have iron deficiency due to the disease process and chronic blood loss, which is continuous loss of small amounts of blood over a long period. Iron replacement cannot be used in an emergency to treat anaemia due to severe loss of blood. Examples of such drugs are ferrous sulphate, ferrous gluconate etc (Watson & Royle, 1987).

Epoietin Alfa (erythropoietin) is a genetically engineered protein that stimulates bone marrow to make red blood cells and can be given in cases of severe blood loss (Feagan, Wong, Kirkley, Johnson, Smith, Whitsitt, Wheeler & Lau, 2000). A study done on critically ill trauma patients revealed that these patients responded well to erythropoietin treatment and that their clinical presentation was similar to patients with anaemia of chronic disease (Parillo, 2001).

Desmopressin (DAVP), helps to reduce the bleeding time in acute bleeding (Watchtower Bible and Tract Society, 2000). Desmopressin can be given pre-

operatively to increase the activity of the clotting factor VIII and the consumption of prothrombin and decrease partial thromboplastin and bleeding times. Desmopressin can reduce blood loss by as much as 32% (Gilcreast, Avella, Camarillo & Mullane, 2001). DAVP also has vaso-constriction properties.

Antifibrinolytics are used to help reduce blood loss during surgery (Watchtower Bible and Tract Society, 2000). Antifibrinolytic agents are used in cases of excessive bleeding resulting from hyperfibrinolysis and may also be used to seal a bleeding site. (Phipps, Long, Woods, 1987, Christman, 1980). An example of these agents is amicar (aminocaproic acid), which is given initially as a 5g dose intravenously slowly, followed by 1-1.25g hourly until bleeding is controlled (Christman, 1980). Aprotinin is another antifibrinolytic agent, which inhibits proteolytic enzymes, thus reducing blood loss and transfusion requirements. Recent studies have shown that there is a reduction in the number of patients receiving allogeneic (donated) blood transfusion when treated with aprotinin or tranexamic acid (Watson & Taylor, 2000).

2.4.7 Other Techniques

Blood conservation

It is recommended that minimal amounts of blood be taken for diagnostic purposes. For example, when drawing a blood sample for an arterial blood gas analysis, 0,5-1ml would be enough instead of drawing more blood which will later be discarded. (Netcare, 2002; Gilcreast et al 2001).

Blood salvage

Blood flowing from a wound can be aspirated, filtered and directed back to the circulation. When using blood salvage machines, blood lost during surgery or injury is collected, cleansed, and can be returned to the patient in a closed circuit (Watchtower Bible and Tract Society, 2000).

Recognising and controlling bleeding at the scene of injury by trained personnel.

Most deaths occur within the first few hours of injury. Fluid resuscitation combined with surgical control of haemorrhage is important to save lives. Development of courses like the Advanced Trauma Life Support (ATLS) has brought about significant improvement in ensuring that bleeding is recognised promptly and resuscitation skills perfected (Manara cited in v.d. Merwe 1995).

2.4.8 Surgical techniques

Thorough pre operative planning and consultation with experienced clinicians helps to avoid complications such as severe bleeding and coagulation problems by anticipating, preparing for and taking precautionary measures to prevent such problems (Watchtower Bible and Tract Society, 2000).

Electrocautery is done to minimize bleeding during surgery. Electric currents are used to remove tissue and control bleeding; thereafter a pressure dressing is applied over that area to arrest bleeding should it occur (Phipps, Long & Woods, 1987).

Induced hypothermia –This is done by cooling a patient to lessen his/her oxygen and metabolic needs during surgery. Blood is removed from major blood vessels and

circulated through coils immersed in a refrigerant and then returned to the body through another vessel. Alternatively a cooling blanket can be used, which is electrically controlled with coils through which a cold fluid is circulated. This blanket can also be used for rewarming the patient by adjusting temperature controls. Induced hypothermia is done for temporary interruption of blood flow to a particular area. This procedure is also done if the operation performed places the brain at risk of decreased blood supply or oxygen supply so as to decrease cell activity and oxygen requirements, thus preventing brain damage. The heart-lung machine (pump oxygenator) which is used in cardiac and vascular surgery as a mechanical pump to maintain circulation and add oxygen to the blood, also has a heat exchanger, which can be used either to cool or warm the blood (Watson & Royle, 1987)

Hypotensive anaesthesia.

Hypotension may be induced for the purpose of decreasing bleeding at the operation site, for instance when head, neck and pelvic surgery is performed (Phipps et al, 1987). Lowering mean arterial blood pressure reduces blood loss by up to 40% because bleeding is slowed by less hydrostatic pressure. Blood pressure is returned to normal at the end of the surgery (Gilcreast et al, 2001).

Surgical tools like devices that cut and seal blood vessels simultaneously for an example diathermy, are also used to arrest bleeding immediately (Watchtower Bible and Tract Society, 2000).

Biological haemostats

Collagen and cellulose woven pads are used to stop bleeding by direct application. Fibrin glues and sealants can plug puncture wounds (Watchtower Bible and Tract Society, 2000).

Patients on heart-lung machines primed with a non- blood fluid may benefit from the resulting haemodilution, as fewer red cells will be lost.

2.4.9 Alternative Intravenous Fluids

These are fluids and techniques that can be used in place of blood transfusion. A vast number of categories are available with both volume expansion advantages and other specific advantages.

Artificial Colloids

Dextrans

Dextrans are found in various forms namely:

6% Dextran 70 (average molecular weight 70,000 daltons)

3% Dextran 60 (average molecular weight 60,000 daltons)

10% Dextran 40 (average molecular weight 40,000 daltons)

Dextrans have a good initial plasma volume expansion owing to the high water binding capacity of 20-25-ml/g dextran. Smaller dextran molecules are rapidly cleared in urine while larger molecules (> 55,000 daltons) remain within the intravascular compartment for some time. Six percent dextran 70 and 3% dextran 60 will be more effective in shock treatment because of their high molecular weight, intravascular persistence and

more intravascular volume support. Initial trauma resuscitation with dextran should not exceed 1.5%/ kg bodyweight.

Dextran has an anthithrombotic effect, thus preventing cascade system activation in the hypovolaemic trauma patient (Haljamae, 1999). Dextran also reduces the incidence of deep venous thrombosis and fatal embolism (Haljamae, 1996).

Rheomacrodex (Dextran 10% 40) is a natural product that is isotonic with blood plasma. It is an osmotically hypertonic solution, which is available in glucose and sodium chloride solution. Dextran has a plasma supporting effect and intravascular persistence, thus preventing harmful cascade system activation. It also improves microcirculatory flow in ischaemia and is fully excreted or metabolised by the body (Pharmalink 2002)

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Gelatin preparations have a molecular weight of about 335,000 daltons and are therefore poorly retained in the intravascular system, giving haemodynamic support for about 30 minutes after infusion (Haljamae, 1999).

Gelatin is commercially available in three forms namely:

> Succinylated gelatin for example Gelofucine, Plasmion D1 isocyanate urea linked Gelatin for example Haemaccel and Dialdehyde cross-linked Gelatin, for example Gelofundiol.

Haemaccel has high calcium content and is therefore unsuitable for use in patients on digitalis.

Gelofusine has a low calcium and potassium content.

Hydroxyethyl Starch (Hes) is available in the following forms:

6% 450/0.7 Hetastarch (450,000 daltons, molecular substitution 70%).

3%, 6% and 10% 200/0.5 –0.62 Hetastarch (200,000 daltons, molecular substitution 50-62%).

6% and 10% Pentastarch 264/0.45 (264,000 daltons, molecular substitution 45%.

Low molecular weight starch (40,000 –120,000 Daltons).

HES preparations have a good plasma volume - expanding capacity. There is about 40-50% excretion of the administered dose in 24-48 hours.

Haes-steril 6% (Pentastarch) is an iso oncotic colloid solution, which provides volume replacement with 100% initial effect. It is extracted from wax corn starch dissolved in normal saline. Haes steril 10% has a mean molecular weight of 200 000 Daltons, and provides expanded blood volume for up to 48 hours, thus increasing tissue and organ perfusion. Since it is a hyper - oncotic colloid solution, it provides volume expansion of blood volume, which results in rapid increase in blood pressure, improved oxygen supply and improves microcirculation. It is a plasma substitute, which is readily metabolised and excreted by the body (Fresenius Kabi, 2002).

Studies show that low molecular HES solutions like HES 200/0.5 are more effective in trauma resuscitation than high molecular preparations. A HES mediated modulation of the coagulation cascade at the initial resuscitation of trauma patient has not been reported (Haljamae, 1999).

Disadvantages of HES are that it is not completely metabolised and cleared from the body, which can lead to damage to donor organs and itching (Haljamae, 1996). An undated Fresenius Kabi brochure states that HES is readily metabolised and excreted.

2.4.10 Natural Colloids

Plasma

Its volume supporting capacity and intravascular persistence is inferior to that of Dextran or HES because plasma contains vasoactive substances that interfere with the vascular tone and capillary permeability in the recipient. Plasma infusion has hazards similar to those of blood transfusion and can be given only for strict medical indications for example coagulation - reaction deficiency (Haljamae, 1996). Plasma has risks of transferring infections and has an effect on immunocompetence and because of these problems; plasma cannot be recommended for initial resuscitation of patients (Haljamae, 1999).

Albumin

Albumin is derived from pooled human blood, serum or plasma and is a natural blood colloid, which is isoelectric, maintains colloid oncotic pressure and is a major transport- protein for drugs, fatty acids, hormones and enzymes. Albumin has anticoagulant properties, which help by inhibiting platelet aggregation and enhance the inhibition of Factor Xa by Antithrombin III. It is not recommended for initial resuscitation because of traumatic induced changes of the capillary permeability and plasma leaks into the extravascular space, thus reducing the plasma supporting capacity of albumin (Haljamae, 1999). When 100ml of a 20% albumin solution is infused, intravascular volume increases by 360ml over 30-60 minutes (Camu, Ivens & Christiaens, 1995).

