CHARACTER STRENGTHS OF ADOLESCENTS WHO HAVE SURVIVED CANCER: A COMPARATIVE STUDY

By

GLORIA ERACLEOUS

MINOR DISSERTATION

Submitted in partial fulfillment of the requirements for the degree

Master of Science in Psychology

In the

FACULTY OF SCIENCE

At the

UNIVERSITY OF JOHANESBURG

SUPERVISOR: DR THARINA GUSE

May 2008

UNIVERSITY OF JOHANNESBURG

TABLE OF CONTENTS

	PAGE/S
AKNOWLEDGMENTS	**9**
ABSTRACT	**10-11**
CHAPTER 1: PROBLEM STATEMENT AND AIMS	**12**
1. INTRODUCTION AND PROBLEM STATEMENT	**12-13**
2. AIMS	**14**
3. BASIC HYPOTHESIS	**14**
4. OVERVIEW OF THE SCOPE OF CURRENT STUDY	**14-15**
CHAPTER 2: CHILDHOOD CANCER AND THE DEVELOPING ADOLESCENT	**16**
1. INTRODUCTION	**17**
2. CHILDHOOD CANCER	**17**

UNIVERSITY OF JOHANNESBURG

2.1 Prevalence of Childhood Cancer **17-18**

2.2 Types of childhood cancer **18**
2.2.1 Leukemia 18
2.2.2 Brain Tumors 19
2.2.3 Lymphomas 19
2.2.4 Wilms' Tumor 19
2.2.5 Neuroblastoma 20
2.2.6 Bone tumors 20
2.2.7 Retinoblastoma 20

2.3. Treatment options in the course of cancer diagnosis **21**
2.3.1 Surgery 21
2.3.2 Radiation 22
2.3.3. Chemotherapy 22-23
2.3.4 Bone marrow transplantation 24
2.3.5. Biological Therapies 24-25

2.4 The course of childhood cancer **26**

3. ADOLESCENCE AS A PSYCHOLOGICAL DEVELOPMENTAL STAGE **27**

3.1 Physical changes **27**
3.1.1 Physical growth 28
3.1.2 Physical strength 28
3.1.3 Inner Organs 28
3.1.4 Puberty and maturation 29

3.2 Cognitive development **29-30**

UNIVERSITY OF JOHANNESBURG

3.3 Psychosocial development **30-33**

4. PSYCHOLOGICAL IMPACT OF CHILDHOOD CANCER ON ADOLESCENT DEVELOPMENT **33-36**

5. PSYCHOLOGICAL IMPACT OF CANCER SURVIVAL ON ADOLESCENT DEVELOPMENT **37-39**

6. SUMMARY **40**

CHAPTER 3: CHARACTER STRENGTHS IN ADOLESCENTS **41**

1. INTRODUCTION **41**

2. POSITIVE PSYCHOLOGY AS AN EXPLANATORY FRAMEWORK **41-42**

3. DEFINING POSITIVE PSYCHOLOGY **42-43**

4. DEFINING CHARACTER STRENGTHS **43-45**

5. THE VIA-YOUTH CLASSIFICATION OF CHARACTER STRENGTHS **45**

5.1 Wisdom **45**

5.1.1Creativity 46

5.1.2 Curiosity 46

5.1.3 Open-mindedness 46

5.1.4 Love of Learning 46

5.1.5 Perspective 47

UNIVERSITY OF JOHANNESBURG

5.2Courage **47**
5.2.1 Authenticity 47
5.2.2 Bravery 47
5.2.3 Persistence 47
5.2.4 Zest 48

5.3 Humanity **48**
5.3.1 Kindness 48
5.3.2 Love 48
5.3.3 Social Intelligence 48

5.4 Justice **49**
5.4.1Fairness 49
5.4.2 Leadership 49
5.4.3 Teamwork 49

5.5 Temperance **50**
5.5.1 Forgiveness 50
5.5.2 Modesty 50
5.5.3 Prudence 50-51
5.5.4 Self Regulation 51

5.6 Transcendence **51**
5.6.1 Humor 51
5.6.2 Appreciation for beauty and excellence 51-52
5.6.3 Gratitude 52
5.6.4 Hope (optimism, future mindedness and future orientation) 52
5.6.5 Religious and spiritual beliefs 52-53

UNIVERSITY OF JOHANNESBURG

6. CHARACTER STRENGTHS IN ADOLESCENCE **53-54**
6.1 Wisdom **54-55**
6.2 Courage **55-56**
6.3 Humanity **56**
6.4 Justice **57**
6.5 Temperance **57-58**
6.6 Transcendence **58-60**

7. CHARACTER STRENGTHS IN HEALTH AND ILLNESS AND CHILDHOOD CANCER **60-61**
7.1 Wisdom **61-62**
7.2 Courage **62**
7.3 Humanity **63-64**
7.4 Justice **64**
7.5 Temperance **64-65**
7.6 Transcendence **65-66**

8. SUMMARY **66-67**

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY **68**

1. INTRODUCTION **68**

2. RESEARCH DESIGN **68**

3. PARTICIPANTS **68**

4. PROCEDURE **69-70**

UNIVERSITY OF JOHANNESBURG

5. MEASURING INSTRUMENTS **70**

5.1 Biographical questionnaire **70**

5.2 The Values in Action Inventory of Strengths for Youth (VIA-Youth) **70**

5.2.1 Rationale 70

5.2.2 Nature and administration 70-71

5.2.3 Scoring and Interpretation 71

5.2.4 Psychometric Properties 71-72

5.2.5 Motivation for use 72

6. AIM AND HYPOTHESIS **72**

7. DATA ANALYSIS **72-73**

8. SUMMARY **73**

CHAPTER 5: RESULTS AND DISSCUSSION OF RESULTS **74**

1. INTRODUCTION **74**

2. DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS **74**

3. RELIABILITY INDICES OF THE VIA **75**

3.1 Reliability coefficients for the 6 virtues **76**

3.2 Reliability coefficients for the 24 individual character strengths **76-78**

UNIVERSITY OF JOHANNESBURG

4. KURTOSIS, SKEWNESS AND NORMALITY DISTRIBUTION OF THE VIA **78**

4.1 Kurtosis, skewness and normality distribution of the 6 virtues **78-79**

4.2 Kurtosis, skewness and normality distribution of the of the character strengths of the VIA **79-80**

5. COMPARISON OF THE CHARACTER STRENGTHS OF THE EXPERIMENTAL AND CONTROL GROUPS **81-83**

6. QUALITATIVE COMENTS MADE BY THE EXPERIMENTAL GROUP **84-87**

7. SUMMARY **87-88**

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS **89**

1. INTRODUCTION **89**

2. CONCLUSIONS BASED ON THE REVIEW OF THE LITERATURE **89**

2.1Childhood cancer in adolescent survivors of cancer **89-90**

2.2 Character strengths in adolescence **90-91**

2.3 Differences between the character strengths of adolescents who have survived cancer and healthy adolescents **91-92**

