CHAPTER 1

ORIENTATION TOWARDS THE STUDY

1.1 BACKGROUND

The global burden of cancer has more than doubled in the past 30 years. In 2008, it was estimated that 7 million people worldwide died of cancer and although the majority of deaths were in adults, 90 000 deaths related to childhood cancers. Childhood cancer comprises all cancers arising in children under the age of 15 years and whilst rare, globally the estimation is that 160 000 children will be diagnosed with cancer each year (World Health Organization, 2008). According to the South African Paediatric Cancer Registry (Mackinnon et al., 2011), approximately 650 children are newly diagnosed with cancer each year, commonly with leukaemia (80%), brain tumours (20%), lymphomas (16%), nephroblastoma (10%) and neuroblastoma (Poole, 2010). This apparent low incidence is probably due to a combination of poor data collection and failure to diagnose cancer in some children. Diagnosis failure may be due to poor access to health care or because health professionals practicing in primary healthcare do not recognise the signs of paediatric malignancies (Daubenton et al., 2001).

Most adult cancers are consequences of the environment and lifestyle and take many years to develop. In contrast to adult cancer, less than 2% of childhood cancers are hereditary. Childhood cancers arise from spontaneous mutations in the cancer genes affecting organs of the body, which are growing and developing rapidly, such as bone marrow, blood, kidneys and tissues of the nervous system

(Poole, 2009).The onset period in children's cancers are generally short and if not detected early, can grow fast and aggressively. Children's tumours are also more invasive but respond better to treatment compared to cancer in adults (Tan & Franco, 2007). According to Poole (2010) and Hesseling (2006) and Naidu (2008), the overall survival rate of all children's malignancies is greater than 70% in developed countries, but much lower in developing countries. In South Africa, the survival rate for leukaemia has increased from 60% to 80% in 10 years due to the progress made in the field of early detection, as well as the ability to identify specific genetic changes.

Childhood cancers, like adult cancers, have specific warning signs, but according to Tan and Franco (2007), the severity of the signs and symptoms is different in children and differs greatly from adults. The World Health Organization (2008) has approved the use of early warning signs in identification of child cancers in developing countries and in 2000, these signs were developed and approved by the International Confederation of Childhood Cancer Parent Organisations (ICCCPO). In the same year, the Saint Siluan Signs (Table 1), through a joint initiative between the Childhood Cancer Foundation of South Africa (CHOC) and South African Children's Cancer Study Group (SACCSG) were brought to the attention of health professionals. The embarking of an educational campaign was to promote the signs to various primary health care clinics and 52 lectures were given to groups of doctors and registered nurses (Mackinnon et al., 2011).

Table 1: Saint Siluan Warning Signs for Cancer in Children

S	Seek	Medical help early for persistent symptoms
I	Eye	White spot in the eye, new squint, blindness, bulging eyeball
L	Lump	Abdomen and pelvis, head and neck, limbs, testes, glands
U	Unexplained	Fever, loss of weight and appetite, pallor, fatigue, easy bruising or bleeding
A	Aching	Bones, joints, back, and easy fractures
N	Neurological signs	Change in behaviour, balance, gait, milestones, headache and enlarging head

Source: Mackinnon et al., 2011; Children's Haematology and Oncology Centre, 2000

Early detection is a fundamental goal in cancer care as it provides for early treatment. Early detection and intervention should start in the primary stages of the disease to improve the prognosis and the opportunity for cure (Poyiadjis, 2000; Tan & Franco, 2007) and is associated with decreased morbidity and mortality and an improvement in the quality of life of the child (Mahon, 2000). Early diagnosis is imperative, as almost 600 South African children die needlessly each year because due to misdiagnosis, or not being diagnosed early enough for the treatment to be successful (Poole, 2010).

1.2 PROBLEM STATEMENT AND RESEARCH QUESTION

According to Gaffan, Dacre and Jones (2006), early diagnosis requires the involvement of a multi-disciplinary health care team including primary health care nurses, doctor and parents. Primary health clinics are however nurse lead and registered nurses are responsible for assessing, diagnosing, treating and referring children. According to Kibel ,Saloojee and Westwood (2008), the average primary care nurse will seldom see a child with cancer and the lack of knowledge of the signs makes it easy to understand why the diagnosis could be missed (Daubenton et al., 2001). It is however unclear whether registered nurses practicing in primary health

clinics are knowledgeable of the early warning signs of childhood cancers, as most of the 146 patients referred to Charlotte Maxeke Johannesburg Academic Hospital Paediatric Oncology Clinic during 2008 presented with advanced disease , leading to the need for intensive treatment and poor prognostic outcomes (Maree, 2007). The research question for the study was therefore: *How knowledgeable are registered nurses practicing at primary health clinics in the Johannesburg metropolis regarding the early warning signs of childhood cancer?*

1.3 PURPOSE OF THE STUDY

The purpose of the study was to explore the knowledge of registered nurses, practicing at primary health clinics situated in the Johannesburg metropolis, regarding the early warning signs of childhood cancer.

1.4 SIGNIFICANCE OF THE STUDY

This study provided baseline data of the knowledge of registered nurses regarding the warning signs of childhood cancer, which seem to be lacking. Having base line data would allow educational interventions to improve knowledge should knowledge deficit be identified.

1.5 OPERATIONAL DEFINITIONS

Child: Although the Children's Act (Children's Act No 38 of 2005) defines a child as a person under the age of 18 years, for the purpose of this study it will refer to a person younger than 15, as the term childhood cancer usually comprises all cancers arising in individuals before the age of 15 years (World Health Organization, 2008).

Knowledge: Knowledge refers to a clear and mental perception, which includes awareness and understanding of something (Greaves, 1987).

1.6 RESEARCH METHODS

A contextual, exploratory, quantitative survey was conducted. The context of the study was Johannesburg and specifically the primary health clinics in the metropolis. An exploratory approach was applicable to the study as the research question has not previously been explored (LoBiondo-Wood & Haber, 2010). A quantitative survey, defined as the investigation of the phenomena in such a way that precise measurement and quantification are achieved, was done (Polit & Beck, 2010).A questionnaire, as the data collection instrument, collected the self-report data (LoBiondo-Wood & Haber, 2010). The target population for the study was all registered nurses practicing in the 35 primary health clinics in the Johannesburg Metropolis Regions B, D, E, F and G. A total population sample (Saunders, 2007) was used and all registered nurses practicing at the specific primary health clinics (N=123) were recruited for the study. The sample size totalled 112 (n=112) resulting in a participation rate of 89.4%. Descriptive statistics using the Fisher's Exact test was used to analyse the data.

1.7 ETHICAL CONSIDERATIONS

The ethical principles outlined by Brink (2007) were applied during the study.

1.7.1 Right to self-determination

This implies the individual has the right to decide whether or not to participate in the study, without the risk of penalty. Prior to conducting the study, respondents were

ensured of the right of voluntarism, meaning they had the right not to participate in the study and would not be penalised should they decline the invitation.

1.7.2 Right to anonymity and confidentiality

'Anonymity' means namelessness. The questionnaires were numbered sequentially and no names appeared. All the information was kept in a secure place and only the researcher and the supervisor had access to the raw data.

1.7.3 Right to fair treatment

Fairness was applied in selecting the study population as all registered nurses practicing at the specific primary health clinics were invited to participate in the study. The researcher was punctual in the delivery and collection of the questionnaires. Permission to conduct the study was obtained from the Human Research Ethics Committee (Medical) at the University of Witwatersrand as well as the Gauteng Health Department and City of Johannesburg Local Authority.