Hypertonic Solutions (Hs-7.5%, 2,400mosm/Kg)

Small volumes (4-6 ml/kg) of hypertonic saline (HS) have been used with effect for pre-hospital and initial hospital resuscitation of patients in hypovolaemic shock. Studies show that HS increases systemic blood pressure, cardiac output, and peripheral perfusion and survival rates. HS has a vasodilatory effect, and since the volume supporting effect of HS is transient it has to be used in combination with a colloid to maintain haemodynamic stability for some time. Dextran 60 or 70 is often the colloid of choice to be used in combination with HS.

Watson & Taylor (2000) and Pitcher (1998) are of the opinion that crystalloids are the first choice of intravenous solution for hypovolaemia and Haljamae (1999) agrees that crystalloids have a very good effect in resuscitation but insists that a combination of crystalloids and colloids should be used. Haljamae (1999) is of the opinion that the fluid chosen should meet the following therapeutic goals:

- Achievement of normovolaemia and haemodymic stability.
- Correction of major acid-base disturbances.
- Compensation of internal fluid fluxes from the interstitial and intravascular compartments.
- Maintenance of an adequate gradient between plasma colloid osmotic pressure (COP) and pulmonary capillary wedge pressure (PCWP).
- Improvement of microvascular blood flow.
- Prevention of cascade system activation and trauma - induced increase in blood coagulability.
- Normalisation of oxygen delivery to the tissue cells and cell metabolism.
- Prevention of reperfusion type cellular injury.
- Achievement of adequate urine output (Haljamae, 1999)

These goals can be achieved by tissue hydration, plasma volume support, maintenance of COP and oxygen transport (Haljamae, 1996). Both Pitcher (1998) and Haljamae (1999) agree to minimal volume resuscitation prior to surgical haemostasis in adults with penetrating wounds, abdominal trauma, ruptured abdominal aortic aneurysms and so on. Haljamae (1999) is of the opinion that aggressive fluid therapy of patients with penetrating torso injuries increases bleeding volumes, which leads to loss of red cells and coagulation factors. Blood products like frozen dried plasma (FDP) are replaced by artificial colloids because of their greater safety and convenience.

Studies done by Pitcher (1998) have shown an improvement in the survival to discharge for patients resuscitated with HS in the pre-hospital setting. There is evidence of better cerebral oxygenation without elevation of intracranial pressure in patients with head injuries (Pitcher, 1998).The following characteristics of colloids and crystalloids should be considered when choosing the type of fluid to be given:

TABLE 2.1: Characteristics of used for choice of intravenous fluid

Characteristics Of Fluids	**Colloids**	**Crystalloids**
Intravascular persistence	good	poor
Haemodynamic stabilization	prolonged	transient
Required infusion volume	moderate	large
Plasma COP	Maintained with most colloids	reduced
Risk of tissue oedema	insignificant	significant
Capillary perfusion	good	poor
Risk of allergic reactions	low to moderate	non- existent
Cost	relatively expensive	inexpensive

(Haljamae, 1996)

It is important to know the constituents of the intravenous infusion fluid that is being offered to the patient and to consider other pre-existing conditions of the patient besides hypovolaemia or anaemia, for example, diabetes mellitus, so as to give fluids according to the needs and diagnosis of the patient.

Other researchers feel that much advancement has been done to reduce transfusion-transmitted viral diseases, namely: improvement in donor screening and continued surveillance for newly emerging viruses (Silberstein & Toy 2001). In view of the differences in opinions of researchers it is apparent that both blood transfusion and alternative methods can be successfully used depending on the condition and the needs of the patient. A lot of research has been done on alternatives to blood transfusion but the researcher could not find research on attitudes of HCPs towards these alternatives and felt it was necessary to do research on this issue.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the approach and the design that were chosen for this study, the setting where this study was conducted, selection of participants, sampling procedure and how collection of data and analysis of findings were done. This study aimed at exploring the HCP's attitudes towards alternatives to blood transfusion and their perceptions of the use of alternatives to Jehovah's Witnesses in a critical care setting.

3.2 Approach used

"Approach" means the overall strategy adopted to conduct the research project. This was a quantitative study with a questionnaire developed to avoid bias. A quantitative approach also facilitates deductive reasoning, whereby the researcher starts with something about which little is known about so as to further explore the topic (Clifford, Carnwell & Harken, 1997). Comments after each section of the question were accommodated and they were analysed qualitatively.

3.3 Study Design

The "study design" refers to the way research is planned, namely, control of variables, designing instrument for collection of data, data collection process and so on (Carnwell, 1997). Burns and Grove (1987) describe the design as the structural framework for a study. The study design helps by directing the researcher in planning and implementing the study so as to achieve the intended goal (Burns & Grove, 1987). In this study, a non-experimental descriptive and exploratory survey of attitudes to, and perceptions of, critical care nurses

towards the alternatives to blood transfusion was done, resulting in the impression that little was known on the topic because the researcher failed to find literature on it for references (Brink & Wood, 1989; Burns & Grove 1987).

3.4 Population Studied

Burns & Grove, (1987) describe population as all elements/subjects that meet criteria for inclusion in the study. In this study research was done on HCPs working in Critical Care Unit (CCU) for more than 6 months, doing both day and night shifts so that it could be probable that they had used alternatives to blood transfusion and/or nursed a Jehovah's Witness who refused blood transfusion due to religious beliefs.

3.5 Sampling Procedures

Sampling is the process of making the selection of study sample (Burns & Grove, 1987). According to Burns & Grove (1987), a sample is a subset of the population that is selected for a particular investigation, and must be representative of the population. Two public hospitals and two private hospitals were purposively selected for a sample because they have large critical care units with significant numbers of staff that could be reached for the study sample. While random sampling was prepared for the study sample in each setting, it was not possible because the list had to be updated each time the researcher wanted to use it, because of the staff turnover and brain drain in the critical care settings. A convenience sample was eventually used whereby anybody that was on duty and met the criteria was given the questionnaire to fill in.

3.6 Research Setting

Two public and two private hospitals were selected from the Durban metropolitan area because of their size and variations in some in their philosophical approach to health care delivery. The public hospitals were represented by King Edward VIII and Wentworth Hospital while the private hospitals were Entabeni and St Augustine's Hospital.

Public Hospitals

King Edward VIII Hospital

King Edward VIII Hospital has a 16-bedded general ICU, which admits both adult and minor patients. The type of patients admitted were trauma patients who, due to severe loss of blood, could need a blood transfusion, maternity cases who develop placenta abruption (early or premature separation of the placenta) which in turn could lead to severe bleeding, and post caesarean section patient who bleed profusely post operatively.

There were 79 professional nurses plus students. This total was divided into half for day duty and night duty nurses, minus nurses on leave. To this list were added the medical staff which included: 1 Consultant, 1 Registrar and 1 Anaesthetist per shift.

Wentworth hospital OCCU (Cardio surgical CCU)

There were several CCUs in this hospital, namely 6-bedded adult cardiothoracic and neurosurgical units each, 2-bedded paediatric cardiothoracic unit and a four- bedded coronary care unit. The cardiothoracic unit was chosen for the study sample. The staff in the cardiothoracic unit were 11 professional nurses, 4 enrolled nurses, 6 consultants and 8 registrars.

Private Hospitals

Entabeni Hospital

Entabeni Hospital has 6-bedded general and 11-bedded surgical CCUs. The patient profile in these units was trauma, medical, surgical (long stay) trauma, and surgical, (short stay). Staffing was composed of 3 permanent professional nurses per shift in each. This team consisted of 1 overall team leader and 2 overall nurses in charge making a total of three professional nurses with the team leader as overall overseer. The shifts that they worked were: day shift from 0700 to 1900, or night shift from 1900 to 0700.

The medical staff numbers depended on the patient's diagnosis; for example one patient could be seen by more than 1 doctor at a time. A trauma patient could be seen by a surgeon, an orthopod, anaesthetist or neurosurgeon who consulted as specialists. Resident doctors attended to the patients according to which group of doctors the patient belonged to.

St Augustine's Hospital

The trauma CCU was chosen for this study because the cardio-thoracic unit was being renovated at the time of the study. Trauma CCU was 25 bedded. Staffing for day and night duty consisted of 50 professional nurses plus sessional staff, depending on the number of patients in the ward. The unit had one overall nurse in charge of the unit. Doctors came per consultation, and resident doctors consulted patients under their group.

3.7 Data collection procedures

Questionnaires were used as a tool for collecting data from the respondents. Introduction of the researcher was done either in the morning before commencing duties, during tea time or whilst HCP were working, depending on the situation of the different units that were researched. Sometimes introduction of the researcher was done by the unit manager or by the registered nurse in charge of that particular unit, and sometimes by the researcher to the HCP. The study and its purpose were explained to the staff. Respondents were assured of anonymity and confidentiality, which is why they participated voluntarily. Questionnaires were then handed out to the respondents by the researcher and respondents were asked to drop the complete questionnaires in the box that was provided for this purpose.

In other units the charge nurses promised to keep the completed questionnaires in a safe place until the researcher came to collect them and they did. Respondents were then told that the researcher would collect filled questionnaires after two weeks. Most of the CCUs are very busy and respondents had to be given enough time to fill in the questionnaires. A covering letter was attached to the questionnaire explaining the purpose of the study, the researcher's and her supervisor's details and contact numbers, instructions on how to fill in the questionnaires, the institution supporting the study and the amount of time required to complete the questionnaire (Burns & Grove, 1987). (See annexure A). On collection of the completed questionnaires, it was found that some had been returned not filled in, but in one big unit all had been completed fully. The overall return rate was good, because about 90 questionnaires were distributed and 67 completed questionnaires were returned making a return rate of 74%.