3. LIMITATIONS OF THE CURRENT STUDY **93**

4. RECOMMENDATIONS **93-94**

UNIVERSITY OF JOHANNESBURG

PERSONAL NOTE **95**

REFERENCES **96-104**

LIST OF TABLES

TABLE 1: Demographic characteristics of participants 74-75

TABLE 2: Types of cancer diagnosed in the experimental group 75

TABLE 3: Reliability for the 6 virtues 76

TABLE 4: Reliability coefficients for the 24 character strengths of the VIA-Youth 77-78

TABLE 5: Kurtosis, skewness and normality distribution of the 6 virtues of the VIA 79

TABLE 6: Kurtosis, skewness and normality distribution of the character strengths of the VIA 80

TABLE 7: Comparison of the character strengths of experimental and control group 83

UNIVERSITY OF JOHANNESBURG

ACKNOWLEDGEMENTS

I would like to dedicate this study, to my cousin Costa Migadakis, who passed away from cancer over 8 years ago. Despite the fact that I did not know him well, the remarkable strength of character he showed through his cancer experience has become an admirable and influential force in my life. He was an extremely special individual and he is sorely missed by those who loved him most.

It was a great honor for me to speak to and work with all the adolescents in the context of my study. Thank you to all adolescent cancer survivors and their parents for their willingness to participate.

Big thanks to Zuki, Steven Slutow, the members at CHOC and the doctors at the various hospitals for their willingness and assistance in contacting adolescent cancer survivors.

To my supervisor Dr Tharina Guse, there are no words to describe how much your support, patience and assistance has meant to me. Thank you.

Lastly I would like to say thank you to my family for their support. More importantly, I would like to thank my parents without whom I would not have reached this point. Thank you for all you have offered me and all you have sacrificed to help me get here.

UNIVERSITY OF JOHANNESBURG

ABSTRACT

Child and adolescent cancer has evolved from being an inevitably fatal disease to a life-threatening chronic disease, and thanks to the improvement of modern treatment methods more and more children are surviving childhood cancer. Despite this successful impact of medical intervention, little is known about the psychological aspects in adolescence that may contribute to the survival of cancer, or how the cancer experience may have impacted on children and adolescents' psychological development.

The aim of this study therefore was to explore the differences between the character strengths of adolescents who have survived cancer with those of healthy adolescents in an attempt to understand one possibility of the psychological aspects that may be related to cancer survival.

As a foundation for understanding the psychological aspects of cancer survival, this study reviewed literature on the adolescent experience of cancer. Specifically the prevalence, types as well as the course of cancer were discussed. Furthermore, for the purpose of facilitating a better understanding of the cancer experience in adolescence, exploration of normal adolescent development as well as the psychological impact of cancer on adolescent development was addressed.

Following the exploration of this literature, it became apparent that information regarding the positive psychological aspects of the cancer experience in adolescence is limited. Specifically, attention was focused on character strengths as a possible positive outcome in the adolescent cancer experience. This was further understood in the context of positive psychology as an explanatory framework.

An ex post facto experimental design for independent groups was implemented and the two groups were matched in order to eliminate as many confounding variables as possible. Both groups, consisting of 21 adolescents each, completed the Values in Action Inventory for Youth (VIA-Youth) developed by Peterson and Seligman (2004). The

UNIVERSITY OF JOHANNESBURG

experimental group also had an opportunity to write comments about the experience of having survived cancer.

Results indicated that no statistically significant differences were apparent between the character strengths of adolescents who have survived cancer and those of their healthy counterparts. Rather, the character strengths of both groups seemed to be quite similar. This may imply that the development of specific positive psychological traits during childhood is neither hindered nor enhanced by the experience of serious illness such as cancer. However, the written accounts of the cancer survivors made reference to the character strengths of hope, gratitude, spirituality, love, perspective and appreciation of beauty and excellence.

UNIVERSITY OF JOHANNESBURG

CHAPTER 1: INTRODUCTION, PROBLEM STATEMENT AND AIMS

1. INTRODUCTION AND PROBLEM STATEMENT

Research in children and adolescents who have survived cancer has increased over the past several years, and developments in detection and treatment have dramatically affected survival rates among childhood cancer patients. As these diseases, once regarded as fatal, are becoming increasingly curable, it is important that we improve our knowledge of the psychological aspects associated with survival (Boman & Bodegard, 2000).

Research focusing on coping with childhood chronic illness such as cancer is progressing towards levels of greater specificity regarding positive or negative psychological outcomes. However, little time has been devoted to the positive psychosocial aspects of childhood cancer survival. Throughout most of its history, psychology has been concerned with identifying and remedying human ills. However in addition to this the field of positive psychology has laid the foundation for the understanding of human psychological strengths (Peterson, Park & Seligman, 2006). Knowing that the outcome of cancer in childhood is determined by multiple factors, the understanding of these facets is important for the benefit of patients with cancer.

It is possible that affective states may have a direct physiological effect that retards the course of illness (Seligman & Csikszentmihalyi, 2000). Further, human strengths and resilience, which refer to the ways in which humans overcome daunting obstacles, triumph over adversity and emerge successfully, may also be involved. For example positive beliefs such as optimism and the ability to find meaning in threatening events have been linked to a slower course of terminal illness (Seligman & Csikszentmihalyi, 2000). There also seems to be some relationship between the use of signature strengths, as conceptualised by Peterson and Seligman, (2004) and physical wellbeing (Carr, 2004).

Therefore it is important to understand the possible role of more positive psychological aspects in the experience and survival of childhood cancer.

The existing research around the experience of cancer in childhood as a danger to the general health and psychological wellbeing does not adequately address the more positive aspects related to surviving cancer. Understandably, due to the physical risks that arise from late physical complications of aggressive cancer treatment and the psychological threat from having experienced such a serious disease, trying treatment and even closeness to death, there is an emphasis on the negative facets of the cancer experience (Boman & Bodegard, 2000). However, having had this stressful experience and its associative negative psychological sequelae, many patients report some psychological benefits. This includes an increased appreciation for life and a better capacity for living in the present, less concern about trivial matters, greater self confidence and a greater willingness to fulfill their own wishes (Barraclough, 1999).

Due to the developmental differences in children's understanding of illness, we know that young children do not understand the potential side effects or long term consequences of having a chronic illness such as cancer. This differs in the period of adolescence. Adolescence in particular is a trying time of life for most young persons, a time of adjustment featuring paramount struggles. Having had cancer and dealing with the stressors of cancer often make it especially hard to cope with the developmental tasks of this age group. However, this struggle may also contribute to the development of particular psychological strengths, since Peterson, Park and Seligman (2006) reported the existence of specific character strengths in adult survivors of serious physical illness. The strengths of appreciation of beauty, bravery, curiosity, fairness, forgiveness, gratitude, humor, kindness, love of learning and spirituality were found to be higher than those individuals without a history of physical illness (Peterson, Park & Seligman, 2006).