1.8 CHAPTER DIVISION

The study is presented in the following chapters:

Chapter 1: Orientation towards the study

Chapter 2: Literature review

Chapter 3: Research methods and design

Chapter 4: Findings and discussion

Chapter 5: Justification, limitations and recommendations

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 provided an orientation towards the study. Chapter 2 presents a literature review addressing childhood cancer and the knowledge of registered nurses concerning cancer.

2.2 CHILDHOOD CANCER AS A GLOBAL HEALTH PROBLEM

According to the World Health Organization (2008), the term childhood cancer usually comprises all cancers arising in individuals before the age of 15 years. The World Health Organization (2008) further states the cancer incidence rates are approximately 140 per million in childhood populations living in Europe, North America and other developed regions of the world. The cancer incidence in developing countries is less known due to too few efficient population-based cancer registries. In some developing countries, where children comprise 40% to 50% of the population, the proportion of childhood cancers represents 3% to 10%, whereas in developed countries, it is less than 1%. According to the Cancer Association of South Africa (2012), between 800 and 1 500 South African children, under the age of 15, are diagnosed with cancer each year.

The International Agency for Research on Cancer (IARC) (2004) registers 160 000 children worldwide annually for childhood cancer, but estimates between 225 000 and 250 000 children get cancer each year, which means approximately 60 000 to

90 000 are not registered. It is usually children with cancers that are not recognised, not diagnosed, not presented, presented but abandoned before registration or treated but not registered who would not feature on the register. According to cancer registries in developed countries and Latin America, cancer rates in boys are slightly higher than in girls, but in Asia and Africa, the risk in boys appears substantially greater than in girls. It is unlikely that biological differences in terms of susceptibility by gender is reflected, rather it suggests uneven access for boys and girls to centres specialised in cancer treatment. Sick girls are less likely than boys to reach specialist care (Pearce, 2001). In the developing world, lack of infrastructure to report newly diagnosed children is a major obstacle leading to a lack of knowledge of childhood cancers (UICC, 2006).

Cancer in children under the age of 15 is rare compared to adults. Unfortunately the Union of International Cancer Control (2006) reports that good quality population based statistics on the occurrence of cancer at young ages have been more difficult to obtain than in adults. Serious under-reporting, even in western countries, has been documented. The variations in diagnostic practices and accuracy of reporting made it difficult to interpret geographical variations of childhood cancers.

Childhood cancers account for no more than 2% of all cancers however, they are the second most common cause of death in children in populations where the overall mortality is low. In affluent countries, about 6% of childhood deaths are due to cancer, which is twice the proportion due to infections but in countries where there are different causes the mortality is high; the proportion of cancer patients between the ages 5 to14 years, is significantly higher. Recorded rates are consistently above

12 per 100,000 in developed countries but appear lower in Asia and Africa with exceptions in places such as Uganda, where HIV infection is endemic and 66% of childhood tumours consist of HIV-related non-Hodgkin's lymphomas and Kaposi's sarcoma. In more affluent regions, Latin America, the Caribbean and in south-eastern African countries where AIDS is endemic, high rates are also recorded. According to the recorded rates, mortality is actually lowest in the rich high risk countries and reflects the striking inequalities in access to modern effective treatment (UICC, 2006).

According to the International Union against Cancer (2006), there have been tremendous advances during the past three to four decades, in resource-rich countries in the diagnosis, management and cure of children with cancer. Expectations have moved from survival in the 1960s, to 80% cure rates for many childhood tumours. These advances have exposed a huge divide between resource-rich and resource-limited countries, as poor or still developing countries face huge challenges such as starvation, drought, natural disasters and infection, with cancer not yet considered a priority. As an example, in Brazil, Colombia, Costa Rica and Ecuador approximately 60% of children with cancer still die, many are never diagnosed at all, whilst many are diagnosed too late and when a diagnosis is made the treatment options may be limited.

2.3 TYPES OF CHILDHOOD CANCER

Childhood tumours are classified into 12 major groups namely:

- leukaemia,
- lymphoma,

- central nervous system tumours,
- sympathetic nervous system tumours,
- renal tumours,
- retinoblastoma, hepatic tumours,
- bone tumours,
- soft tissue sarcomas,
- gem cell,
- epithelial tumours and melanomas,
- unspecified tumours.

Cancer usually develops over a short time with no pre-cancerous stage and often disseminated at diagnosis. Paediatric cancer occurs predominantly in pre-school children, whilst Non-Hodgkin's lymphomas, Hodgkin's disease, bone tumours and different epithelial tumours occur in older children and adolescents (WHO, 2008).

According to the World Health Organization (2008), cancer varies between different populations around the world. The most common cancer groups are leukaemia, lymphomas and central nervous system tumours. Malignancies of the haematopoietic system are the largest subgroup of childhood cancers, accounting for 30% to 60% of all tumours, followed by tumours of the brain and nervous system (10% to 20%), bone (3% to 10%) and liver (1% to 3%). Two-thirds of lymphatic malignancies in children are leukaemia's, the majority of which are acute lymphoblastic leukaemia (ALL), followed by acute myeloid leukaemia (AML); chronic myeloid leukaemia is rare. Leukaemia occurs more frequently in children under the age of five and the incidence decreases with age. Lymphomas constitute 20% to 30% of haematopoietic tumours (UICC, 2006).

Burkitt's lymphoma, generally a very rare B-cell neoplasm, is one of the most commonly registered tumours in some countries of sub-tropical Africa (WHO, 2008). In Equatorial Africa, Burkitt's lymphoma is linked to the Epstein-Barr virus (EBV) as the virus can be detected in the tumour cells of 90% of the children diagnosed with this disease. HIV infection, as well as other conditions, is the main contributing factor in the development of EBV-associated Burkitt's lymphomas. In immuno-compromised children, EBV may also cause other lymphoid tumours, such as Hodgkin's disease.

As previously mentioned, tumours of the brain and central nervous system are the second most common type of malignancy occurring in children. Before the advent of modern radiographic procedures for the diagnosis of intra-cranial tumours, the incidence of brain tumours was under-reported and continues to be underestimated where modern technology is not widely available. Under reporting could account partially for the lower incidence observed in most developing countries. Increases in central nervous system tumours have been documented in North America (Linet, 1999) and Europe (Steliarova-Foucher, 2004).

Amongst African children, retinoblastoma appears to be most common in; lymphoma is more common in the tropical areas of Africa; black children are more prone to the development of Wilms tumour and osteosarcoma; the rare Burkitt lymphoma is one of the most commonly registered tumours in some countries of sub-tropical Africa (WHO, 2008).

The causes of most cancers occurring in children are unknown, but well-established causes of childhood malignancies are the EBV and the human T-lymph tropic virus, which causes T-cell lymphoma and leukaemia. It is common knowledge that exposure to high doses of radiation causes leukaemia and other cancers in humans. Children exposed in utero, or in early life, are particularly susceptible to the carcinogenic effect of ionising radiation, which substantially increases the risk of leukaemia. Other environmental factors, which are possible causes of cancer include, the parent's lifestyle (diet, alcohol and tobacco consumption), occupational exposure to carcinogens, use of drugs and medication during pregnancy and exposure to electromagnetic fields. However, there is insufficient evidence for any of these. Of greater significance is children's inheritance of a genetic susceptibility for developing cancer. Spontaneous mutations are also a great risk as rapid cell proliferation occurs at young ages. A genetic basis for the most common types of childhood cancers has not been established, yet there is a clear genetic cause for retinoblastoma and nephroblastoma (UICC, 2006).