3.8 Data collecting instrument

A questionnaire was chosen as a tool for collection of data. Questionnaires are one of the measurement devices used in survey designs to determine facts about subjects or person, beliefs, attitudes, opinions, level of knowledge or intention of the subject (Burns & Grove, 1987). Through questionnaires, respondents can give written responses to questions. The advantage of using this tool is that a large number of people can be reached in a short space of time, more especially if posting questionnaires or handing them out to a group of people. The disadvantage of this method of collecting data is a low response rate, especially if questionnaires are posted. To prevent this problem, questionnaires were delivered and collected from respondents by the researcher. Another disadvantage of this method is that if a respondent is asked about something that she/he does not know, he/she might guess, thus not giving true results (Burns & Grove, 1987). Though questionnaires for this study were close- ended, there was a blank page provided for the respondents to comment on the subject. Not all questions were marked and this threatened the validity of the study, as these could not be included in the data analysis (Burns & Grove, 1987). The questionnaire for this study had three sections to be completed, namely:

- Demographic data of the respondent,
- Knowledge of alternative to blood transfusion and of Jehovah's Witnesses who refused blood transfusion, and lastly
- Attitudes towards alternatives to blood transfusion (See annexe B: Questionnaire).

3.8.1 Demographic data (Section A)

This section asked about the respondents' age, gender, marital status, religious beliefs, duration in a critical care setting and category the respondent belonged to. Age, gender and category were included to confirm the normal pattern of trained HCP who were above 21

years old, mostly female nurses and a few doctors .The question about religion was to find out the religious affiliation of the respondents since people who refused blood transfusion did so because of their religious beliefs. Duration was asked because the criteria for inclusion to the study was that participants should have worked in a Critical Care setting for more than six months to ensure familiarity of the unit and exposure to alternatives given and to people who refuse blood transfusion for religious beliefs.

3.8.2 Knowledge of alternatives to blood transfusion (Section B)

Respondents were asked if they knew alternatives to blood transfusion and if they had used them, so as to determine their knowledge and perception about them. Another question was whether they had nursed a Jehovah's Witness who had refused blood transfusion. This was asked to find out about their perception of alternatives to blood transfusion.

3.8.3 Attitudes towards alternatives to blood transfusion (Section C)

A Likert scale was used to determine the attitudes of the respondents. Statements had boxes below them where they had to tick a box that reflected their views, for example, strongly agree (1), agree (2), uncertain (3), disagree (4) or strongly disagree (5). The bracketed numbers were to be used for coding purposes only.

3.9. Reliability and Validity

Reliability is concerned with how consistent the instrument technique measures the concept being studied while validity is the extent to which the instrument reflects or measures the phenomenon being measured (Burns & Grove, 1987). In this study the researcher intended to conduct a test-retest reliability method. However, due to the difficulty to access the sample in the busy ICUs and rapid staff turnover, the test was abandoned and this became

the limitation of the study as will be discussed under the relevant section for limitations. For validity the instrument was given to a psychologist and senior researchers in the school of nursing including fellow students, to determine the content and convergent validity of the instrument. Corrections had to be made to the tool after the above mentioned people had been consulted for advice. Table 3.1 below illustrates the checklist that was used to determine the content validity.

Table 3.1 Checklist for content validity

Objectives of the study	**Questions measuring the objectives in questionnaire**
Awareness of Jehovah's Witnesses conviction about blood.	**Section A**: Questions: 4, 5 **Section B**: Questions 1, 2, 3, 4.
Pperception of health care professionals regarding alternatives to blood transfusion.	**Section B**: 3, 4, 5, 6
Attitude of health care professionals towards the use of alternative methods to blood transfusion.	**Section C**: 1, 2, 6 7, 8, 9, 10, 11, 12, 13.

3. 10 Ethical Considerations

The rights of the respondents were respected in relation to the following:

- Ethical clearance was secured from the University of Natal Research Ethics Committee of the Faculty of Community and Development, having furnished evidence to observe the ethical issues below (Annexure C).
- Anonymity to protect the rights of the institution or agency where the study was conducted.
- Permission to do the study was granted by the Department of health, superintendents and heads of departments of the different hospitals where the research was done (Annexure D).

- Confidentiality and anonymity of HCPs and the unit involved was maintained through out the study.
- Risks and benefits of research were explained as well as measures to reduce these risks (Burns & Grove 1987). (Annexure A for the explanatory letter to the respondents).
- Protection of subject's rights that participation was voluntary and that they could withdraw at any time was maintained.

CHAPTER 4

DESCRIPTION OF FINDINGS

4.1 INTRODUCTION

A total number of 67 respondents out of 90 (74%) responded to the questionnaire from various Critical Care Units (CCUs). Sixty six percent (44) of the respondents were from 2 public hospital CCUs and 34% (23) were from 2 private hospital CCUs. A computer software package called Statistical Package for Social Sciences (SPSS) version 11.5 was used to analyse quantitative data. Descriptive statistics were used. Comments by the respondents in the questionnaire were also analysed qualitatively and were discussed as themes, which were categorised according to the conceptual framework.

4.2 DEMOGRAPHIC DATA

4.2.1 Age

Most of the respondents, 57% (38), were aged between 31-40 years, respondents in the 21-30 years and 41-50 years category were 18% (12) each and few older ones 51-60 years at 7% (5). This is a normal age trend in most CCUs.

4.2.2. Sex

Ninety one percent (61) respondents were females and 9% (6) were males, which is a normal sex pattern in the nursing community.

4.2.3 Marital Status

Most respondents were unmarried 52% (35), 43% (29) of the respondents were married and only 5% (3) of the respondents were divorced.

4.2.4 Religious Beliefs

Christians formed the largest group of respondents, 76% (51), followed by the Hindu at 12% (8), African at 9% (6) and Islamic religion at 3% (2). This illustrated a normal demographic profile in South Africa. All of the respondents were religiously affiliated, which is common in a South African community.

4.2.5 Experience in Critical Care Setting

Most of the respondents 94%, (63), had been in a critical care setting for more than 12 months, which is probably why most of them had nursed a patient who refused blood transfusion. Three percent (3%) of the respondents had been in CCU for 1-6 months and 3% for 7-12 months.

4.2.6 Category

Ninety four percent of respondents were nurses and there were few doctors 6% (4). Usually there are more nurses than doctors in all units

4.3 Knowledge, attitudes and perception of health care professionals towards blood transfusion alternatives

4.3.1 Nursed a Jehovah's Witness patient before

Most respondents 92% (62) had nursed a Jehovah's Witness patient and only a few 8% (5) had not yet done so but these still responded to the questionnaire probably because some of them had heard of these patients because of their strong and publicly expressed conviction of their religion. These nurses also knew about alternatives to blood transfusion.

4.3.2 Knowledge about alternative to blood transfusion

Ninety five percent (64) of the respondents knew about alternatives to blood transfusion, but some of them (95%) did not know and asked about examples of alternatives from each other before responding to the questionnaire. Five percent (3) admitted that they did not know about alternatives to blood transfusion.

4.3.3 Have used alternatives to blood transfusion before

Most of the respondents 72% (48) had used alternatives to blood transfusion and only 27% (18) had not used them. 1% (1) did not respond to this question. The possibility could be lack of knowledge as to what alternatives to blood transfusion are, since most of the fluid therapy given in CCU is alternative to blood transfusion.

4.3.4 Have used volume expanders as alternatives to blood transfusion

A large number of respondents 88%, (59), had used volume expanders as alternatives to blood transfusion, whilst 11% (7) had not yet used them. Only 1% (1) did not respond to the

question. This response could also mean lack of knowledge as to what volume expanders are, since these are used almost daily with all the patients in CCU.

4.3.5 Hatred towards people who refuse blood transfusion

Most of the respondents 61% (41) were positive towards people who refused blood transfusion, 20% (13) were uncertain about the issue and 16% (11) respondents hated people who refused blood transfusion. Three percent (2) of the respondents did not answer this question.

4.3.6 Have reservations about alternatives to blood transfusion

Nine percent (6) of the respondents strongly agreed to the question about having reservations about alternatives to blood transfusion. Twenty three percent (15) also agreed to have reservations about alternatives, whereas 20% (14) of the respondents were uncertain about this issue. Thirty percent (20) disagreed and 17% (11) strongly disagreed, meaning that they were positive towards alternatives to blood transfusion. Only 1% (1) of the respondents did not respond to this question. The graph on figure 4.1 clearly shows feelings of respondents in regard to this issue.