With the context outlined above, the current study attempts to investigate character strengths in adolescents who have survived cancer with those of healthy adolescents. The

main question to be answered is whether there are particular character strengths that may be associated with adolescents who have survived childhood cancer.

2. AIMS

In view of the aforementioned, the aims of this study are:

1. To explore and explicate relevant literature on childhood cancer and adolescent survivors of childhood cancer in order to understand the psychological impact of cancer in the specific population;

2. To explore and explicate the relevant literature on character strengths in adolescents, and the possible manifestation thereof in the context of illness;

3. To determine whether significant differences exist between character strengths of adolescents who have survived cancer compared to healthy adolescents.

UNIVERSITY OF JOHANNESBURG

3. BASIC HYPOTHESIS

The basic hypothesis of this study is that adolescents who have survived cancer will display different character strengths in comparison to healthy adolescents.

4. OVERVIEW AND SCOPE OF THE CURRENT STUDY

It has been argued that existing research on childhood cancer has neglected more positive psychological aspects. The current study focuses on the manifestation of character strengths in adolescents who have survived childhood cancer. The aim and hypothesis has been stated in this chapter. In Chapter 2 childhood cancer will be explored in more detail. Specifically, the prevalence, types of childhood cancers, various treatment options and the course of cancer will be discussed. In addition to this the psychological impact will be described of cancer and its survival on adolescent development. In Chapter 3

positive psychology will be explicated as an explanatory framework for the study. Character strengths will be discussed in the context of adolescence as well as in cancer survival, illness and wellbeing. Chapter 4 will describe the empirical study. In Chapter 5 the data will be presented and interpreted. Final conclusions are provided in Chapter 6.

UNIVERSITY OF JOHANNESBURG

CHAPTER 2: CHILDHOOD CANCER AND THE DEVELOPING ADOLESCENT

"I never thought my life would change so drastically when I was diagnosed with cancer until I was told that my leg would have to be amputated. Tests showed that I had a rare cancer (Ewing's Sarcoma) in my left femur and it had already caused a lot of damage. My mom, dad and sister were with me the day the psychologist told me that my leg would have to be amputated. He had to explain to me what 'amputated' meant. I was only 12 .I can remember crying. All I could think of was what about my sport? That's all I kept asking the psychologist as well. He explained to me that my life as a sportsman needn't stop if I only had 1 leg……. After 22 sessions of chemotherapy I could face life again and think about my future……I came second in the junior division of the Nedbank disabled Open Golf tournament…The people who have had the biggest impact on my life until now are my parents. They have always been there for me. I am also grateful for the support I get from my friends and my school. I am most grateful to God, who gave me a second chance. My mom asked me recently if I had been afraid of dying. Thinking back I realized I hadn't. I took each day as it came and decided. I have to get through this. I lived for sport-then lost my leg to cancer. But it gave me the chance to learn to play golf." Martin Lamprecht, 17 years old survivor of cancer (Lamprecht, 2007).

1. INTRODUCTION

Childhood cancer has been extensively studied from a medical perspective as most literature is directed at the medical advances that have contributed to addressing physiological elements surrounding cancer. However, it is known that children and adolescents who have been diagnosed with cancer experience more than just physiological and medical effects. They also experience psychological effects, as well as cognitive and neuropsychological effects, all of which have a great impact on the individual child or adolescent (McDougal, 1997). Therefore while medical technology and treatment have contributed greatly to the higher survival rate of children diagnosed with cancer, it is possible that psychological aspects have also played a part resulting in positive outcomes for such survivors. In the following chapter, the prevalence, types as well as the course of childhood cancer will be discussed as the foundation for understanding the experiences of adolescents who have survived childhood cancer. In addition to this, treatment options for childhood cancer will be presented and psychological aspects related to cancer in childhood will be discussed. To facilitate understanding of the experience of cancer during adolescence, normal adolescent development will be addressed, as well as adolescent development in the aftermath of cancer.

2. CHILDHOOD CANCER

2.1 Prevalence of Childhood Cancer

According to the CHOC childhood cancer foundation (2008), there are about 700 children diagnosed with cancer each year in South Africa. However, it is believed that at least half of the children in the country are never diagnosed and thus receive no treatment. This is especially true since in poorer countries, childhood cancer is often detected too late for effective treatment and the appropriate treatment is too often either not available or affordable (Mortara, 2006). Taking these two factors into account, it is estimated that there are at least 600 children in South Africa who die each year due to

cancer, but who would have survived if they were diagnosed early enough and treated properly (Mortara, 2006).

Internationally, it is estimated that 110-130 per million children suffer from cancer each year in western countries. According to Hewitt, Weiner and Simone (2003), an estimated 12,400 American children and adolescents under the age of 20 were diagnosed with cancer in 2000. Childhood cancer is rare, and the rate at which new cases develop among children and adolescents is 15.3 per 100,000 per year. This corresponds roughly to 1 in 6,500 children and adolescents under the age of 20. Prior to the 1970's, most children and young adults diagnosed with cancer had little hope of being cured. Since then survival rates have increased to 78 %. Consequently the size of the population of survivors of childhood cancer has grown dramatically to 270,000 individuals of all ages as of 1997 in the USA (Hewitt, Weiner & Simone, 2003). The different types of childhood cancers which exist will be discussed in the next section.

UNIVERSITY OF JOHANNESBURG

2.2Types of childhood cancer

2.2.1 Leukemia

Leukemia is the most common type of childhood cancer and accounts for 39% of all childhood types. It is a cancer of the hematopoietic (blood cell) system characterised by an abundance of abnormal white blood cells. Children with leukemia tend to show symptoms such as anemia, bleeding, fever, spleen and bone pain. There are two types of leukemia namely acute lymphoblastic leukemia (ALL) and acute non lymphoblastic leukemia (ANLL). Both involve a proliferation of abnormal blood cells in the bone marrow which then prevents the blood from expanding to the normal blood cells (McDougal, 1997).

2.2.2 Brain Tumors

Brain tumors are the second-leading cause of childhood cancer, accounting for 15% of all childhood malignancies. Brain tumors occur mainly in children between the ages of five and ten (McDougal, 1997).

2.2.3 Lymphomas

Approximately 15% of childhood malignancies consist of lymphomas, making them the third most frequent type of cancer in children (Reis, Smith, Gurney, Linet, Tamra, Young & Bunin, 1999). There are two types, these being, non-Hodgkin's Lymphoma (NHL) and Hodgkin's Lymphoma which are both malignancies of the lymphoid cells in the body (Reis et. al., 1999).

NHL is most common in preadolescents and adolescents. This cancer tends to metastasise in other areas rather rapidly, most commonly to the bones, central nervous system and the bone marrow (McDougal, 1997). Hodgkin's lymphoma differs from NHL in that it usually demonstrates a slower onset and an orderly progression, involving the lymph node areas. Its peak incidence occurs in late adolescence, early adulthood and middle age (McDougal, 1997).