2.4 THE DETECTION OF CHILDHOOD CANCERS

According to Stromborg (2004), early detection is the identification of a disease, in a person who may or may not be asymptomatic, when it is still localised, curable or manageable. Early detection also refers to the identification of a precancerous lesion. Identification is made through tests, physical examinations and observations. The focus of health care is cost containment; screening and early detection contributes to increased survival. Early detection refers to the application of screening tests, which allow presumptive diagnosis of various cancers in asymptomatic persons. The process of cancer diagnosis involves the recognition of

a complaint by the individual, its evaluation by health care professionals and confirmation by laboratory tests or diagnostic procedures.

The lack of recognition of cancers is a major public health problem. Often cancer is not a stated priority for health care expenditure in developing countries, because infectious diseases typically dominate the healthcare agendas of such countries and so cancer control efforts generally fall behind other priorities of the National Health authorities. Although the majority of cancers are curable, if detected and treated in the early stages, this is not the case in developing countries, as approximately 80% of all cancer patients have advanced stage disease at initial presentation (WHO, 2008).

According to the World Health Organization (2008), the detection of cancer in children often depends on the preparedness of the primary health provider unfortunately, this only occurs in rare instances. In the poorest countries, many cancers may remain undetected in children, due to the lack of training or inexperience of health professionals and paediatricians who are used to dealing primarily with infectious diseases. Other factors contributing to under-detection relate to traditional healers being the preferred health care provider as well as traditional beliefs. In cancer registration data, such preferences are reflected in a relative lack of infants amongst registered cases or excess registrations amongst boys compared to girls. Continued development of non-invasive diagnostic methods such as computerised tomography, magnetic resonance imaging and nuclear medicine scans increase the accessibility, the timeliness and the precision of the diagnosis. These advances explain, in part, the rapid increase in the incidence of central nervous

system tumours observed in the USA and Europe in recent decades, as well as the low incidence rates in developing countries (WHO 2008 & UICC, 2006).

2.5 THE WARNING SIGNS OF CHILDHOOD CANCER

Various systems are used to alert health care professionals and the public of the warning signs of childhood cancers. In South Africa, the early warning signs of cancer, known as the Saint Siluan warning signs, was compiled by the South African Children's Cancer Study Group (SACCSG) in 1999 and adopted by the Department of Health of South Africa to be used at primary health care level and for the general public (2000).

The public awareness of these warning signs was promoted by:

- being published in the two most widely read newspapers of Southern Gauteng;
- six radio interviews on detecting the signs were given to local radio stations during peak hours in the late afternoon;
- two interviews were given on the national broadcaster;
- three thousand pamphlets displaying the signs were distributed to the clinics for public distribution;
- a toll-free telephone number was installed at the Chris Hani Baragwaneth Hospital Haematology/Oncology clinic in Johannesburg, to deal with queries.

The Saint Siluan early warning signs of cancer in children were effective in alerting the public and the primary health workers in cancer detection, thus increasing the number of new patients to a specialist centre (Mackinnon et al., 2011). However, according to Mackinnon et al. (2011), from the decreasing

number of new patients over time it is apparent the educational awareness campaign needs to be on-going.

In addition to the St.Siluan system, the Cancer Association of South Africa (CANSA) (2012) and the Ped-Onc Resource Centre, which provides resources and information for parents of children with cancer (2011), use the words “CHILD CANCER” to create awareness of childhood cancer (Table 2.5.1).

Table 2.5.1.

C	Continued unexplained weight loss
H	Headache, often with vomiting, at night or early morning
I	Increased swelling or persistent pain in bones, joints or back
L	Lump or mass in abdomen, neck, chest, pelvis or arms
D	Development of excessive bruising, bleed or rash
C	Constant infections
A	A whitish colour behind the pupil
N	Nausea that persists, or vomiting without nausea
C	Constant tiredness or noticeable paleness
E	Eye or vision changes that occur suddenly or persist
R	Recurrent fevers of unknown origin

2.6 CONCLUSION

Chapter 2 provided an overview of literature review. Chapter 3 will present an in-depth description of the research methods and design of the study.

CHAPTER 3

RESEARCH METHODS

3.1 INTRODUCTION

Chapter 2 was devoted to a literature review; Chapter 3 will describe the research methods and design used in the study.

3.2 RESEARCH METHODS AND DESIGN

The research methods for this study are described in terms of the research strategy, context, design, population and the gathering and analysis of data.

3.2.1 Research strategy

An exploratory research strategy was used. According to Begley (2008), exploratory research is conducted when the researcher is not aware of any other studies conducted in a specific area. Polit and Beck (2010) describe an exploratory study as a study conducted to shed light on the various ways a specific phenomenon manifests. An exploratory research strategy was applicable to this study as the research question has not previously been explored.

3.2.2 Research context

The study was contextual. LoBiondo-Wood & Haber (2010) define the context of a study as the environment in which a study is conducted. The context of the study was Johannesburg, specifically the primary health clinics in the metropolis. The city of Johannesburg, is home to a 2 883 226 people living in approximately 791 369

households. In terms of health care, a common vision for the city of Johannesburg has been established namely, “One City, One Health System.” Both the Gauteng Provincial Health Department and the local authority are responsible for providing primary health services throughout the city, which are accessible, equitable, effective and efficient. In order to achieve this, the emphasis is on primary health care through the district health system, with a strong focus on prevention, child and family health (City of Johannesburg, 2010).

3.2.3 Research Design

The research design is a blueprint for conducting a study, which maximises control over factors that could interfere with the study’s desired outcome (Burns & Grove, 2007). A quantitative survey was selected for this study. Quantitative research allows the investigation of the phenomena in such a way that precise measurement and quantification can be done (Polit & Beck, 2006: 508). In addition, a survey obtains self-report information about people’s knowledge, intentions and opinions best suited to the enquiry (Polit & Beck, 2006).

3.2.4 Population, sampling and recruitment

Polit and Beck (2006) define a population as “the entire set of individuals with the same common characteristics.” The population targeted was all registered nurses practicing in the 35 primary health clinics in the Johannesburg Metropolis Region B, D, E, F and G.

A census, also called a total population sample (Saunders, 2007) was used and according to Saunders (2007), a measurement of a parameter of a population by total counts of individuals. Despite the researcher running the risk of a low response

rate, a census was selected as it increases the confidence interval and allows the involvement of everyone (Mersdorf, 2011).

One hundred and thirty two (N=132) registered nurses were recruited for the study, however only 112 returned the completed questionnaire (n=112).

3.2.5 Data collection and instrument

A self-administered questionnaire (Annexure A) was designed based on literature and expert opinion of a doctoral prepared oncology nurse and used as the data collection instrument. According to Nieswiadomy (2008), a questionnaire is a self-report instrument containing questions to which the respondents provide written answers. The questionnaire consisted of two sections; Section A collected demographic data, whilst Section B contained the St Siluan warning signs with a Likert scale. Respondents were requested to indicate their knowledge of each sign by choosing between “agree,” “not sure” and “disagree.”

Apart from being perfectly suited for survey studies, using a questionnaire had the additional benefits of being less expensive in terms of time and money and respondents feel a great sense of anonymity and are more likely to provide honest answers. The absence of an interviewer ensures there will be no bias reflecting respondent’s reaction to the interviewer rather than to the question itself (LoBiondo-Wood &Haber, 2010, Polit & Beck, 2006, Brink 2007).