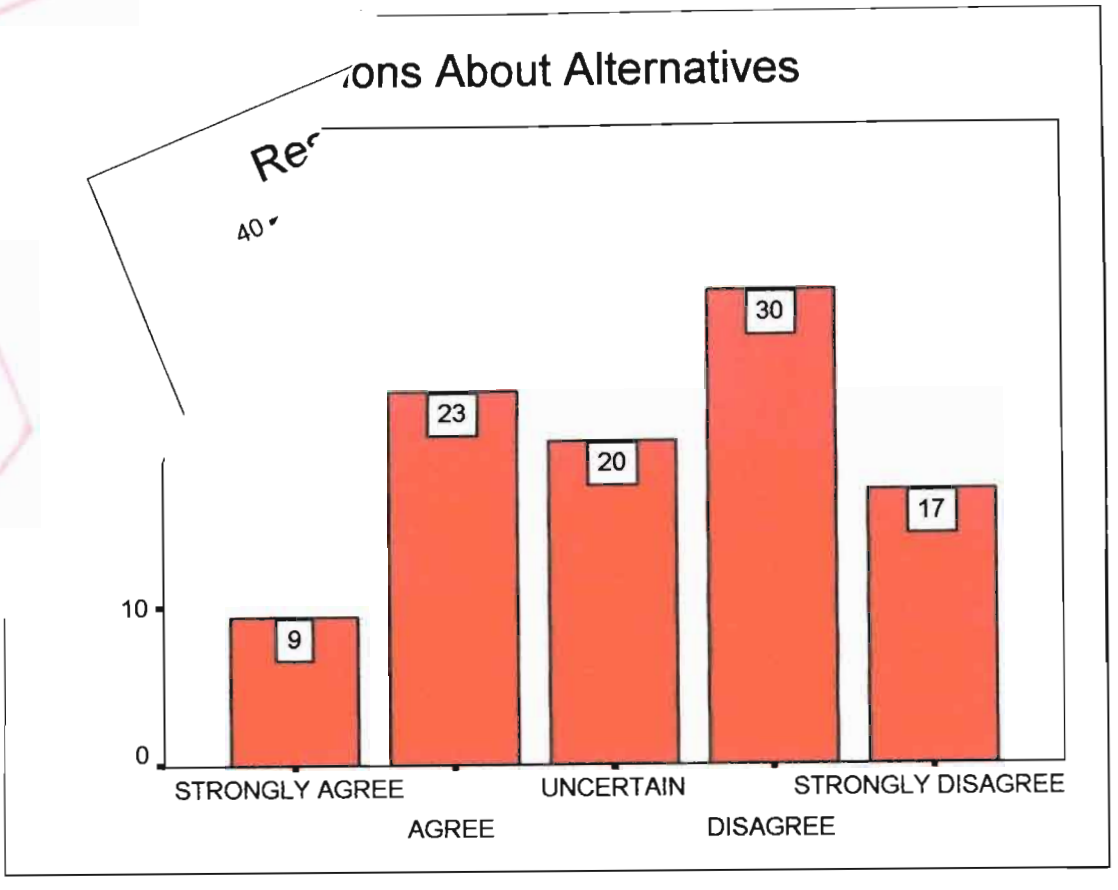

Figure 4.1 Reservations about alternatives to blood transfusion

4.3.7 Alternative Methods to blood transfusion are not effective

Although 15% (10) strongly agreed and 17% (11) agreed that alternatives to blood transfusion are not effective, 25% (17) were uncertain. Twenty eight percent (19) disagreed and 15% (10) strongly disagreed. A significant percent of respondents who were uncertain imply that the individual respondents could not make up their minds one way or another or had mixed feelings about this phenomenon. Fifteen percent (15%) of the respondents strongly agreed and the same percentage strongly disagreed implying that the HCP are equally divided on the effectiveness of the alternatives to blood transfusion. See Figure 4.2 for the graphical presentation of the responses to the question on the effectiveness of alternatives to blood transfusion.

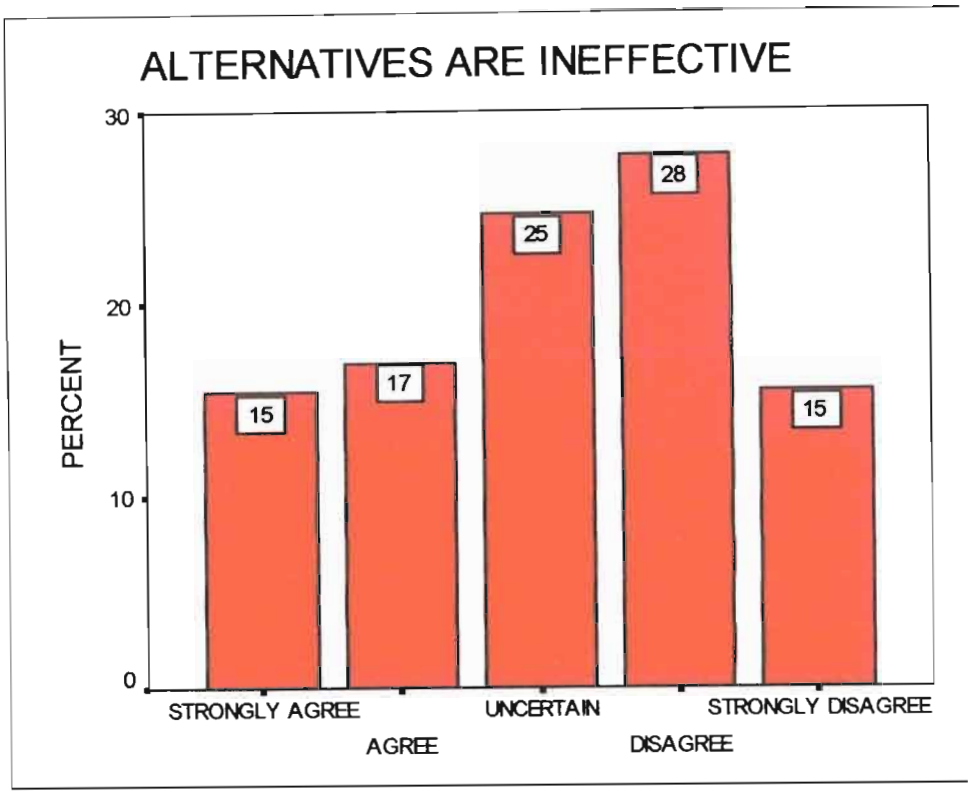

Figure 4.2 Alternatives to blood transfusion are ineffective

4.3.8 Blood transfusion has more benefits than alternatives

Most of the respondents, 67% (45), agreed that blood transfusion had more benefits than alternatives. Eighteen percent (12) disagreed with this statement indicating that blood did not have any more benefits than alternatives, a small percentage 12% (8) were uncertain and only 3% (2) of the respondents did not answer this question.

4.3.9 Alternative methods to blood transfusion take time to act

The majority of respondents, 65% (44), felt that alternatives to blood transfusion took time to act in an emergency. Those who disagreed with this statement were 19% (12). Thirteen percent (9) of the respondents were uncertain and 3% (2) did not respond to this statement.

4.3.10 Blood products are not always safe

A large number of respondents 79% (53) were of the opinion that blood products were not always safe. Nine percent (6) of the respondents disagreed with this statement and 9% (6) were uncertain. Three percent (2) did not respond to this statement.

4.3.11 would advocate for bloodless surgery as an alternative to blood transfusion

Most of the respondents 41% (28) would advocate for bloodless surgery as an alternative to blood transfusion, but a large number of respondents disagreed 34% (23). Twenty percent (13) of the respondents were uncertain and 5% (3) did not respond to this statement.

4.3.12 would seek alternative help if bloodless surgery cannot be provided

Fifty two percent (35) of the respondents would rather seek alternative help if bloodless surgery could not be provided, whereas 25% (17) of the respondents would not do so, 18% (12) were uncertain as to what to do in such a situation and 5% (3) did not answer this question.

4.3.13 Have reservations about using alternative colloids to blood transfusion

Most of the respondents 46% (31) did not have reservations about using alternative colloids to blood transfusion, but 31% (21) of the respondents did have reservations. Eighteen percent (12) were uncertain whether or not to use alternative colloids to blood transfusion, and 5% (3) did not respond to this statement.

4.3.14 Have reservations about using crystalloids as an alternative to blood transfusion

Respondents seemed to have widely divided opinions about this issue since 38% (25) had no reservations about using crystalloids as an alternative and 35% (24) did have reservations whilst 21% (14) of the respondents were uncertain, and 6% (4) did not respond to this statement.

4.3.15 Conservative methods can be successfully used rather than artificial replacement with blood

A large number of the respondents, 65% (43), agreed that conservative methods can be successfully used as an alternative to blood transfusion but 21% (14) disagreed with this statement. Seven percent (5) were uncertain and there was no response from 7% (5) of the respondents.

4.3.16 Rather the patient has erythropoietic drugs than blood transfusion

Most of the respondents 42% (28) disagreed with using erythropoietic drugs rather than blood transfusion, but 33% (22) preferred erythropoietic drugs. Nineteen percent (13) were uncertain and no response from 6% (4) of the respondents.

4.3.17 Would you support research to increase alternatives to blood transfusion?

A large number of the respondents, 41% (27) agreed and 38% (25) strongly agreed to support research to increase alternatives to blood transfusion. Sixteen percent (11) of the respondents were uncertain whether or not to support research. A few 3% (2) of the respondents disagreed and 1% (1) strongly disagreed to support research. This indicates that

most of the respondents are positive to research towards alternatives to blood transfusion. Figure 4.3 illustrates the feelings of respondents in a graph form.

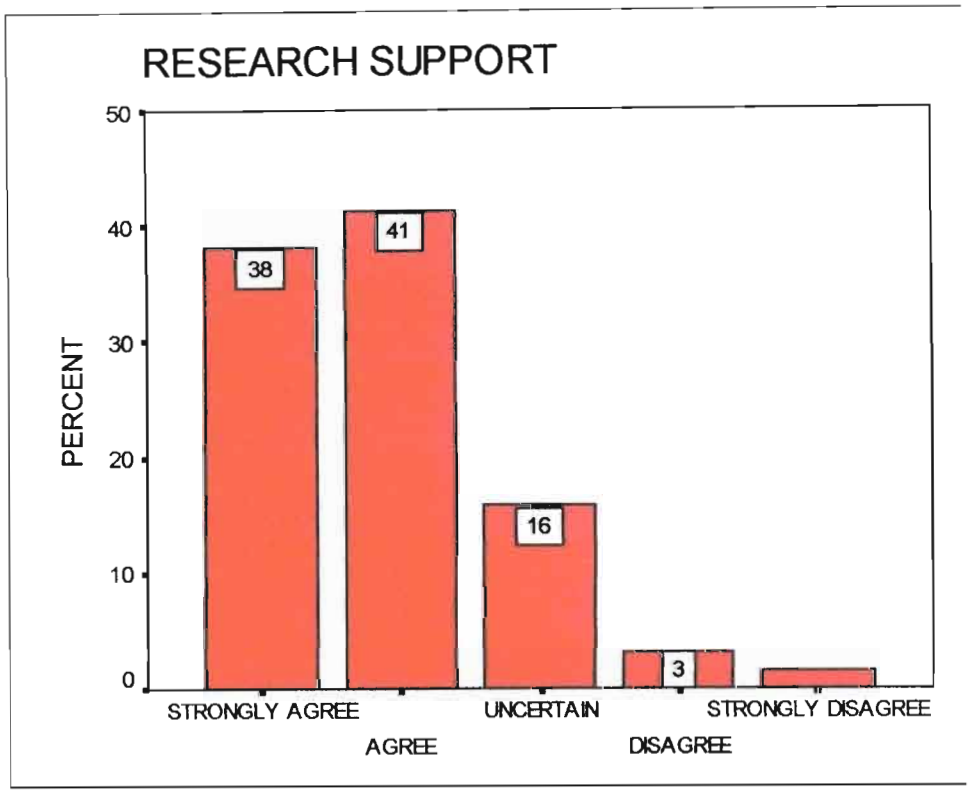

Figure 4.3 Research support into alternatives to blood transfusion

In conclusion, a large majority of the respondents show positive attitudes to use of alternatives to blood transfusion, though a considerable percentage is still uncertain or negative. From these findings it appears as if the respondents who did not know or did not respond to questions about alternatives to blood transfusion, whether fluid, drugs or conservative methods were either not sure of what the alternatives to blood transfusion are or had not been exposed to such alternatives.