2.2.4 Wilms' Tumor

Wilm's tumor is by far the most common form of renal cancer in children and is usually suspected if there is a lump in the abdomen. Wilms' tumor is believed to originate in the tissue from which the normal kidney arises. Wilms' tumor usually arises in one of the affected kidneys of the child, but it can occur bilaterally (on both kidneys) as well (Reis et al., 1999).

2.2.5 Neuroblastoma

Neuroblastomas account for 7 % of childhood cancers. These are characterised by tumors that start in the adrenal glands, chest and abdomen. They are highly malignant and spread quickly (McDougal, 1997).

2.2.6 Bone tumors

Bone tumors make up 6% of child malignancies. The two types of bone cancer that predominate in children are osteosarcoma and Ewing's sarcomas. Osteosarcoma occurs in children and adolescents from ages 10-20 while Ewing's sarcoma consists of tumors that are found in the marrow spaces between bones. In the US, 650-700 children and adolescents younger than 20 years of age are diagnosed with bone tumors each year of which approximately 400 are osteosarcoma and 200 are Ewings sarcoma (Reis et al, 1999).

UNIVERSITY OF JOHANNESBURG

2.2.7 Retinoblastoma

Retinoblastoma is a tumor of childhood which arises in the retina of the eye. Two types of retinoblastoma have been described: those linked to genetic mutations and the so – called sporadic retinoblastoma. The genetic-linked retinoblastoma are divided into two groups, those which arise in children who carry the retinoblastoma gene inherited from one or both parents and those in which the disease occurs as a result of a new mutation(Reis et al, 1999). This is a very rare condition and is usually identified by age three.

Different treatment options are available depending on the specific types of childhood cancer, as will be presented in the following section:

2.3 Treatment options and their psychological impact

The course of childhood cancer centers on the type of cancer the individual has and the treatment options available to that person. Age, physical condition, and personal preferences are factors in the decision to use one treatment over another (Rocha, 2001). The treatment options available to individuals with cancer are considered to impact on the individual psychological processes and possibly the way they think about or respond to their illness. As such it is necessary for the purpose of this study to discuss the different treatment options and the implications thereof.

2.3.1 Surgery

Surgery is traditionally the first treatment choice for many kinds of cancer. When cancer is localised surgery is used to remove the tumor as well as the surrounding tissue that may contain cancer cells (Rocha, 2001). Types of childhood cancers that necessitate this kind of treatment include brain tumors, renal tumors such as Wilm's tumors, neuroblastomas and bone tumors. These require surgical removal of the tumor by application of micro surgery and laser surgery (McDougal, 1997).

The physiological side effects of surgery include chronic pain, scars, or lymph edema. Accompanying these are psychological effects such as, fear and anxiety which have been related to regression and developmental delays (Wilkinson-Carr, 2000). Some tumors such as osteosarcomas can cause intense pain that is difficult to control without using high doses of potent analgesia. In the case of osteosarcomas, amputations or limb salvage surgeries are undertaken, which in turn carries both short term and long term side effects. It usually takes 3-6 months for the child to adjust to the use of a prosthetic limb which in turn has both psychological and social implications (Wilkinson-Carr, 2000).

2.3.2 Radiation

Radiotherapy is the use of high-energy irradiation to destroy unwanted tissue, and its main use is in the treatment of cancer (Barraclough, 1999). Radiation can damage or destroy cancer cells so that they are unable to multiply. Side effects of radiotherapy arise because healthy cells as well as cancer cells are destroyed. The nature and severity of side effects depend on the dose given, its fractionation and the part of the body being treated (Barraclough, 1999). The most common side effects include fatigue, skin changes in the area being treated, some loss of appetite as well as some temporary baldness. These side effects may impact on the psychological and social development of the adolescent as the child becomes more self conscious and socially withdrawn (Rocha, 2001). The types of childhood cancers that rely on radiotherapy as a method of treatment include: lymphomas (NHL as well as Hodgkin's lymphoma), renal tumors- the most common being Wilm's tumor, bone tumors and retinoblastoma (McDougal, 1997).

UNIVERSITY OF JOHANNESBURG

2.3.3. Chemotherapy

Chemotherapy involves the use of powerful anticancer drugs or cytotoxic drugs injected directly into the patients' bloodstream. Most cytotoxic drugs act by damaging DNA, the 'genetic code' within the cell nucleus. This damage prevents cancer cells from dividing and leads to their death (Rocha, 2001). The several different classes of drugs act at different stages of cell division, and therefore the most effective way to use these drugs usually involves administering several types together. This is referred to as "combination chemotherapy". Treatment is often divided into a number of doses called 'pulses' or 'cycles' and is given every few weeks and continuing for several months (Barraclough, 1999).

Chemotherapy is used to treat cancer that has spread throughout the body or for cancers such as Leukemia which is one of the most common childhood cancers. Depending on the type of cancer and its developmental stage, chemotherapy can be used to cure cancer; prevent it from spreading; slow down the cancer growth; to kill the cancer cells that may

have spread to other parts of the patients body or relieve the symptoms caused by cancer (Rocha, 2001). Childhood cancers most often treated by chemotherapy are: brain tumors (due to the location of the tumor, surgery is not sufficient enough as a single route of treatment), lymphomas (NHL and Hodgkin lymphomas), Wilm's tumor, neuroblastoma (as these types of tumors are known to spread quickly), bone tumors (osteosarcoma and Ewing's sarcoma) and retinoblastoma (McDougal, 1997).

The range of side effects, both physical and psychological are noted, depending on the type and combination of drugs used, the amount taken and the length of treatment. Immediate physical side effects include hair loss, nausea, vomiting, and bone marrow depression which results in an increased susceptibility to infection and bleeding as well as mouth sores (Wilkinson-Carr, 2000). The deleterious effects of nausea and vomiting generate loss of stomach contents and produce metabolic imbalances. This produces further physical problems such as dehydration, anorexia, oral problems and fatigue. Complications such as pain ulcers, infection, bleeding, bone and dentition changes are also physical implications for this type of treatment. Functional disorders affecting verbal and non-verbal communication may also be apparent as well as difficulties in chewing and swallowing, taste and respiration (Wilkinson-Carr, 2000). Long term physical implications for chemotherapy are evident in renal impairment, cardiac damage and impaired fertility (Wilkinson-Carr, 2000).

The extensive physical effects generated by chemotherapy result in various psychological implications for the child. Low self esteem, depression and withdrawn behavior may be the result of such physical limitations. Low emotional expressiveness, frustration and discouragement with both school and relationship difficulties threaten the child's psychological well being (Kazak, Christakis, Alderfer, & Coiro, 1994).