The dependent and independent variables contained in the questionnaire are summarised in Tables 2.1 and 2.2

Table 2.1: Independent variables

Variable	**Response**
Age	20 to 30, 30 to 40 , 40 to 50, 50 to 60 years
Gender	Male /Female
Years practicing as registered nurse	0 to 1, 1 to 2, 3 to 5, 6 to10, between 10 and 20, more than 20 years
Year practicing in primary health care	0 to1, 1 to 2, 3 to 5, 6 to10, between 10 and 20, more than 20 years
Highest nursing/academic qualification	Three year diploma, Four year basic nursing diploma; Four year basic nursing degree; Post basic diploma in primary health care; Other post basic diploma (such as oncology or paediatrics); Post basic degree (such as B Cur I et A; BA Cur I et A) and a Master's degree in nursing.

Table 2.2: Dependent variables.

Variable	**Response**
White spot in the eye	Agree, Not sure and Disagree
New squint	Agree, Not sure and Disagree
New blindness	Agree, Not sure and Disagree
Bulging eyeball	Agree, Not sure and Disagree
Lump in the abdomen	Agree, Not sure and Disagree
Lump in the pelvis	Agree, Not sure and Disagree
Lump in the head and neck	Agree, Not sure and Disagree
Lump on the limbs	Agree, Not sure and Disagree
Lump on the testes	Agree, Not sure and Disagree
Enlarged glands	Agree, Not sure and Disagree
Unexplained prolonged fever for more than two weeks	Agree, Not sure and Disagree

Unexplained prolonged loss of weight over two weeks	Agree, Not sure and Disagree
Unexplained prolonged pallor	Agree, Not sure and Disagree
Unexplained prolonged fatigue	Agree, Not sure and Disagree
Unexplained prolonged easy bruising	Agree, Not sure and Disagree
Unexplained prolonged bleeding	Agree, Not sure and Disagree
Aching joints	Agree, Not sure and Disagree
Back ache	Agree, Not sure and Disagree
Easy fractures	Agree, Not sure and Disagree
Change or deterioration in the ability to walk	Agree, Not sure and Disagree
Change or deterioration in balance	Agree, Not sure and Disagree
Change or deterioration in speech	Agree, Not sure and Disagree
Change or regression of milestones	Agree, Not sure and Disagree
Headache for more than one week without vomiting	Agree, Not sure and Disagree
Headache for more than one week with vomiting	Agree, Not sure and Disagree
Enlarging head	Agree, Not sure and Disagree

The questionnaire was pre-tested to allow the researcher to make corrections before the actual study. Brink (2007) stated that a pre-test allows the researcher to recognise and address problems before a study is conducted. Ten registered nurses practicing at an academic hospital in Johannesburg were approached to complete the questionnaire. No questions were found to be ambiguous and therefore no changes were made to the questionnaire. The results of the pre-test were not included in the study.

The data gathering was planned as follows:

- Ethical clearance for the study was obtained from the Ethics Committee for Human Subjects of the University of the Witwatersrand (Annexure D).
- Permission to conduct the study was obtained from the Gauteng Department of Health as well as the City of Johannesburg (Annexure C and E).
- The researcher contacted the regional managers of the different regions to notify them of the days for data collection at the various primary health clinics.
- The data was collected for one month from 21 November 2011to 15 December 2011.
- On arrival at the primary health clinics, the researcher introduced herself to the Operational Manager of the clinic and all the registered nurses.
- An envelope containing the questionnaire was handed out to all registered nurses and arrangements were made to collect the completed questionnaires.
- The researcher collected the completed questionnaires on the date agreed with the specific clinics.
- The entire data gathering was done during the week as the primary health care clinics did not operate over weekends.

3.2.6 Data Analyses

After data collection, the completed questionnaires received a code according to the different regions and clinics. The abbreviation consisted of the region and clinic number. All raw data were captured manually onto a Microsoft Excel spreadsheet, which was then given to the statistician, who statistically analysed the data using the STATA 12 statistical package. To measure the associations between the variables, Fischer's Exact test was calculated with the significance level set at 0.05 (p=0.05).

The questionnaires, which had 27 questions, were analysed statistically according to the two sections. Section A comprised general information, whilst section B, comprised the knowledge of the warning signs of childhood cancer.

3.3 VALIDITY AND RELIABILITY

Validity refers to the degree to which an instrument measures what it's supposed to measure within the context in which it is applied (Brink; 2007). Reliability is the extent to which test scores are accurate, consistent or stable (Struwig & Stead; 2007). Measures taken to increase the validity and reliability of the findings were as follows:

- Participation and cooperation of the Gauteng Department of Health and the management of the local clinics permission ensured access to the registered nurses practicing in the clinics.
- The questionnaire was based on the Saint Siluan Warning Signs of Cancer in Children (Mackinnon et al., 2011) to gather data on the registered nurses' knowledge of the warning signs of these cancers.
- Prior to conducting the study, the questionnaire was pre-tested. No problems were experienced with the questionnaire.
- Data were gathered during the week as the primary health clinics did not operate over weekends.
- The researcher, a registered oncology nurse, gathered the data.
- The statistical analysis was done with Fisher's Exact test of independence and analysed with the support of a statistician.

CONCLUSION

Chapter 3 provided a description of the research methods used to answer the research question. In Chapter 4 the findings of the study will be presented.

CHAPTER 4

FINDINGS AND DISCUSSION

4.1 INTRODUCTION

In Chapter 3 the research methods applicable to the study were described. The focus of Chapter 4 is to describe and discuss the findings.

4.2 FINDINGS OF THE STUDY

One hundred and thirty two (N=132) registered nurses were recruited for the study however only 112 returned the completed questionnaire (n=112) and so the participation rate was 84.8%.

4.2.1 General information

The majority of respondents were female (97.3%; n=109), older than 40 years (59.1%; n=86), with slightly more than half (55.4%; n=62) having practiced as registered nurses for more than 10 years, however most (56.3%; n=63) had practiced less than five years in a primary health setting. A four year diploma in nursing and midwifery was the basic registration qualification of the greatest percentage (71.4%; n=80) with only a small percentage (24%; n=27) having primary health nursing as post-registration qualification. The general characteristics of the respondents are presented in Table 4.1.

Table 4.1 General characteristics (n=112)

Characteristic	**N**	**%**
Age		
20 to 29	6	5.4
30 to 39	36	32.1
40 to 49	30	26.8
50 to 59	38	33.9
60 years and older	0	0
No answer	2	1.8
Gender		
Male	2	1.8
Female	109	97.3
No answer	1	0.9
Years practicing as registered nurse		
Less than 1 year	2	1.8
Between 1 and 2 years	3	2.7
Between 3 and 5 years	13	11.6
Between 6 and 10 years	31	27.7
Between 10 and 20 years	24	21.4
More than 20 years	38	33.9
No answer	1	0.9
Years practicing in a primary health care setting		
Less than 1 year	10	8.9
Between 1 and 2 years	20	17.9
Between 3 and 5 years	33	29.5
Between 6 and 10 years	23	20.5
Between 10 and 20 years	17	15.2
More than 20 years	8	7.2
No answer	1	0.9
Registration qualification		
Three year diploma in general nursing	28	25
Four year diploma in nursing (general, psychiatric and community) and midwifery	42	37.5
Four year B degree in nursing (general, psychiatric and community) and midwifery	10	8.9
No answer	32	28.6
Post registration qualifications in nursing		
No post registration qualification	17	15.2
Diploma in primary health care	27	24
Degree in nursing education and administration	23	20.5
Master's degree	0	0
Doctoral degree	0	0
No answer	45	40.2

4.2.2 Knowledge of the warning signs of childhood cancer

When calculating the percentages participants scored, nearly 30% (n=33) of respondents did not achieve 50%, 55.5% (n=61) achieved between 50% and 79% and only 16.1% (n=18) achieved 80% and more. Individual scores ranged from zero out of the 27(0%) to 27 out of 27 (100%) correct answers. The average score attained was 16.7 out of 27, or 61.9%. The median score was 17. Table 4.2 presents a summary of the individual scores.