4.4 Qualitative analysis, categories and their themes

The comments that accompanied the questions in the questionnaire were analysed qualitatively into themes which were further categorised according to the steps of the conceptual frameworks, namely cultural awareness, cultural knowledge, cultural sensitivity and cultural competence.

4.4.1 Category one: Cultural awareness

In this category personal values and beliefs are examined. Cultural identity and its influence on people's health beliefs and practices are the first area to examine so as to develop cultural awareness. Religion is part of culture and influences people's perception of illness and health.

4.4.1.1 Theme 1: Previous experience.

Respondents had their own religious affiliation and were aware that Jehovah's Witnesses refusal of blood transfusion was due to religious beliefs. One of the respondents commented "*There are patients who survive after using alternatives to blood transfusion though it took time. Religious beliefs had an impact on the patient's decision*".

Since respondents knew and had used alternatives to blood transfusion before, they had their own views about the effectiveness of alternatives to blood transfusion. Two of the respondents commented that from experience they knew that some blood alternatives were ineffective but cited different reasons "*Colloids and crystalloids are not effective, I nursed a patient who took a long time to recover*" commented one respondent and another one said " *Blood alternatives are not working, most patients die if given alternatives and not blood* ".

4.4.2 Category two: Cultural knowledge

This category deals with knowledge of different cultures, which can be gained during assessment phase and by developing good relationships with the patient, their relatives and friends. From discussions HCPs can get to know about the patients' health related beliefs. Some HCPs even read literature of different religious denominations so as to understand their patient's health related beliefs well.

4.4.2.1 Theme 1: Circumstances for use of alternatives

From the respondents comments it was deduced that they knew that Jehovah's Witnesses refusal of blood and decision to opt for alternatives was due to their religious beliefs. One respondent pointed out that "*Besides religious beliefs, I strongly believe that blood transfusion is too risky, looking at the* escalating *rate of HIV/ AIDS. People must be made aware of alternatives*" and another one commented "*there are patients who survive after using alternative...religious beliefs had an impact on the patients' decision*".

Responses indicate that even though respondents knew about the decision to choose alternatives to blood transfusion, they had their own views regarding the effectiveness of blood and its alternatives. Four of the respondents commented that blood products had a faster effect in an emergency: "*Blood transfusion is good in an emergency although it is not always safe*" commented one respondent and another one said "*Colloids are not effective. In cases of emergency, blood transfusion is of vital importance*".

4.4.2.2 Theme 2: Choice of alternatives depends on the patient's condition

It was also evident that respondents considered the patient's condition as a determinant when considering the choice of treatment to be given. One of the respondents commented

that whether or not to give alternatives *"depends on the patient's condition and whatever alternative method is being used*". Another respondent commented "*If alternatives like erythropoietin, bloodless surgery, crystalloids had an immediate effect I would definitely go for that, because I do not believe in another man's blood in my body*".

4.4.2.3 Theme: 3 Fear of transfusion transmitted diseases

From the respondents comments it was apparent that they were more concerned about transfusion- transmitted diseases, especially HIV and Hepatitis, than anything about blood transfusion. This fear would prompt most of them to opt for alternatives as one of them stated "*I don't think blood is safe, there is the window period, donors lie about their history, people have been known to be retroviral positive post blood transfusion*". Another respondent felt that "*Blood is precious, but a transfusion is very dangerous, I would not have a blood transfusion by choice, not with all the dangers involved, rather an alternative method*".

4.4.3 Category three: Cultural Sensitivity

This is how health care professionals view patients that are in their care. Patients should be viewed as partners, involving equal partnership, trust, respect, acceptance, facilitation and negotiation.

4.4.3.1 Theme 1: Patients Rights

Though respondents were not asked about the patient's rights, eight respondents commented that the patient's right to choose treatment must be respected by HCPs. Patients have a right to decide whether or not to accept treatment. HCPs must inform the patients about options available, including alternatives to blood transfusion. HCPs had differing views concerning

the use of alternatives to blood transfusion. One of them commented as follows, "*Patients have a right to refuse treatment, even though it is medically proven that they may benefit from such treatment, e.g. a cancer patient can refuse chemotherapy*".

4.4.3.2 Theme 2: Encouragement to choose alternatives to blood transfusion

Six of the respondents felt that those patients who refused blood transfusion should be encouraged to opt for alternatives to blood transfusion. Two of the respondents commented that they would encourage people who refuse blood transfusion to choose auto-transfusion as an alternative. One of the respondents commented "*people should be encouraged to opt for auto- transfusion as another option to blood transfusion*". Another respondent also stated "*as a patient advocate, I would be glad if measures were taken to promote bloodless surgery and auto- transfusion to prevent spread of infection*".

4.4.3.3 Theme 3: Fear of receiving someone else's blood

Three of the respondents commented that they would not like to be transfused with somebody else's blood but would accept blood from a relative or opt for an alternative. One of the respondents commented "*If alternatives like erythropoietics, bloodless surgery, crystalloids, had an immediate effect, I would definitely go for that, because I do not believe in another man's blood in my body*". Another commented "*have some reservations about blood transfusion. If having a life threatening disease, I would accept blood transfusion from a family member only*".

4.4.4 Category: Cultural Competence

In this category the previously gained awareness, knowledge and sensitivity will be applied. HCPs will apply the knowledge about their patient's health- related beliefs that they have gained during their encounters with patients, their relatives and friends.

4.4.4.1 Theme 1: Research support towards alternatives to blood transfusion

Most of the respondents supported research into alternative methods to blood transfusion. One of the respondents even suggested, *"Please continue with this project, we need to know more about it, it's very interesting"*.

4.4.4.2 Theme 2: Positive attitude towards alternatives to blood transfusion

To indicate a positive attitude towards alternatives, one of the respondents commented, "*At the present time blood transfusion remains the gold standard for correction of severe acute anaemia. However, the shrinking donor pool and hazards of transfusion warrant research into suitable alternatives*".

In conclusion most respondents feel positive towards use of alternatives to blood transfusion though the place of blood transfusion is indisputable in an emergency. Use of alternative methods to blood transfusion is even more supported now but it seems this support is accentuated by fear of blood transmitted diseases like HIV/AIDS.

CHAPTER 5

CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

5.1 Introduction

The objectives of this study, which were to investigate HCPs' perception about the use of alternatives to blood transfusion for Jehovah's Witnesses in CCU and to determine their attitude towards the use of alternative methods to blood transfusion, will be considered when discussing the findings of the study. The discussion of findings in this chapter will be based on the categories of the conceptual framework and the themes that were extracted from the respondents as discussed in chapter four.

5.2 Cultural Awareness

Most respondents were Christians and had to examine their own cultural identity because of their religious affiliation, since religion is a component of culture. This would help them to be culturally competent and be able to accommodate patients from different cultures. All religions address the issue of illness and wellness and each religion has a different significance in relation to health matters (Andrew & Boyle, 1999). HCPs should remember not to impose their religious beliefs on to patients (Andrew & Boyle, 1999). One theme emerged from the category of cultural awareness and that was previous experience with patients who refused blood transfusion.

5.2.1 Previous Experience with blood transfusion refusal

Most of the respondents, 92% (62), had nursed a Jehovah's Witnesses patient and were aware that their refusal of blood transfusion was due to their religious beliefs. Although

16% (11) of the respondents had not come to terms with patients who refused blood transfusion, most of the respondents 61% (41) were positive towards people who refused blood transfusion. Twenty percent (13) were uncertain, and some of the respondents, 3% (2), did not respond to the question about their attitude to people who refused blood transfusion. Two of the respondents had bad experiences judging from their comments about patients who refused blood and had died. They were therefore of the opinion that alternatives to blood transfusion were ineffective. One of the respondents, however, had nursed patients who survived after using alternatives. Stockwell, Soni, & Riley (1992) did a study on patients in CCU who were given either albumin, which is a natural blood colloid, or a synthetic colloid (haemaccel). This study revealed that there was no significant difference in length of stay between the two groups and in patient outcome.

5.3 Cultural Knowledge

In this category, respondent's knowledge of different cultures is ascertained, which in this study was knowledge about Jehovah's Witnesses who refuse blood transfusion due to their religious beliefs. Respondents were not asked if they had spoken to the patient's relatives, friends or read literature about their reasons for refusal of blood transfusion. Three themes emerged from this category of the framework, namely, circumstances for use of alternatives to blood transfusion, choice of alternatives depending on the patient's condition, and fear of transfusion- transmitted diseases.