2.3.4 Bone marrow transplantation

For treatment of certain childhood cancers like leukemia and bone tumors (osteosarcoma and Ewings sarcoma), bone marrow transplantation (BMT) is necessary. The goal of BMT is the replacement of defective or non- functioning bone marrow with normal stem cells. This involves first killing all or most of the patient's own marrow with high doses of drugs, and then transplanting marrow from a closely related or matched donor. This procedure is often very risky because after the transfusion the patient's full blood count begins to fall. The marrow does not function normally and due to this prolonged immunosuppression, the patient is at risk of life threatening infection (Lawrance & Kirk, 2000). Studies have shown that BMT generates physical effects such as fatigue, difficulties in eating and physical restrictions which further impact on the child's psychological functioning. Fears about the future, a sense of loss of control, anxiety and depression are often psychological difficulties faced by children enduring this kind of treatment (Baker, Zabora, Polland & Wingard, 1999).

UNIVERSITY OF JOHANNESBURG

2.3.5. Biological Therapies

Biological therapies are a promising new therapy method for certain kinds of cancer. Sometimes known as immunotherapy, biotherapy or biological response modifiers, these types of treatment boost and support the body's immune system so it can fight cancer naturally from within. Biological therapies use the body's immune system, either directly or indirectly, to fight cancer or to lessen the side effects that may be caused by some cancer treatments (Rocha, 2001). According to the National Cancer Institute (2006), biological therapies include the following forms of treatment:

- Biological response modifiers (BRMs) - these occur naturally in the body and can be produced in the laboratory. BRMs alter the interaction between the bodies immune defenses and the cancer cells to boost , direct or restore the bodies abilities to fight the disease
- Interleukins occur as natural cytokines in the body. These are reproduced in a laboratory and used as a biological therapy to stimulate the growth and activity of

many immune cells (such as lymphocytes) that destroy cancer cells. Similarly interferons are natural cytokines reproduced in a laboratory to improve the functioning of the immune system (National Cancer Institute, 2006).

- Colony stimulating factors do not directly affect tumor cells, but they encourage bone marrow stem cells to divide and develop white blood cells, red blood cells and platelets. Bone marrow is critical to the body's immune system because it is the source of all blood cells (National Cancer Institute, 2006).
- Monoclonal antibodies that react with specific types of cancer may enhance the patient's immune response to the cancer. They can further be programmed to act against cell growth factors, thus interfering with the growth of cancer cells. Furthermore these antibodies are also linked to anticancer drugs (National Cancer Institute, 2006).
- Cancer vaccines currently under research are geared towards encouraging the patient's immune system to recognise cancer cells. These vaccines are designed to treat existing cancers or to prevent the development of cancers (National Cancer Institute, 2006).
- Gene therapy is an experimental treatment that involves introducing genetic material into the patient's cells to fight the disease (National Cancer Institute, 2006).
- Lastly immuno-modulating agents are substances that stimulate or indirectly augment the immune system (National Cancer Institute, 2006).

Like other forms of cancer treatments, biological therapies can cause a number of side effects. Such include rashes or swelling, flu-like symptoms (fever, nausea, vomiting and appetite loss), fatigue and effects on blood pressure (National Cancer Institute, 2006).

Following this discussion on the types of childhood cancers and the available treatment options, it is necessary to outline the course of childhood cancer to facilitate understanding regarding the implications of survival.

UNIVERSITY OF JOHANNESBURG

2.4 The course of childhood cancer

Childhood cancer is diagnosed based on the individual's symptoms and the result of physical examination by a doctor. The cancer diagnosis is usually confirmed by finding cancer cells on microscopic examination of samples from the suspected area. Usually the sample must be a piece of tissue (biopsy), although the examination of blood is adequate in such cases as leukemia. Once the diagnosis is confirmed, parents face the dilemma of telling the child what the problem is. Children's reactions to their illness most often is determined by their understanding of body parts, cognitive development, previous experience and reactions of the family (Harding, 2000).

After the diagnosis, the doctor provides the patient with treatment options best suited to the cancer diagnosed. The age of the child at the time of diagnosis of cancer goes hand in hand with the intensity and duration of the treatment (Bradwell & Hawkins, 2000). Adolescents are able to increasingly understand what the diagnosis of cancer entails through realising the seriousness and life threatening nature of the illness. This alters the adolescents immediate and future plans based on the intensity and side effects of the treatment undertaken (Harding, 2000).

When treatment is successful and cancer is under control the patient is in remission. In complete remission all signs of cancer (including the side effects of treatment) disappear. Partial remission, in which cancer shrinks but does not disappear is also possible. Remission can last several weeks to many years. When in remission children and adolescents are able to resume a full schedule of activities (Rocha, 2001).

The course of cancer diagnosis in childhood may impact the long term outcome of psychological development in the adolescent. In order to better understand the impact of cancer on the adolescent and further implications on survivorship, a discussion of normal adolescent growth and development is necessary.

UNIVERSITY OF JOHANNESBURG

3. ADOLECENCE AS A PSYCHOLOGICAL DEVELOPMENTAL STAGE

Adolescence is often viewed as a period of intense physical and psychological development. Shaffer (2002) distinguishes three periods within this developmental phase. Firstly, in early adolescence, occurring between the ages of 10-13yrs, rapid physical growth and bodily changes present the main challenge. Secondly the chief issues in middle adolescence, occurring between the ages of 14-18yrs, is where adolescents are striving for independence from their parents, and developing a network of social relations with peers of the same and opposite gender. Thirdly late adolescence, occurring between the ages of 19-21yrs, is where the search for identity and future planning dominate (Shaffer, 2002). For the purposes of this research study, the focus is placed on the period of middle adolescence.

According to Erikson's (1963) theory of psychosocial development, the period of adolescence represents the crossroad between childhood and maturity (Shaffer, 2002). The adolescent grapples with the question 'who am I?' Adolescents must establish basic social and occupational identities, or they will remain confused about the roles they should play as adults. The key social agent during this time is the society of peers (Shaffer, 2002). Adolescence is also a time of many transitions in several areas, namely physical, cognitive and psychosocial, impacting on the individual's ability to establish both social and occupational identities. These areas of transition will be discussed briefly in the following section.

3.1 Physical changes

During adolescence there are several physical changes that transpire in the form of physical growth, physical strength, inner organs and puberty and maturation which will be addressed in more detail in this section.

3.1.1 Physical growth

One of the outstanding signs of the onset of adolescence is what is known as the “growth spurt”. This starts in the early adolescent period for females around 10-11 years of age, reaching a peak around 12-13 years of age and thereafter slowing down substantially at age 14. For male adolescents, the “growth spurt” begins at 12-13 years of age, reaching a peak at 15-16 years of age. Thus 10-13 year old female adolescents are usually taller than males of this age group; however around the ages of 15-16 years, males will surpass the females in height (Wolman, 1998).

3.1.2 Physical strength

Adolescent males are physically stronger and heavier than adolescent females as their muscular mass and strength continue to increase in the bones, muscles of the trunk, hands, arms and shoulders. Female adolescents lose lean body mass as their body fat shifts for storage in breasts, abdomen, and upper-back and hip areas. Significant improvements in motor coordination are also noted for both genders (Wolman, 1998).