Table 4.2 Summary of individual scores (n=112)

Total score	**n**	**%**
Between 0 and 49 percent	33	29.5
Between 50 to 79 percent	61	54.4
80 percent and more	18	16.1
Total	112	100

Table 4.3 Knowledge of the warning signs of childhood cancer (n=112)

Sign	**Agree**		**Not sure**		**Disagree**		**No answer**	
	N	%	n	%	n	%	n	%
White spot in the eye	59	52.7	40	35.7	9	8	4	3.5
New squint	38	33.9	44	39.2	27	24.1	3	2.7
New blindness	60	49	34	27.8	14	12.5	0	0
Bulging eyeball	75	61.4	30	24.6	6	5.4	1	0.8
Lump in the abdomen	79	70.5	23	20.5	8	7.1	2	1.8
Lump in the pelvis	73	65.1	23	20.5	14	12.5	2	1.8
Lump in the head and neck	79	70.5	19	16.9	10	8.9	3	2.7
Lump on the limbs	65	58.0	29	25.8	13	11.6	5	4.5
Lump on testes	70	62.5	29	25.8	11	9.8	2	1.8
Enlarged glands	81	72.3	18	16	10	8.9	3	2.7
Unexplained prolonged fever for more than two weeks	44	39.2	32	29.4	34	30.3	2	1.8
Unexplained prolonged loss of weight over two weeks	60	49.0	26	23.2	21	18.7	5	4.5
Unexplained prolonged pallor	87	77.6	13	11.6	9	8	3	2.7
Unexplained prolonged fatigue	97	86.6	10	8.9	3	2.6	2	1.8
Unexplained prolonged easy bruising	88	78.5	16	14.2	5	4.4	3	2.7
Unexplained prolonged bleeding	103	91.9	7	6.2	0	0	2	1.8
Aching bones	80	71.4	25	22.3	6	5.4	1	0.8
Aching joints	70	62.5	33	29.4	8	7.1	1	0.8
Back ache	60	49.0	36	32.1	14	12.5	2	1.8

Easy fractures	68	60.7	24	21.4	17	15.1	3	2.7
Change or deterioration in the ability to walk	79	70.5	21	18.7	11	9.8	1	0.9
Change or deterioration balance	66	58.9	30	26.7	12	10.7	4	3.5
Change or deterioration speech	58	51.7	37	33	13	11.6	4	3.5
Change or regression of milestones	75	66.9	22	19.6	12	10.7	3	2.7
Headache for more than a week without vomiting	41	36.6	42	37.5	27	24.1	2	1.8
Headache for more than a week with vomiting	48	42.8	42	37.5	20	17.8	2	1.8
Enlarging head	55	49.1	32	28.5	23	20.5	2	1.8

4.2.3 Age and knowledge

A cross tabulation of percentage scores of nurses knowledge according to the early warning signs was done and grouped into 10-year age bands as shown in Table 4.4. None of the registered nurses between the ages of 20 and 29 obtained 80%. In all age groups, less than 20% of nurses scored 80% or more answers correct. No statistically significant difference was found between the age groups in terms of their correct answers scored (Fisher's Exact test, p=0.29). Although the number of nurses who participated was 112, the total in the table amounted to only 110, as two participants did not answer all the questions.

Table 4.4 Comparison of knowledge scores of early warning signs for childhood cancer in nurses, by nurses' age groups (n=112).

	Total score (%)		
Age group	**0-49**	**50-79**	**≥80**
20-29; (n=6)	3 (50%)	3 (50%)	0
30-39; (n=36)	6 (17%)	23 (64%)	7 (19%)
40-49; (n=30)	9 (30%)	17 (56%)	4 (13%)
50-59; (n=38)	15 (39%)	16 (42%)	7(18%)

4.2.4 Years in practice and knowledge

A cross-tabulation of percentage scores of nurses' knowledge of early warning signs was done, by years practising as registered nurses (Table 4.5). Comparison of years practised against percentage scores showed no statistical significance (Fisher's Exact test, p=0.81). One of the participants did not answer some of the questions, so the total for this comparison was 111.

Table 4.5 Comparison of knowledge scores of early warning signs for childhood cancer in nurses, by years practising as a registered nurse (n=111).

	Total score (%)		
Years practising as a registered nurse	**0-49**	**50-79**	**≥80**
0-5 (n=18)	6 (33%)	9 (50%)	3 (16%)
6-10 (n=31)	9 (29%)	18 (58%)	4 (12%)
11-20 (n=24)	6 (25%)	16 (66%)	2 (8%)
>20 (n=38)	12 (31%)	18 (47%)	8 (21%)

4.2.5 Primary health care as qualification and knowledge

When a cross-tabulation of percentage scores of nurses' knowledge according to the early warning signs was done, by years practising in a primary health care, (Table 4.6) no statistical significance was found (Fisher's Exact test, p=0.17). Four participants did not answer some of the questions, so the total in this comparison was 108.

Table 4.6 Comparison of knowledge scores of early warning signs for childhood cancer in nurses, by years practising in a primary health care (n=108).

	Total score (%)		
Years practising in primary health care	**0-49**	**50-79**	**≥80**
<1 (n=10)	3(30%)	5(50%)	2(20%)
1-2 (n=20)	6(30%)	12(60%)	2(10%)
3-5 (n=30)	8(26%)	18(60%)	4(13%)
6-10 (n=23)	6(26%)	16(69%)	1(4%)
11-20 (n=17)	3(17%)	7(41%)	7(41%)
>20 (n=8)	4(50%)	2(25%)	2(25%)

4.2.6 Academic qualifications and knowledge

When a cross-tabulation of percentage scores of nurses' knowledge according to the early warning signs was done, by years of their academic qualifications (Table 4.7), no statistical significance was found (Fisher's Exact test, p=0.55). One of the participants did not answer some of the questions, giving a total of 111.

Table 4.7 Comparison of knowledge scores of early warning signs for childhood cancer in nurses, by years of their academic qualifications (n=111).

	Total score (%)		
Academic qualification	**0-49**	**50-79**	**≥80**
No post basic qualification (n=62)	20 (32%)	35 (56%)	7 (11%)
Post basic diploma in PHC (n=27)	6 (22%)	15 (55%)	6 (22%)
Other post basic diploma or post basic degree (n=22)	6 (27%)	11 50%)	5 (22%)

4.2 DISCUSSION OF THE STUDY

A good response rate was achieved for the study at 80 % (n=112). The shortness of the questionnaire and brief questions, could have contributed to the good response rate as it enhanced respondent friendliness (Dillman, Sinclair & Clark, 1993).

The study provided evidence that nurses had a low level of knowledge of the signs of childhood cancer. However, as seen in Table 4.4, the older respondents scored much higher than their younger counterparts. According to Benner, Tanner and Chesla (1992), older nurses are much more experienced and have the ability to recognise abnormalities earlier. As most of the younger nurses' practice without supervision at the City of Johannesburg clinics, children with cancer may go undiagnosed due to low knowledge levels.