5.3.1 Circumstances for use of alternatives to blood transfusion

Respondents knew that Jehovah's Witnesses (J.W.s) refused blood transfusion but accepted alternatives and some of the respondents even recommended alternatives like auto-transfusion to be used for such patients. Most of the respondents, 67% (45), were of the

opinion that blood had more benefits than alternatives. Although 42% (28) felt that alternative methods to blood transfusion were effective, an equally large number of respondents, 31% (21), felt that alternatives were not effective. Uncertainty was noted in 24% (16) of the respondents. This response showed that HCPs could not decide either way about effectiveness of alternatives to blood transfusion. Watson and Pitcher (1998) are of the opinion that crystalloids are the first choice of intravenous solutions for hypovolaemia and Haljamae (1996) agreed that crystalloids had a very good effect in resuscitation but insisted that a combination of crystalloids and colloids was essential for initial resuscitation.

Concerning knowledge of alternatives to blood transfusion, 95% (64) of the respondents knew about them. Some of them asked about examples of alternatives from each other before responding to the questionnaire. Although 72% (48) of the respondents agreed that they had used alternatives to blood transfusion before, 27% (18) had not used them. One percent (1) did not respond. It is, however, surprising to have such a big percentage that had not used alternatives to blood transfusion and 5% (3) that did not know about alternatives, as well as 11% (7) that had not used volume expanders as alternatives to blood transfusion, because such fluids are used routinely in Critical Care Units. The possibility could be lack of knowledge as to what alternatives to blood transfusion were. Malyon (1998) made the same observation that, while alternatives to blood existed and were available, lack of knowledge about them prohibited many practitioners from useful application of them.

5.3.2 Choice of alternative depends on the patient's condition

Muckart and Bhagwanjee (2000) suggested that the patient's management should be individualised and replacement of blood loss given as per individual patient and according to the severity and anatomical position of the insult. These authors also agree with the

Advanced Trauma Life Support (ATLS) resuscitation protocol which estimates fluid and blood loss according to the patients' initial presentation using parameters like pulse rate, blood pressure, respiratory rate, urine output and mental status. Haljamae (1999) had the same opinion and suggested that patients had to be assessed individually, bearing in mind other risks like chronic illnesses, age, amount of fluid and blood loss and general condition of the patient. Other factors to be considered when deciding on the type of alternative to choose are: time lapse between injury and initiation of treatment, pre - hospital therapy and medication used for chronic diseases (ATLS, 1997). Response to initial therapy, rather than reliance only on the initial classification according to signs and pathophysiology of the shock state, should be considered when replacing volume (ATLS, 1997).

5.3.3 Fear of transfusion - transmitted diseases

Most of the respondents, 79% (53), were of the opinion that blood products were not always safe. Of these respondents, 9% (6) did not think that blood products were not always safe and the same percentage and number of respondents were uncertain. Three percent (2) did not respond to this question. Respondents who commented about this issue were more concerned about diseases that could be transmitted during blood transfusion especially HIV/ AIDS and Hepatitis than religion. Respondents did, however, point out that blood was precious. Studies show that viral transmission still occurs even though donated blood is tested for infection (O'Shaughnessy, 2002). High standards are maintained, however, to ensure safety of blood and blood transfusion but the immuno-silent "Window period" may be longer in certain individuals (SANBS, 2001).

5.4 Cultural Sensitivity

This deals with how HCPs view patients in their care. Equal partnership, trust, respect, acceptance, facilitation and negotiation should be built between HCPs and the patients (Papadopoulos, Tilki & Taylor, 1998). This sensitivity implies that HCPs should offer options to blood transfusion to the patients or relatives and they must negotiate together and come to a conclusion as to which alternatives are suitable for a particular patient. Themes that emerged from cultural sensitivity as a category were patients' rights to choose, encouragement to choose alternatives to blood transfusion, and fear to receive someone else's blood.

5.4.1 Patient's Rights

Though the respondents were not asked about the patients' right in relation to refusal of blood transfusion and preference of alternatives, they commented that patients had a right to decide whether or not to accept certain treatment. According to the South African Constitution, discrimination of religion, culture or belief is prohibited (S.A. Constitution, 1996). Jehovah's Witnesses carry with them medical directive cards with advanced directives stating their refusal of blood and blood products and acceptance of non-blood alternatives. "Advanced directives promote recognition of the patient's autonomy, letting the individual exercise a certain measure of control over life-sustaining care and treatment in the eventuality of becoming incompetent" (Blondeau, Valois, Keyserlingk, Hebert, Lavoie, 1998, p1).

5.4.2 Encouragement to choose alternatives to blood transfusion

Respondents, whose comments about alternatives to blood transfusion revealed that they knew about different alternatives, encouraged people who refused blood transfusion to opt

for alternatives. Responses to questions about whether respondents had reservations towards alternatives to blood transfusion showed that respondents had widely distributed feelings because although 44% (30) of the respondents were positive towards alternatives to blood transfusion, 32% (21) had reservations, 20% (13) showed uncertainty and 4% (3) did not respond. Similar uncertainty was deduced from responses to the effectiveness of alternatives to blood transfusion, as was discussed previously under circumstances for use of alternatives to blood transfusion. Concerning bloodless surgery, 41% (28) of the respondents had a positive response whilst 36% (23) would not advocate bloodless surgery, 20% (13) were uncertain and there was no response from 5% (3). The percentage of those who supported bloodless surgery was higher than those who did not support it but lower in relation to the total percentage of the respondents.

The possibility could be that some of those who did not support bloodless surgery and those who were uncertain as well as those who did not respond had not been exposed to this procedure since one of the respondents did ask the researcher how such a procedure was performed. Concerning Jehovah's Witnesses' refusal of blood, and acceptance of alternatives, one magazine stated, "The Jehovah's Witnesses' rigorous stand has been a major force behind safer medical treatment becoming available to all" (Watchtower Bible and Tract Society, 2000, p 11). There are institutions that treat all types of patients who choose bloodless surgery, such as all NETCARE Hospitals (Http://www.netcare.co.za/html/services/blood-consrev.htm: Blood conservation – products and services, 2002).

5.4.3 Fear of receiving someone else's blood

From respondents' comments, it was evident that some of them did not want to be transfused with somebody else's blood, but, if their lives were threatened, some would choose blood transfusion from a relatives' blood and some would prefer alternatives that could save their lives.

5.5 Cultural competence

In this category HCPs apply their previously gained awareness, knowledge and sensitivity. HCP apply the knowledge about their patient's health - related beliefs that they have gained during their encounters with the patients, their relatives and friends. Themes that emerged from this category were positive attitudes towards alternatives to blood transfusion, and support for research into alternatives to blood transfusion.

5.5.1 Positive attitude towards alternatives to blood transfusion

Ninety five percent (64) of the respondents knew about alternatives to blood transfusion and 44% (30) of the respondents were positive towards alternatives to blood transfusion. Only 5% (3) did not know about alternatives to blood transfusion, 32% (21) had some reservations about alternatives to blood transfusion and 20% (13) were uncertain. The fact that 27% (18) of the respondents stated that they had not used alternatives to blood transfusion and 11% (7) indicated that they had not used volume expanders as alternatives to blood transfusion is an indication that possibly some of the respondents do not know what alternatives to blood transfusion are, since such fluids are used routinely in all CCUs Although most of the respondents, 61% (41), had a positive attitude towards people who refused blood transfusion, 20% (13) were uncertain. Sixteen percent (11) hated people who refused blood transfusion and 3% (2) preferred not to respond. Possibly these respondents

have not come to terms with the religious beliefs of Jehovah's Witnesses, do not know these beliefs or do not know alternatives to blood transfusion. Andrew & Boyle, (1999) suggest that to be culturally competent, one (in this case the HCP) has to learn attitudes, beliefs, values and behaviour by first doing self assessment to overcome ethnocentric tendencies as well as cultural stereotypes that perpetuate discrimination against other group members.

5.5.2 Research support towards alternatives to blood transfusion

Research into alternatives to blood transfusion was supported by 75% (50) of the respondents. Only a few respondents 4% (3) did not support research. Fifteen percent (10) were uncertain and, 6% (4) of the respondents did not respond to this statement. Apparently respondents would like research into suitable alternatives because of fear of transfusion - transmitted diseases or because they feel that the alternatives presently being used are ineffective or do not meet patients' needs.

5.6 Recommendations for the future

5.6.1 Recommendations for HCP working in CCU

HCPs should build and maintain good relationships with all types of patients, irrespective of colour, creed or religion, as they state when making their professional vows. This relationship will promote good communication between the two parties and resultant trust. HCPs could even discuss with the patient his/her convictions or read literature on their health - related beliefs. Cultural competence can be gained by HCP during their encounters with patients or their relatives, during admission, assessment and hospital stay. HCP can then offer alternative options to patients who refuse blood transfusion and come to a conclusion as to which alternative is best suitable for that particular patient. All nurses should take interest in learning about alternatives to blood transfusion and their effects so

that they know which one to offer should the need arise, according to the unit's standing orders. HCPs should not label patients as being "non-compliant" (Andrew & Boyle, 1999). Andrew & Boyle, (1991) give HCPs guidelines which they can use to assess patients' spiritual needs. HCPs should understand their own and others' cultural beliefs and attitudes and put them aside (bracket them).

5.6.2 Recommendations for nurse educators

Nurse educators should be made aware of the lack of cultural competence in some of the HCPs and they must not only stress cultural nursing but also multi-cultural nursing so that HCPs are more accommodating to all the diverse cultural health beliefs. In this study it was evident that some of the respondents did not know what alternatives to blood transfusion were, although these types of fluids, and even drugs, were used routinely in CCU. Perhaps nurse educators should encourage informal education, or in-service education, about newly introduced alternatives to blood transfusion to nurses, especially those working in CCU. HCPs use these alternatives routinely but do not know them, as alternatives, the educational approach could be the solution. Students should perhaps be encouraged to reflect on their activities, routine work etc. rather than be taught formally.