3.1.3 Inner Organs

During adolescent years the heart doubles in size and weight, but the growth of the heart and of the arteries and veins is quite uneven. There are also substantial changes in the function of the heart. There is a distinct though uneven rise in blood pressure (Wolman, 1998). The lungs grow considerably during adolescence, with males exceeding females in size, weight and lung capacity. This speedy physical growth necessitates enormous amounts of calories and practically all adolescents have voracious appetites, especially during the growth periods (Wolman, 1998).

3.1.4 Puberty and maturation

By middle adolescence, the development of secondary sex characteristics starts to occur. During puberty, changing hormone levels play a role in activating the development of such characteristics. For girls this includes growth of pubic hair, breast development and menarche (first menstrual period). For boys this means: penis growth, voice changes, growth of under arm hair and facial hair. Increased sweat gland activity and the beginning of acne are apparent for both genders in adolescence (Huebner, 2000).

Early physical maturation, especially height, and appearance of secondary physical traits, such as facial hair in male adolescents, offers certain advantages in their interaction with their peers. However, early maturation for female adolescents exposes these individuals to socially disadvantageous situations (Wolman, 1998). Advancing into puberty has strong implications for adolescents as they enter a higher social status and deal with an emerging sexuality. For example: social and cultural factors related to feminine beauty have been tied to the connection between puberty and inadequate body image that appears frequently in female adolescents. For male adolescents hormones are most often implicated in emerging sexuality and aggression (Wolman, 1998).

3.2 Cognitive development

Adolescents' cognitive development can be understood in terms of Jean Piaget's (1975) theory of cognitive development (Shaffer, 2002). According to Piaget, adolescents become formal operators in their ways of thinking. This means there is an overall broadening of thinking abilities, including that of being able to think abstractly and hypothetically. They can discern underlying principles of various phenomena and apply them to new situations. In so doing they are able to consider cause and effect relationships (Wolman, 1998).

Due to the suggestion that the adolescent brain continues to develop through to late adolescence, cognitive changes are evident up until this time (Huebner, 2000). With this

in mind the continuous development of cognitive ability enables adolescents to deepen their understanding of social problems and partake in adult social relations as they grow and become more autonomous in their thinking. This perspective-taking ability results in an increased empathy and concern for others (Shaffer, 2002). In this way a personal code of ethics develops, which further corresponds to the adolescent's own needs and the way they behave (Susman, Feagans & Ray, 1992).

3.3 Psychosocial development

According to Huebner (2000) the following are psychosocial issues faced by adolescents: establishing an identity; establishing autonomy; establishing intimacy and sexual identity; and achievement.

Establishing an identity has been called one of the most important tasks of adolescence. The question of 'who am I?' is not one that adolescents think about on a conscious level. Instead over the course of adolescence, individuals begin to integrate the opinions of influential others (e.g. parents and friends, etc) into their own likes and dislikes. The eventual outcome is individuals with a clear sense of their values and beliefs, occupational goals, and relationship expectations. Such individuals know where they fit (or where they don't want to fit) in their world (Huebner, 2000).

The transition from identification with one's parents towards identification with one's peers is one that greatly defines adolescence. In early adolescence, increased identification with the peer group facilitates the process of separation from parents. This increased identification has special relevance for risk taking because peer pressure is well established as a principal factor in the onset of risk taking behaviors including substance abuse and sexual activity (Susman, Feagans & Ray, 1992).

Belonging to a peer group gives adolescents the illusive feeling of being independent (Wolman, 1998). As members of peer groups adolescents feel more self-confident, more courageous and more outgoing. Adolescence is characterised by plenty of

experimentation (e.g. substance abuse and sexual activity), and belonging to a group enhances the adolescents' self-image as they feel they have more influence and more to say as compared to single individuals. The peer group counteracts the feeling of loneliness, and peer pressure is a powerful motive for group identification, sharing the norms and values of peers and establishing some form of identity for themselves (Wolman, 1998).

Establishing autonomy during adolescence refers to becoming an independent and self governing person within relationships and emotions. Autonomous adolescents' have gained the ability to make and follow through with their own decisions, live by their own set of principles of right and wrong and have become less emotionally dependent on parents (Huebner, 2000). Activities pursued by adolescents' in attempts to become independent involve experimentation with substance and motor vehicle use as well as sexual activity. In order to achieve mastery adolescents may choose to test or verify their physical and psychosocial limits by engaging in risk taking behavior (Susman, Feagans & Ray, 1992).

UNIVERSITY OF JOHANNESBURG

The heightened level of self consciousness during adolescence generates the belief that as individuals, adolescents' are "special" and "unique". In their attempts to achieve a sense of autonomy the adolescent may at times feel conflicted by an over ride of emotions. Quite often adolescents act as if they were on a stage where they expect to be admired or criticised by an audience (Huebner, 2000). The adolescent will act in an unrealistic and irresponsible manner in the belief that bad things happen to "other people" and "not to me" (Wolman, 1998).

The ambivalence of these kind of feelings, may prompt adolescents to feel depressed without any objective reason; they may suddenly feel weak, inadequate and helpless and then shortly after burst with enthusiasm, energy and self-confidence. This defines the difficulty of moving from an un-autonomous position to an autonomous one. They often hate and adore the same things and the same people at the same time (Wolman, 1998). Studies suggest that connections between neurons affecting emotional, physical and

mental abilities are incomplete and that this could be an explanation as to why adolescents seem to be inconsistent in controlling their emotions, impulses and judgments to attain autonomy (Huebner, 2000).

Intimacy, according to Huebner (2000) is first learned within the context of same sex friendships, and then utilised in romantic relationships. Intimacy refers to the close relationships in which individuals are open, honest, caring and trusting. Friendships provide the setting in which adolescents' can practice their social skills with those who are their equals. It is with friends that adolescents' learn to begin, maintain and terminate relationships, practice social skills and become intimate. However Erikson (1963) argues that intimacy is established in young adulthood and not in adolescence (Shaffer, 2002). In young adulthood the focus of the individual is the achievement of love and companionship from one's engagement in friendships. Erikson states that feelings of isolation or loneliness are likely to develop from the inability to form these intimate or close relationships (Shaffer, 2002).

UNIVERSITY OF JOHANNESBURG

Due to the suggestion that adolescence is a period of connection with peers, and where the physical need for sex as well as the emotional need for affection and loyalty is in existence, it can be assumed that the period of adolescence marks the beginning of the development of intimacy on a more superficial level. Therefore adolescence is a period where for the first time; the adolescent is physically mature enough to reproduce and cognitively advanced enough to think about it (Huebner, 2000). In this way the adolescent can think about intimacy. Psychosocial maturity in sex implies the ability to choose a sexual partner and develop a lasting relationship, thereafter providing adequate care for the offspring at a later point in development. One of the major tasks in adolescent behavior is the integration of the sexual urge with an interpersonal relationship which has implications for future relationships (i.e. marriage) (Wolman, 1998).