The study also provides evidence that practicing, as a registered nurse for less than five years, equals less knowledge. Benner, Tanner and Chesla (1992) are of the opinion that registered nurses could be categorised as advanced beginners, intermediate group, or expert practitioners. Advanced beginners are those with up to six months work experience who are less likely to grasp variations and patterns within particular situation. With the advanced beginners, the intermediate group also needs supervision from senior staff in clinical situations. The expert practitioners have the ability to recognise much more, are more skilled, more knowledgeable, need less supervision, can make a proper diagnosis and refer the child with cancer earlier. This however does not seem to be the case in the current study as low levels of knowledge were present across all age groups.

According to Stockes, H (2000), specialisation in nursing, leads to improvement in the knowledge of the individual in that specific field. As Clinical Nurse Specialists, they have more advanced nursing skills in identifying and diagnosing.
Despite registered nurses training in primary health care as a speciality, their knowledge still appeared minimal on the early warning signs in childhood cancer.

According to Stokes, H (2000), professional competence, as a complex interaction and integration of knowledge, judgment, higher-order reasoning, personal qualities, skills, values and beliefs is much more than the accomplishment of a number of discrete and separate tasks. In this study competency was measured in three different ways - Agree>80%, Not sure 50-79%, Disagree 0-49%.

CHAPTER 5

JUSTIFICATION, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Chapter 4 presented and discussed the findings of the study. The intention of Chapter 5 is to discuss the limitations and the recommendations in terms of the purpose and significance of the study.

5.2 JUSTIFICATION FOR THE STUDY

The study will be justified in terms of its purpose, which was to explore the knowledge of registered nurses, practicing at primary health clinics situated in the Johannesburg metropolis, regarding the early warning signs of childhood cancer. Chapter 3 described the research methods and Chapter 4 explored the knowledge of registered nurses practicing at primary health clinics situated in the Johannesburg metropolis. Therefore it can stated be stated that the study was justified in that the purpose was achieved.

5.3 LIMITATIONS OF THE STUDY

The limitations of the study were as follows:

- The study was only conducted within one metropolis primary health clinic.

- Self-report data were collected which could have led to recall and social desirable bias. In addition, the feedback was dependent on the voluntary cooperation of the participants.

- A survey tends to reflect relatively superficial knowledge and a not deep understanding of the phenomenon investigated.

5.4 RECOMMENDATION.

Based on the finding and conclusion of the study, the researcher makes the following recommendations.

- The City of Johannesburg should consider continuous professional education to enhance knowledge and competence of nurses in recognising the early warning signs of childhood cancer.
- There is a need for regular educational workshops and in-service training for registered nurses within the primary health care setting.

CONCLUSION

The study provided evidence that the levels of knowledge, regarding the early warning signs of childhood cancer, of the registered nurses practicing in the primary health care clinics is low. Age, years of practice or academic qualifications did not influence knowledge.

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APPENDICES

Region ☐
Annexure A

REGISTERED NURSE KNOWLEDGE OF THE EARLY WARNING SIGNS OF CHILDHOOD CANCER.

Questionnaire

Please complete the questionnaire as honestly as possible.

SECTION A: GENERAL INFORMATION			**Office Use**
1. How old are you?	20-30 years 30-40 years 40-50 years 50-60 years	1 2 3 4	**Q1=**
2. What is your gender?	Male	1	**Q2=**
	Female	2	
3. How long have you been practicing as registered nurse?	0 to1 year	1	**Q3=**
	1 to 2 years	2	
	3 to 5 years.	3	
	Between 6 and 10 years	4	
	Between 10 and 20 years	5	
	More than 20 years	6	
4. How long have you been practicing in primary health care?	0 to 1 year	1	**Q4=**
	1 to 2 years	2	
	3 to 5 years.	3	
	Between 6 and 10 years	4	
	Between 10 and 20 years	5	
	More than 20 years	6	
5. What is your highest nursing/academic qualification?			**Q5=**
	Three year diploma	1	
	Four year basic nursing diploma	2	
	Four year basic nursing degree	3	
	Post basic diploma in primary health care	4	
	Other post basic diploma (Specify .....)	5	
	Post basic degree (like B Cur I et A; BA Cur I et A)	6	
	Masters degree (Specify speciality.....)	7	
	Doctoral degree	8	

SECTION B: PLEASE INDICATE WHETHER YOU AGREE WITH THE FOLLOWING STATEMENTS REGARDING THE EARLY WARNING SIGNS OF CHILDHOOD CANCER				**Q6=**
The early warning signs of childhood cancer include:	**Agree**	**Not sure**	**Disagree**	
White spot in the eye				
New squint				
New blindness				
Bulging eyeball				
Lump in the abdomen				
Lump in the pelvis				
Lump in the head and neck				
Lump on the limbs				
Lump on the testes				
Enlarged glands				
Unexplained prolonged fever for more than two weeks				
Unexplained prolonged loss of weight over two weeks				
Unexplained prolonged pallor				
Unexplained prolonged fatigue				
Unexplained prolonged easy bruising				
Unexplained prolonged bleeding				
Aching bones				
Aching joints				
Back ache				
Easy fractures				
Change or deterioration in the ability to walk				
Change or deterioration balance				
Change or deterioration speech				
Change or regression of milestones				
Headache for more than a week without vomiting				
Headache for more than a week with vomiting				
Enlarging head				

Annexure B

REGISTERED NURSE KNOWLEDGE OF THE EARLY WARNING SIGNS OF CHILDHOOD CANCER.

INFORMATION LEAFLET

Dear Respondent

My name is Naseerah Raymond and I am a Masters student at the Department of Nursing Education at the University of Witwatersrand, Faculty of Health Science. I have been practicing for 11 years in a Paediatric Haemotology and Oncology clinic at a tertiary hospital. I would like to invite you to participate in a research project that forms part of my Master's degree studies, the title of which is REGISTERED NURSE KNOWLEDGE OF THE EARLY WARNING SIGNS OF CHILDHOOD CANCER.

The aim of this information leaflet is to provide information for you to understand fully what is involved and help you to decide whether you would like to participate. You should not participate if you are not satisfied with any aspect of the study.

Most children admitted to the Paediatric Haemotology and Oncology clinic have advanced disease with poor prognostic outcomes and require more intensive and aggressive treatment. The implications for the family are costly in terms of time and money and this may affect the family's pattern of interaction and relations.

Should you be willing to participate in the study, you would have to complete a questionnaire, which would take 20 minutes and place it in the sealable envelope

provided for this purpose. You would not have to sign informed consent to participate, as completing the questionnaire is recognised as consent. Please note that you need to be a registered nurse to participate in the study.

Your participation is voluntary and you have the right to withdraw at any time. Please note the completed questionnaires will receive code numbers to protect your privacy and nobody can link your name to a specific questionnaire. This means that once the questionnaires have been collected I will not be able to identify which one is yours and would therefore not be able to withdraw it. The completed questionnaires will be kept separately and only be available to my supervisors and myself. Once the research is completed and the results verified, the questionnaires will be destroyed.

By participating in the study you would help us gather baseline data and should a deficit in knowledge be identified, design an intervention to address it. Thank you for taking the time to read this information letter and your willingness to participate in the study would be highly appreciated.

Kind regards

Naseerah Raymond
011 488 4180(w)
011 488 4233(fax)
naseerah.raymond@hotmail.com

Annexure C

P.O BOX 3643
Southgate
2082

Gauteng Department of Health
Sub Directorate: Professional Development
Private bag X 085
Marshalltown 2017

Dear Sir/Madam,

Request to undertake research in a public hospital and PHC in Johannesburg.