5.6.3 Recommendations for nursing management

Ward managers, especially CCU managers, should encourage and provide opportunities for in - service education on alternatives to blood transfusion, as it was apparent that some respondents did not know them. The hospital management should invite liaison committee members for Jehovah's Witnesses to explain to HCPs about the religious convictions of the Jehovah's Witnesses, including the need to consider alternatives to blood transfusion for this religious group, or any other patient who chooses them, and answer any questions that

available for use. Perhaps these negative attitudes have something to do with stress, since working in CCU is stressful owing to the work load HCPs are faced with.

5.7 Limitations of the study

The researcher was conducting research in different CCUs from each hospital, for example, 3 to 4 units in each hospital, and respondents were from a total of 4 hospitals. The researcher had the problem of meeting new nurses most of the time when collecting questionnaires after 2 to 3 weeks. Some of the reasons for meeting new faces every visit was: nurses were going overseas, changing hospitals, changing off duties, leave etc. Sometimes the researcher would find that units had been closed, and nurses moved to another unit or hospital, since the research coincided with the opening of one of the largest and most modern hospital in KwaZulu-Natal province. This affected most of the surrounding hospitals in the Durban Metropolitan area. In one of the private hospitals the researcher met the same problem of units closing down, and over and above that staff was too busy to respond immediately while the researcher was waiting. Each time when the researcher came to collect the questionnaires, these were either not filled in or it was not even known where they were. It was very difficult for the researcher to do test- retest, as was proposed, because of the aforementioned limitations. A lot of time and money was involved in transport and printing questionnaires during this research. The map in Figure 5.1.shows distances between the 4 hospitals where research was conducted.

Conclusion

From the respondents' responses and comments it was evident that most of the respondents had a positive attitude towards people who refused blood transfusion, and most of them had used alternatives to blood transfusion. Some of the respondents did not know what

alternatives to blood transfusion were. Furthermore the study revealed widely distributed feelings of respondents about using alternatives to blood transfusion, which is probably why some respondents hated people who refused blood transfusion and chose of alternatives. This could be an indication of cultural incompetence.

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ANNEXURE A: EXPLANATORY LETTER TO RESPONDENTS

Dear respondent,

I am a Master's student doing critical care and trauma at the University of Natal Durban. I am doing research on the attitudes and perceptions of health care professionals towards alternative methods to blood transfusion. You are asked to complete this questionnaire, which comprises of three sections namely; sections ABC. Confidentiality and anonymity will be maintained at all times. Information gathered would be used for research purposes only. You are asked not to write your name on the questionnaire. You have a right to withdraw at any time, should you feel like doing so. Your comments are welcome and can be written at the last blank page provided.

Thank you.

Yours sincerely,

V.Y.Mjoli

Contact no.0843015692

B.R. Bhengu (supervisor)

Phone 031-2601134 (w)

ANNEXURE B: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC DATA

INSTRUCTIONS: Please mark your response with a cross (X) in the appropriate box.

1. Age

21-30 years		1
31-40 years		2
41-50 years		3
51-60 years		4
Above 60 years		5

2. Gender

Female		1
Male		2

3. Marital status

Single		1
Married		2
Divorced		3
Widowed		4
Separated		5
Cohabitation		6

4. Religious beliefs

Christian		1
African		2
Islamic		3
Hindi		4
Judaism		5
Other specify		6

5. How long have you worked in a critical care setting?

1-6 months		1
7-12 months		2
Above 12 months		3

6. Which category best describes your profession?

Nurse		1
Medical Doctor		2
Physiotherapist		3
Emergency personnel		4
Other		5

SECTION B

Choose your response by making a cross (x) in the appropriate box e.g. Do you want to further your studies?

Yes		1
No	X	2

1. Have you nursed a Jehovah's Witness patient who refused a blood transfusion before?

Yes		1
No		2

2. I know there are alternatives to blood transfusion.

Yes		1
No		2

3. I have used alternatives to blood transfusion before.

Yes		1
No		2

4. I have used volume expanders e.g. crystalloids and colloids as alternatives to blood transfusion.

Yes		1
No		2

SECTION C

CHOOSE YOUR RESPONSE BY MAKING A CROSS (X) IN THE APPR0PRIATE BOX BELOW EACH STATEMENT

People have different attitudes towards the use of alternative methods to blood transfusion in an emergency, which of the following statements best represents your point of view where SA means Strongly Agree (1), A-Agree (2), U-Uncertain (3), D-Disagree (4), and SD-Strongly disagree (5).

1. I hate people who refuse a blood transfusion when it is needed

SA	A	U	D	SD
☐	☐	☐	☐	☐

2. I have reservations about alternatives to a blood transfusion

SA	A	U	D	SD
☐	☐	☐	☐	☐

3. Alternative methods to blood transfusion are not effective

SA	A	U	D	SD
☐	☐	☐	☐	☐

4. Blood transfusion has more immediate benefits than alternative methods

SA	A	U	D	SD
☐	☐	☐	☐	☐

5. Alternative methods to blood transfusion take time to act in an emergency

SA	A	U	D	SD
☐	☐	☐	☐	☐

6. Blood products are not always safe

SA	A	U	D	SD
☐	☐	☐	☐	☐

7. I would advocate for bloodless surgery as an alternative to blood transfusion

SA	A	U	D	SD
☐	☐	☐	☐	☐

8. I would rather have the patient seek alternative help if I cannot provide bloodless surgery

SA	A	U	D	SD
☐	☐	☐	☐	☐

9. I have reservations about using colloids as an alternative to blood transfusion

SA	A	U	D	SD
☐	☐	☐	☐	☐

10. I have reservations about using crystalloids as an alternative to blood transfusion

SA	A	U	D	SD
☐	☐	☐	☐	☐

11. I believe that conservation methods e.g. arresting of haemorrhage, auto transfusion etc. can be successfully used rather than artificial replacement with blood

SA	A	U	D	SD
☐	☐	☐	☐	☐

12. I would rather the patient have erythropoietic drugs than blood transfusion

SA	A	U	D	SD
☐	☐	☐	☐	☐

13. I would support research to increase alternatives to blood transfusion

SA	A	U	D	SD
☐	☐	☐	☐	☐

COMMENTS

ANNEXURE C: ETHICS CLEARANCE

UNIVERSITY OF NATAL
DURBAN CAMPUS

Faculty of Community & Development Disciplines

University of Natal Durban 4041 South Africa

Telephone: Faculty Offices +27 (0)31 260 3271
Student Records +27 (0)31 260 2685
Admissions Offices +27 (0)31 260 1201/2094
Facsimile: +27 (0)31 260 2458
e-mail: khanyid@mtb.und.ac.za

RESEARCH ETHICS COMMITTEE

Student: VUYISWA YVONNE MJOLI

Research Title: THE ATTITUDES AND PERCEPTIONS OF HEALTH CARE PROFESSIONALS TOWARDS ALTERNATIVES TO BLOOD TRANSFUSION: A CASE WITH JEHOVAH'S WITNESSES PATIENTS IN A CRITICAL CARE SETTING

A. The proposal meets the professional code of ethics of the Researcher:

(YES) NO

B. The proposal also meets the following ethical requirements:

	YES	NO
1. Provision has been made to obtain informed consent of the participants.	✓	
2. Potential psychological and physical risks have been considered and minimised.	✓	
3. Provision has been made to avoid undue intrusion with regard to participants and community.	✓	
4. Rights of participants will be safe-guarded in relation to:		
4.1 Measures for the protection of anonymity and the maintenance of confidentiality.	✓	
4.2 Access to research information and findings.	✓	
4.3 Termination of involvement without compromise.	✓	
4.4 Misleading promises regarding benefits of the research.	✓	

Signature of Student: VYMjoli Date: 04:12:02

Signature of Supervisor: [signature] Date: 04·12·02

Signature of Head of School: [signature] Date: 04-12-2002

Signature of Chairperson of the Committee: [signature] Date: 5/12/2002

ANNEXURE D: APPLICATION FOR PERMISSION

University of Natal

Durban.
23 05 03

The Matron
Entabeni Hospital,
P.O.Box 2230,
Durban.

Dear Madam,

Re: **Application for permission to do research**
I am a Master's student doing critical care and trauma through the Natal University.
At present I am doing a proposal entitled: the attitudes and perceptions of health care professionals towards alternatives to blood transfusion in a critical care setting. If permission is granted I will need time to introduce myself and my research topic to staff members (doctors and professional nurses) which can take less than thirty (30) minutes. I will then leave questionnaires with them to be collected after three to four days. I will not need hospital equipment or finance. Enclosed are: an ethics clearance form, short proposal and the questionnaire.

Yours sincerely,
Vuyiswa Yvonne Mjoli

ANNEXURE: E PERMISSION LETTERS

PROVINCE OF
KWAZULU-NATAL
HEALTH SERVICES

ISIFUNDAZWE
SAKWAZULU-NATALI
EZEMPILO

PROVINSIE
KWAZULU-NATAL
GESONDHEIDDIENSTE

NATALIA
330 LONGMARKETSTREET
PIETERMARITZBURG

TEL. 033-3952111
FAX 033-3426744

Private Bag :X9051
Isikhwama Seposi : Pietermaritzburg
Privaatsak : 3200

REFERENCE : 9/2/3/R – Vol.6
ENQUIRIES : Mr G. Tromp
EXTENSION : 2761

06 JAN 2003

Ms V. Y. Mjoli
School of Nursing
Faculty of Community and Development Disciplines
University Of Natal
DURBAN
4041

Dear Madam

REQUEST TO CONDUCT A RESEARCH T AT WENTWORTH AND KING EDWARD VIII HOSPITALS

Your letter dated 11 December 2002 refers.