The need to find out who one is and what one would like to do and accomplish in life is typical of all adolescents'. *Achievement* experienced by adolescents' means they begin to see the relationship between their abilities and using these for their future career

aspirations. In other words adolescents begin to figure out what they are good at and areas in which they are able to strive for success. The achievement lies in the development of ones identity (Huebner, 2000).

With the above in mind, it can be said that the period of adolescent growth and development brings with it various challenges and tribulations. The experience of cancer during adolescence influences emotional, cognitive, social and spiritual development and creates additional challenges for individuals to master developmental tasks and acquire effective coping abilities. The next section will focus on the psychological impact that cancer has on the developing adolescent.

4. PSYCHOLOGICAL IMPACT OF CHILDHOOD CANCER ON ADOLESCENT DEVELOPMENT

The interpretation of having cancer solidifies during the period of adolescence. Despite having received the diagnosis prior to becoming an adolescent (i.e. childhood or early adolescence), adolescents fully understand the seriousness and life threatening nature of having being diagnosed with such an illness. The adolescents' capacity for abstract reasoning adds to the realisation of their vulnerability and finiteness (Harding, 2000).

As adolescence is described as a time of promise where individuals have all of life before them, the deeper understanding of the cancer diagnosis presents the adolescent with the possibility of suffering and dying which is a sabotage of life's basic plan. Despite parental fears that mistakenly lead to the assumption that as children, full understanding of the illness is unclear, adolescents can access adult like feelings and reason like adults (Bradwell & Hawkins, 2000). This means they are able to access feelings of anger, bitterness, frustration, resentment and depression associated with their conceptualisation of being a cancer sufferer (Bradwell & Hawkins, 2000). In addition to the misconception by parents, the adolescent may try to protect their parents from their feelings of fear and apprehension and in so doing experience greater emotional distress (Harding, 2000).

The course of cancer is such that a child becomes dependant on family for support and assistance. As an adolescent this dependence may foster feelings of loss of pride. The practical necessity of depending on parents and care givers during the illness threatens the adolescent patients' attempts to establish independence and a sense of control over their own lives. This may further assault their sense of self esteem as it may involve no displacement from a prior dependent relationship by attempting independence. The perception of the cancer as such may prompt the adolescent to react violently to this intrusion on their lives. They may feel the need to rebel and refuse treatment and no longer want to cooperate (Harding, 2000).

Despite the known effects of the treatment of cancer in childhood, the impact of such may cause major interruptions in the life cycle of adolescent development. The adolescents' social and educational life is affected by the symptoms and side effects of the cancer treatment. Due to constant periods of absenteeism from school as a result of both past and current treatments, the adolescent is separated from the opportunity to form appropriate ties with their main socialising agents (i.e. peers) and attend social events and activities for long periods of time (Bradwell & Hawkins, 2000).This evokes in the adolescent feelings of no control over the situation. Furthermore the curtailment of normal recreational activities may cause anger and depression as well as feelings of jealousy towards 'healthy' friends (Wilkinson-Carr, 2000). As much of the adolescents' social life revolves around school, weeks of diagnostic treatments may result in social isolation and withdrawal (Bradwell & Hawkins, 2000).

Manifestations of depression may follow from this separation from peers, and worries and fears regarding treatment outcome may enhance the adolescents' feeling of isolation. These feelings are further reinforced by the varied reactions of their peers to them being labeled a "cancer sufferer". Adolescents' may lose confidence because of their uncertainty about whether and how they will be accepted by their peers (Wilkinson-Carr, 2000).

Treatment presents a threat to the adolescents' self image which is crucial to this period of development. At this age individuals do no want to be different from their peers. Side effects from treatments (e.g. chemotherapy) such as loss of body weight and hair, and surgical scars are physical conditions that set the adolescent apart from others. For the adolescent this may threaten the degree to which they feel they will be accepted by their peers. As such the adolescent may be driven to engage in behaviors aimed at concealing such physical indicators. Negative reactions from peers lead to further social isolation (Forsbach & Thompson, 2003). Furthermore bodily changes including amputations and skeletal abnormalities may be perceived as stigmas and this can potentiate a decrease in self esteem and thus effect social and emotional adjustment of the developing adolescent (Wilkinson-Carr, 2000). The following quotation is an example of how an adolescent experienced hair loss:

> "*Going back to school was hard work. I hated having no hair and having to wear a hat. Everyone in my year knew why I was wearing a hat and was really caring, whilst those in the year below just thought it would be funny to make comments about me"* (Lawrance & Kirk, 2000, p. 246)

UNIVERSITY OF JOHANNESBURG

This kind of stigma impacts on the dignity of the adolescent with cancer leaving them feeling naked and vulnerable to society. They may feel like they have lost their place in the world where peer pressure defines acceptance. Body image develops from an individual's perceptions of their appearance to others' reactions to their appearance. Low self esteem and diminished self concept are often experienced by adolescents diagnosed with cancer. When evidence of the disease or its treatment is obvious, others in the environment may alter their responses to the adolescent forcing them to feel different and depending on the responses by others there may be a positive or negative impact on the individual's self concept (Wilkinson-Carr, 2000).

The prolonged course of treatment (i.e. the having to "deal with it from week to week") is most debilitating. There is no escape from the inevitable series of events. As one such child cancer sufferer described:

> *"The thing that people don't take into consideration or don't realize is that you have to live with this every single day, twenty-four hours a day of your life. There is nothing you can do about it. This is part of you, now, and there are times when you will be down, and people just don't realize why"* (Chesler & Barbarin, 1987, p. 168).

While individual variables such as age, maturity, cognitive level and affective development affect how a child will respond to cancer treatment, feelings of uncertainty, loss of control, threat to self esteem, struggles for independence and negative feelings are part of the psychological stress that is experienced by children and adolescents undergoing cancer treatment (Wilkinson-Carr, 2000).

As a consequence of dealing simultaneously with normal social situations and with a unique medical situation, children with cancer sometimes feel that they are living in two social worlds. At home and school, children with cancer try to be normal and to live according to the same rules as everybody else. The adolescent is still trying to grow up and master many challenges of everyday existence. In the medical center, these adolescents' are special individuals struggling with life and death, seeing sickness and pain on every side. Adolescents' with cancer overwhelmingly report that their primary goal in relation to these two worlds is to resume a normal path through a normal life as soon as possible (Chesler & Barbarin, 1987).

From the above explication, it seems clear that the strain of surviving cancer can make the natural emotional obstacles of adolescence and growing up that much harder to deal with. The period of struggling with self image, career development, family, friends and later love, courtship and marriage can be much more difficult with adolescents' that have survived cancer (Rogers, 1990). The following section provides a more in depth discussion around the psychological impact of the survival of childhood cancer on adolescent development.