My name is Naseerah Raymond and I am currently conducting research for a Masters degree through the Department of Nursing Education at the University of the Witwatersrand. The topic I have chosen is" REGISTERED NURSE KNOWLEDGE OF THE EARLY WARNING SIGNS OF CHILDHOOD CANCER."

The purpose of the study is to investigate the knowledge of Registered Nurses practicing in primary health settings regarding the early warning signs of childhood cancer. A quantitative survey will be conducted and respondents have to complete a questionnaire. Ethical clearance for the study will be sought from the Ethics Committee for Human Subjects of the University of the Witwatersrand.

Please find attached a copy of the research proposal, information leaflet and ethics approval. Should there be any queries, please contact me on 011 488 4180(w) or at naseerah.raymond@hotmail.com

Yours sincerely,

Naseerah Raymond

a world class African city

CITY OF JOHANNESBURG
HEALTH DEPARTMENT

RESEARCH APPLICATION FORM [i]

1. GENERAL INFORMATION

- This form is to be completed in duplicate
- This form is to be attached to an Approved Research Proposal
- All particulars must be **PRINTED** legibly.
- After each signature the name must appear in block capital letters

1.1 EXTERNAL APPLICANT

Name of Applicant (Please Print)	**Naseerah Raymond**			
Address of Applicant	**Postal:** **P O BOX 3643** **Southgate** **2082**	**Residential:** **56 Valley View Road** **Meredale ext 15** **2092**		
Contact Details	**Tel. No.**	**Fax No.**	**Cell No.**	**E-Mail**
	0823223673	0114884233	0823223673	naseerah.raymond@hotmail.com
Written approval to conduct research obtained from immediate supervisor			**YES**	**NO**

1.2 INTERNAL APPLICANT (Personnel of the City of Johannesburg)

Name of Applicant (Please Print)				
Designation				
Written approval to conduct research obtained from immediate supervisor		**YES**	**NO**	
Region		**Facility/Dept.**		
Contact Details	**Tel. No.**	**Fax No.**	**Cell No.**	**E-Mail**
Research Project component of Course/Diploma/Degree		**Research Project Self-initiated**		

2. EDUCATIONAL INSTITUTION/ORGANISATION

Name of Educational Institution/Organisation (Please Print)		Department of Nursing Education, Faculty of Health Science, University of Witwatersrand.		
Name of Diploma/Degree		Masters Nursing:- Paediatric/Oncology		
Address of Institution/Organisation		7 York Road, Park town 2193, South Africa		
Contact Details	**Tel. No.**	**Fax No.**	**Cell No.**	**E-Mail**
	011 4884272	**0114884195**	**----------**	**----------**
Name of Contact Person/Supervisor/Mentor		**Dr A Tjale/Prof Liza Maree**		
Contact Details	**Tel. No.**	**Fax No.**	**Cell No.**	**E-Mail**
	011 4884269/4272	**0114884195**	**0827352781**	**Adele Tjale @wits.ac.za**

3. RESEARCH INFORMATION

Research Proposal	***Please attach copy of a Research Proposal***		
Purpose/Aim of the Research	The purpose of the study is to explore the knowledge of registered nurses, practicing at primary health clinics situated in the Johannesburg metropolis, regarding the early warning signs of childhood cancer.		
Assessment of Research Proposal by an accredited Ethics Committee	**APPROVED**	**End October 2011**	
	FOR APPROVAL		
Assessment of Research Proposal by Gauteng Province: Research Department	**APPROVED BY**	**Print Name:**	**Contact Tel. No.:**
	NOT APPROVED BY	**Print Name:**	**Contact Tel. No.:**
Gauteng Province: Research Department – Evidence of Approval	**Awaiting GHD approval. Spoke to Siyabonga Twala and emailed proposal.**		

<table>
<tr><td>Estimated Duration of the Proposed Research Project</td><td colspan="3">Spending 30 minutes in a clinic, after completing questionnaire go to the next clinic.</td></tr>
<tr><td rowspan="2">Methodology</td><td>Questionnaires</td><td>Interviews</td><td>Clinical Trials</td></tr>
<tr><td>The questionnaire.

In Section A

demographic data

will be gathered and

in Section B

knowledge of the

early warning signs

of childhood cancer

will be explored.</td><td>A census (total population) sample will be done and 384 registered nurses (n=384) practicing in the specific clinics would be invited to participate in the study.</td><td>nil</td></tr>
<tr><td>Research Requirements</td><td colspan="3">• To invite RN working in PHC to participate in the study.</td></tr>
<tr><td>Assistance required from the City of Johannesburg</td><td colspan="3">• To allow me to distribute a self-administered questionnaire to the RN working in PHC. Thank you.</td></tr>
</table>

4. DECLARATION BY APPLICANT

I, Naseerah Raymond, agree to conduct the said research as set out in the approved research proposal attached hereto and confirm the information therein is a true reflection of my/our work.

I agree to conduct the research at no cost to the City of Johannesburg Health Department and will not hold the City responsible for any damages, legal, financial or otherwise, during the course of the project.

I agree to adhere to and respect the policies and protocols of the City of Johannesburg whilst conducting the said research.

I agree to submit a final Research Report to the City of Johannesburg no later than four (4) weeks after the final approval of the report.

I agree to allow the City of Johannesburg Health Department to act on any findings/recommendations made in the final report to better and/or improve the delivery of health care within the City.
I agree to inform the City of Johannesburg prior to the publication of any article(s) pertaining to the research conducted in the City.

RESEARCH APPLICANT
Naseerah Raymond

_____	_____	**21 Nov. 11**
Name & Surname (Please Print)	**Signature**	**Date**

RECOMMENDED: YES / NO

_____ _____
Regional Health Manager **Date**

RECOMMENDED: YES/NO

_____ _____
Director (Relevant Department) **Date**

RECOMMENDED: YES/NO

_____ _____
Director: Public Health **Date**

_____ _____
COJ: Research Committee **Date**

APPROVED / NOT APPROVED:

_____ _____
Dr. R. Bismilla **Date**
Executive Director: Health
City of Johannesburg

I agree to allow the City of Johannesburg, Health Department to act on any findings/recommendations made in the final report to better and/or improve the delivery of health care within the City.

I agree to inform the City of Johannesburg prior to the publication of any article(s) pertaining to the research conducted in the City.

RESEARCH APPLICANT
Naseerah Raymond

Name & Surname (Please Print)	**Signature**	**21 Nov. 11** **Date**

RECOMMENDED: YES / NO

Regional Health Manager	**Date**

RECOMMENDED: YES/NO

Director (Relevant Department)	**Date**

RECOMMENDED: YES/NO

Director: Public Health	**Date**

COJ: Research Committee	**Date**

APPROVED / NOT APPROVED:

a world class African city

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Dear Sir/Madam

APPROVAL TO CONDUCT RESEARCH WITHIN HEALTH IN THE CITY OF JOHANNESBURG

Permission has been granted to you to conduct research in the Health Department within the City of Johannesburg.

Topic:

Please contact the following person(s) before you commence with your project and to gain access to the clinics:

Should you have any queries please do not hesitate to contact our department.

We look forward to your Final Research Report.