Please be advised that authority is granted for you to conduct a research at Wentworth and King Edward VIII hospitals provided that:

(a) Prior approval is obtained from Heads of relevant Institutions;

(b) Confidentiality is maintained;

(c) The Department is acknowledged; and

(d) The Department receives a copy of the report on completion.

Yours sincerely

08/01/03

SUPERINTEDENT-GENERAL
HEAD : DEPARTMENT OF HEALTH
NNM/Jehovas witness-mjoli

PROVINCE OF
KWAZULU-NATAL

ISIFUNDAZWE
SAKWAZULU-NATAL

PROVINSIE
KWAZULU-NATAL

KING EDWARD VIII HOSPITAL

(Recipient of the Premier's & PWC Good Governance Awards 2001)

Postal Address: Private Bag , Dalbridge , 4014. • Telephone: 031 3603853 • Fax: 031 2061457 •

Enquiries: Mr. A.J Seekola
Reference: KE 2/7/1 **(11/2003)**
Research Programming
18 March 2003

Vuyiswa Y Mjoli
School of Nursing
Faculty of Community & Development Disciplines
NRM Medical School
DURBAN
4000

Application for research at King Edward VIII Hospital
Protocol: The attitudes and perceptions of health care professionals toward alternatives to blood transfusion: A case with Jehovah's Witnesses.

Your application received on the 10 March 2003 is approved.

Please ensure that King Edward VIII Hospital receives full acknowledgement in the study on all publications and reports and also kindly present a copy of the publication or report on completion.

Please sign an Indemnity Form at Room 8, Admin Block before commencement.

The Management of King Edward VIII Hospital reserves the right to terminate the permission for the study should circumstances so dictate.

Yours Sincerely

Dr ZN Kharva
Acting Hospital Manager.

PROVINCE KWAZULU NATAL
HEALTH SERVICES

ISIFUNDAZWE SAKWAZULU-NATALI
EZEMPILO

PROVINSIEKWAZULU-NATAL
GESONDHEIDSDIENSTE

100% ACCREDITATION BY COHSASA

DEPARTMENT OF HEALTH
WENTWORTH HOSPITAL
Private Bag, Jacobs 4026

ENQUIRIES: DR. JANOWSKI **18TH MARCH 2003**
TELEPHONE: 031-4605006 **FAX NO. : 031-4689654**

MS. V.Y. MJOLI
SCHOOL OF NURSING
FACULTY OF COMMUNITY AND
DEVELOPMENT DISCIPLINES
UNIVERSITY OF NATAL
DURBAN 4041

Dear Ms. Mjoli,

RE: **APPLICATION FOR PERMISSION TO DO RESEARCH**

1. Your letter dated 26/02/2003 refers.

2. Please be advised that your request is supported in principle for you to conduct a research at Wentworth Hospital provided that you submit to the Hospital Manager the following:-

   (a) A statement from yourself indicating the implications to the hospital, in terms of staff involvement, financial cost, use of equipment if any. b. staff - how much time - PTO

   (b) Time-table specific to Wentworth Hospital.

3. Kindly contact our Public Relations Officer, Mr. Mthembu, Telephone Number 031-460 5063 to finalize your research at Wentworth Hospital.

Yours sincerely

DR. B.H. JANOWSKI
MEDICAL MANAGER
WENTWORTH HOSPITAL

cc. Mr. Mthembu : Public Relations Officer : Wentworth Hospital

ENTABENI HOSPITAL

Member of Afrox Healthcare Limited

Entabeni Hospital
148 South Ridge Road
Durban 4001
P O Box 2230
Durban 4000

Telephone 031 204-1300
Facsimile 031 261-6435

Sr V Y Mjoli
School of Nursing
Faculty of Community and Development Disciplines
University of natal
Durban
4001

9 June 2003

Dear Sr Mjoli

RE: Application for permission to do research

This letter serves to confirm that permission is granted for you to do research at Entabeni Hospital.

I would be very interested in seeing the outcome of your research project.

Yours sincerely

Mrs A Williamson
Nursing Manager

Entabeni Hospital Limited
Reg No 1929/001783/06
Trading as Entabeni Hospital
Member of Afrox Healthcare
Directors GG Rex SP Taylor DR Archibald CJPG Van Zyl

St Augustine's Hospital

107 Chelmsford Road, Durban • PO Box 30105 Mayville, 4058
Tel +27(0)31 268-5000 • Fax +27(0)31 201-4606
Web address: www.netcare.co.za
P.R. No. 5802562

4th June 2003

Vuyiswa Yvonne Mjoli
C/o B.R. BHengu
University Of Natal (Durban Campus)
School of Nursing
Faculty of Community and Development Disciplines
DURBAN
4001

Dear Sr Mjoli

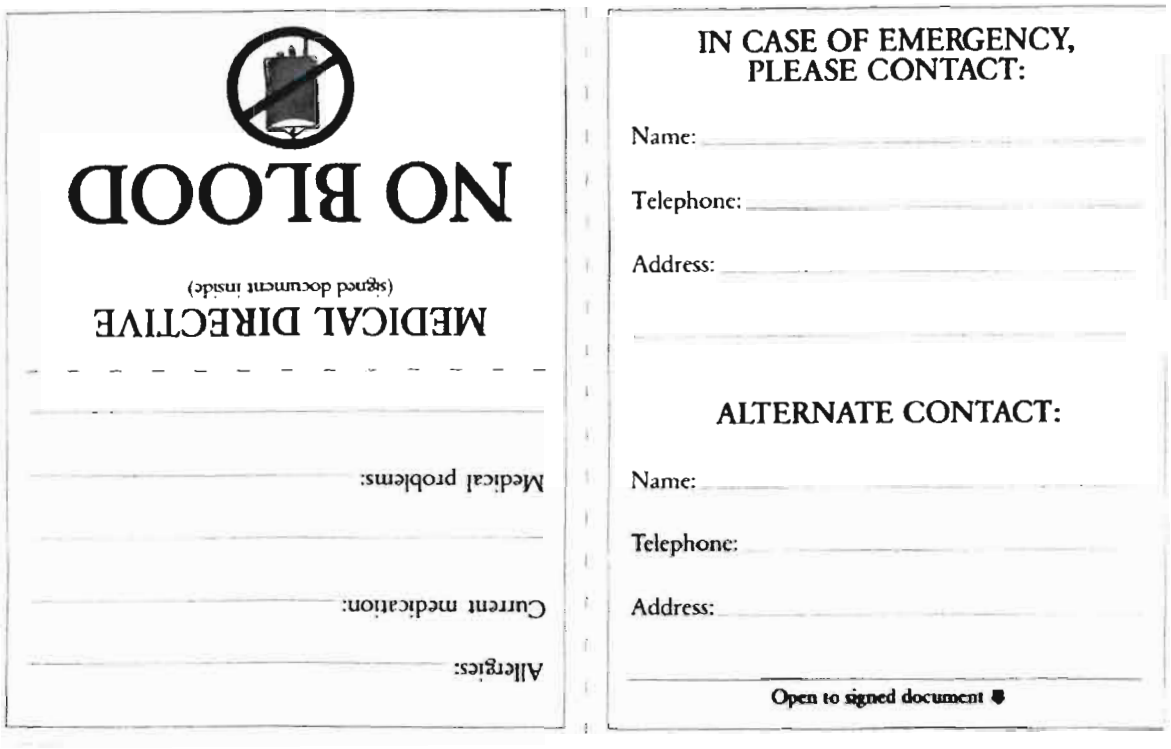
RE: RESEARCH PROJECT – ALTERNATE BLOOD PRODUCTS

Permission is hereby granted for you to publish your case presentation with the proviso that anonymity is maintained.

Yours sincerely

MISS B HUDDLE
Nursing Manager

ANNEXURE F: EXAMPLE OF A MEDICAL DIRECTIVE- PAGE 1



MEDICAL DIRECTIVE- PAGE 2

ADVANCE MEDICAL DIRECTIVE/RELEASE

I, , make this advance directive as a formal statement of my wishes. These instructions reflect my resolute and informed decision.

I direct that ***no blood transfusions*** (whole blood, red cells, white cells, platelets, or blood plasma) be given to me under any circumstances, even if physicians deem such necessary to preserve my life or health. I will accept nonblood volume expanders (such as dextran, saline or Ringer's solution, or hetastarch) and other nonblood management.

This legal directive is an exercise of my right to accept or to refuse medical treatment in accord with my deeply held values and convictions. I am one of Jehovah's Witnesses, and I make this directive out of obedience to commands in the Bible, such as: "Keep abstaining . . . from blood." (Acts 15:28, 29) This is, and has been, my unwavering religious stand for years. I am years old.

I also know that there are various dangers associated with blood transfusions. So I have decided to avoid such dangers and, instead, to accept whatever risks may seem to be involved in my choice of alternative nonblood management.

I release physicians, anesthesiologists, and hospitals and their personnel from liability for any damages that might be caused by my refusal of blood, despite their otherwise competent care.

I authorize the person(s) named on the reverse to see that my instructions set forth in this directive are upheld and to answer any questions about my absolute refusal of blood.

Signature

Address

Date

Telephone

Witness

Witness

IG

FIGURE: 5.1


KwaZulu-Natal Provincial Hospitals
INGWAVUMA
PONGOLA
JOZINI
PAUL PIETERSBURG
NEWCASTLE
NQUTU
ULUNDI
DANNHAUSER
DUNDEE
LADYSMITH
TUGELA FERRY
BERGVILLE
WEENEN
ESTCOURT
GREYTOWN
NOTTINGHAM ROAD
NEW HANOVER
HOWICK
MOOI RIVER
PIETERMARITZBURG
UNDERBERG
RICHMOND
CREIGHTON
UMZINKULU
KOKSTAD
HARDING
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MTUBATUBA
RICHARDS BAY
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ESCOURT
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