Thank you

_____

DR. R. BISMILLA
Executive Director
City of Johannesburg
Health Department

health and social development
Department: Health and Social Development
GAUTENG PROVINCE

BANK OF LISBON BUILDING
37 SAUER STREET JHB
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GAUTENG DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT

RESEARCH PROPOSAL EVALUATION FORM

Researcher Name	Naseerah Raymond
Researcher's contact details	Cell: 0823223673 Email: naseerah.raymond@hotmail.com
Institution	
Research Topic	Registered nurse knowledge of the early warning signs of childhood cancer
Date Received by the Directorate PPR	21/11/2011
Date Received Reviewer	13/12/2011
Final Review Date	19/12/2011
Date Submitted to Director of PPR	20/12/2011
Research Site(s)	Twenty seven (27) Primary health care clinics in the metropolis.
Type of research	Descriptive

CRITERIA	YES	NO	COMMENTS
1. Is this research project within the scope of the Department of Health key policy priorities/directives?	X		
2. Content of Research: ▪ Original work	X		
▪ New facts, ideas	X		
▪ Confirmation of uncertain data	X		
▪ Repetition of known data and consequently of limited importance		X	
▪ Insufficient research information		X	
▪ Confusion of topics/questions		X	
3. Is the title of the research project suitable?		X	.
4. Are the objectives of the research project adequate?	X		
5. Could the objectives be limited to better focus on the project's main objective?		X	
6. Writing style			
▪ The text of the proposal is clear	X		
▪ The nomenclature used is correct	X		
▪ The references used are relevant, comprehensive and accurate	X		

CRITERIA	YES	NO	COMMENTS
▪ The spelling and grammar are correct	X		
▪ The language needs improvement		X	
▪ The research proposal needs re-styling and re-writing		X	
7. Are the research methods appropriate to the study?	X		
8. Is data collection method in line with the study design?	X		Wits: M110845
9. Does the study have ethical approval? If yes, name the ethics committee.	X		
10. Is the definition and measurement of variables consistent with the scope of the proposal?	X		
11. Is the time frame of the proposal adequate to meet the objectives?	X		
12. Is the method of dissemination of the results of the research project stated?		X	
13. Is any possible conflict of interests clarified?		X	
14. Are financial implications and financial support transparent?	x		

SUMMARY OF PROPOSAL

Background

An average primary health care nurse seldom recognizes a child with cancer, due to the lack of knowledge of the signs of cancer and this results in missed diagnosis (Kibel and Bruce, 2008; Daubenton *et al.*, 2001). One hundred and forty six (146) patients were referred to Charlotte Maxeke Academic Hospital Paediatric Oncology clinic in 2008 and this prompted a need for intensive treatment. The purpose of the study is therefore to explore the knowledge of registered nurses practicing at primary health care clinics situated in the Johannesburg metropolis regarding the early warning signs of childhood cancer.

Objectives

- To describe the knowledge of registered nurses regarding early detection of cancer in children.
- To analyze the knowledge of registered nurses in hospital setting and PHC regarding early detection of cancer in children.

METHODS

A quantitative survey will be conducted amongst 384 registered nurses practicing in the 27 primary health clinics in the JHB Metropolitan region B, E and F. Self-reported data will be gathered by means of self – administered questionnaires. A pilot study will be conducted amongst ten registered nurses at Charlotte Maxeke Hospital. Data will be analyzed by means of descriptive statistics.

REVIEWER'S FINAL CONCLUSION

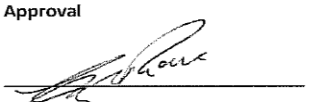
This study is recommended, its results would provide baseline evidence of the knowledge of registered nurses regarding the warning signs of childhood cancer.

Reviewed and Recommended by

Dr B Ikalafeng

Date: 2011/12/21

Approval



S. le Roux, Director PPR

Date: 21/12/2011

CONDITIONS OF APPROVAL OF A RESEARCH STUDY PROPOSAL

health and social development

Department: Health and Social Development
GAUTENG PROVINCE

Vision of the Department

"To be the best provider of quality health and social services to the people in Gauteng"

POLICY, PLANNING AND RESEARCH (PPR)
Enquiries: Dr B Ikalafeng
Tel: +2711 355 3500
Fax: +2711 355 3675 Email: Bridget.Ikalafeng@gauteng.gov.za

CONTACT DETAILS OF THE RESEARCHER	
Date	21 December 2011
Contact number	Cell: 0823223673
Email	naseerah.raymond@hotmail.com
Researcher /Principal investigator (PI)	Naseerah Raymond
Supervisor	
Institution	
Research title	Registered nurse knowledge of the early warning signs of childhood cancer.

This approval is granted only for a research proposal submitted to GDHSD by Naseerah Raymond entitled "Registered nurse knowledge of the early warning signs of childhood cancer."

Approval is hereby granted by the Gauteng Department of Health and Social Development for the above mentioned research study proposal for a study to be conducted within GDHSD domain. Approval is limited to compliance with the following terms and conditions:

1. All principles and South African regulations pertaining to ethics of research are observed and adhered to by all involved in the research project. Ethics approval is only acceptable if it has been provided by a South African research ethics committee which is accredited by the National Health Research Ethics Council (NHREC) of South Africa; this is regardless of whether ethics approval has been granted elsewhere.

   Of key importance for all researchers is that they abide by of all research ethics principles and practice relating to human subjects as contained in the Declaration of Helsinki (1964, amended in 1983) and the constitution of the Republic of South Africa in its entirety. Declaration of Helsinki upholds the following principles when conducting research, respect for:
   - Human dignity;
   - Autonomy;
   - Informed consent;
   - Vulnerable persons;
   - Confidentiality;
   - Lack of harm;
   - Maximum benefit;
   - and justice

2. The GDHSD is indemnified from any form of liability arising from or as a consequence of the process or outcomes of any research approved by HOD and conducted within the GDHSD domain;
3. Researchers commit to providing the GDHSD with periodic progress and a final report; short term projects are expected to submit progress reports on a more frequent basis and all reports must be submitted to the Director: Policy, Planning and Research of the GDHSD;
4. The Principal Investigator shall promptly inform the above mentioned office of changes of contact details or physical address of the researching individual, organisation or team;
5. The Principal Investigator shall inform the above office and make arrangements to discuss their findings with GDHSD prior to dissemination;
6. The Principal Investigator shall promptly inform the above mentioned office of any adverse situation which may be a health hazard to any of the participants;
7. The Principal Investigator shall request in writing authorization by the HOD via PPR for any intended changes of any form to the original and approved research proposal;
8. If for any reason the research is discontinued, the Principal Investigator must inform the above mentioned office of the reasons for such discontinuation;
9. A formal research report upon completion should be submitted to the Director: Policy, Planning and Research of the GDHSD with recommendations and implications for GDHSD, the Directorate will make this report available for the HOD.

This approval is granted only for a research proposal submitted to GDHSD by Naseerah Raymond entitled

"Registered nurse knowledge of the early warning signs of childhood cancer."

AGREEMENT BETWEEN THE GAUTENG DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT (GDHSD) AND THE RESEARCHER

Ms Sue le Roux
Director: Policy Planning and Research

Date: 21/12/2011

Signature:

Name and surname of Principal Researcher Ms Naseerah Raymond

Research/Academic Institution

Date: 23/12/2011

Signature:

This approval is granted only for a research proposal submitted to GDHSD by Naseerah Raymond entitled "Registered nurse knowledge of the early warning signs of childhood cancer."

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Ms N Raymond

CLEARANCE CERTIFICATE	M110845
PROJECT	Registered Nurse Knowledge of the Early Warning Signs of Childhood Cancer
INVESTIGATORS	Ms N Raymond.
DEPARTMENT	Department of Nursing Education
DATE CONSIDERED	26/08/2011
M1108450DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 26/08/2011 **CHAIRPERSON** .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable
cc: Supervisor : Dr Adele Tjale

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...