5. PSYCHOLOGICAL IMPACT OF CANCER SURVIVAL ON ADOLESCENT DEVELOPMENT

Surviving cancer does not guarantee the end of stress for the developing adolescent. The adolescent is faced with having to survive more than the disease itself. The psychological impact of the diagnosis and treatment of cancer have consequences that affect the adaptation and integration of the adolescent back to "normality" in the aftermath of having survived cancer (Bauld, Anderson & Arnold, 1998). The adolescent therefore needs to adjust to several concerns, including feelings of fear and anxiety, body image concerns, academic and intellectual concerns as well as the negative and positive perceptions generated by the cancer experience. These will be discussed in more detail below.

Feelings of fear and anxiety regarding the return of the cancer create uncertainty and insecurity of the future for the adolescent. Returning to school, poor academic performance, forming and reestablishing relationships are further concerns for the adolescent cancer survivor. In addition, the impact of physical side effects of treatment result in disturbance over the appearance of body image, sexuality and attractiveness and it is required of the adolescent to cope with the damage this has done to self concept, self esteem, identity and autonomy (Bauld, Anderson & Arnold, 1998).

The long-term physical late effects of cancer treatment mentioned impose various difficulties for the adolescent survivor. Fears associated with organ damage, decreased growth and as well as infertility are among these difficulties that are a threat to normal development. Scars and cardiac conditions associated with bone marrow transplantations for instance, are contributing factors to lower levels of physical functioning, physical role performance and general physical health in adolescent cancer survivors limiting their tools for identity development (Bruce, 2006). These performance limitations can restrict the adolescent survivor's ability to participate fully in daily activities necessary for self care, home management or work (Ness, Mertens, Hudson & Wall, 2005).

Due to the tenuous nature of remission, the continued possibility of relapse or recurrence, and the unknown and unpredictable nature of the after effects of many types of cancer treatments, uncertainty continues to be a central feature in many survivors' lives even after treatment has ceased (Parry, 2003). As such adolescent cancer survivors may display less risk behavior (which is a normal aspect to adolescent development) than their healthy peers because they are aware of just how vulnerable their health is. Studies have indicated that survivors of childhood cancer have completed fewer developmental milestones due their preoccupation with this vulnerability. Delays in autonomy, social development and psycho-sexual development are noted as a result of the survivor's resistance to normal experimentation or risk taking behavior and rather the display of more protective health behaviors (Stam, Grootenhuis & Last, 2005).

Academic and intellectual concerns occur when the adolescent cancer survivor is faced with resuming normal life outside of being a cancer sufferer. School, associated activities and academic achievement become a central feature once again and the adolescent begins to think about future prospects with regards to career and employment options. The success of reintegration of the adolescent cancer survivor into school is impacted by the effects of treatment. Significant cognitive difficulties may be a result of the cancer treatment, making achievement in academics difficult for the adolescent, and so career or employment options may be limited (Bradwell & Hawkins, 2000). The adolescent's persistence on tasks is lowered due to neurological defects from various treatment processes. Changes in mental functions are such attributes that impact adolescents' physical and psychological development. These changes lead to increased incidences of depression in adolescent survivors (Forsbach & Thompson, 2003).

Perceptions about being a cancer survivor are subjective to the individual and can be interpreted in ways such as destructively traumatic, as a temporary setback with little lasting impact, or as positively life-enhancing. Adolescent survivors of childhood cancer often grow in unpredicted ways, reporting an increase in their level of maturity as well as more clearly defined goals than that of their "healthy" peers (Barraclough, 1999). These perceptions are filtered by the needs of adolescent cancer survivors and their social

support networks and are unique to the survivors self esteem and coping abilities (Ellerton, Stewart, Richie & Hirth, 1996). In certain cases where individuals with cancer had limited support systems, long term psychosocial maladjustment was apparent in survivors (Cantrell, 2007).

Negative perceptions around cancer survival are fed by the myth that because one has survived cancer, nothing else in life could be as bad. In some cases adolescent cancer survivors are expected to cope well with other of life's difficult experiences. This creates expectations from others that most often adolescents may find impossible to meet. The role of the adolescent survivor as a "hero" may be viewed as a burden for the adolescent (Bradwell & Hawkins, 2000).

Positive perceptions are related to the psychosocial maturity of the individual, for despite the resulting handicaps that cancer imposes on adolescent development, striking improvements in prognosis lie in the varied coping styles and abilities expressed by surviving adolescents'. There is an enhanced self image and self confidence associated with adolescents' that have survived cancer, and comes with this a greater capacity to adjust to stressors (Cantrell, 2007). A further psychological benefit posed by being a survivor is a greater appreciation for life and a better capacity for living in the present. The adolescent survivor shows less concern for trivial matters, thus adding to their ability to cope well with stressors and their willingness to fulfill their own wishes rather than defer to others' opinions (Barraclough, 1999).

A major life event such as a diagnosis of cancer often challenges basic values, important goals, and one's self image. Attempts to understand the personal significance of the event and to cope with the changed reality may lead to new self-perceptions and new appreciations. Cancer survivors frequently report altered priorities, more concern for others, a greater sense of purpose and a greater appreciation for life (Schroevers, Ranchor & Sanderman, 2006). It therefore seems that, despite many negative effects reported as a consequence of having had childhood cancer, there are also positive effects. However less is known about these positive effects.

6. SUMMARY

With the high prevalence of childhood cancer both in South Africa and internationally, a cancer diagnosis in the developing child is a major life event. There are various types of cancers (such as leukemia and bone cancers) diagnosed in childhood, each posing different challenges for adolescent sufferers. Treatment regimes (such as surgery and radiotherapy) for these different cancers are complex and often a combination treatment plan is necessary to insure that the cancer is being treated in the most effective manner. The aggressive nature of these treatment options however results in side effects that impact on normal adolescent development. Adolescence is a period of transition from childhood to adulthood which encompasses several changes on a physical, cognitive, emotional and psychosocial level. Therefore the addition of a cancer diagnosis to the challenges faced in adolescence, places extra stress on the developing adolescent (i.e. the threat to identity development and autonomy). However, having survived cancer can have both positive and negative psychological effects on the adolescent.

The negative aspects associated with the cancer experience have often been the focus in most research studies. Without dismissing the existence of these negative effects, this research study proposes to look at the positive factors that play a role in the diagnosis, treatment and survival of cancer in adolescence. The way in which individuals attempt to understand the personal significance of the cancer experience contributes to their ability to cope with the reality of such an experience. This can lead to self perceptions and appreciations that are descriptors of underlying character strengths. Such strengths of character are defined as some of the positive resources that may assist the individual capacity to cope with cancer. The next chapter of this research study will explore these character strengths in adolescents, in an attempt to link aspects of character strengths to the survival of cancer in adolescence.

CHAPTER 3: CHARACTER STRENGTHS IN ADOLESCENTS

1. INTRODUCTION

This chapter will explore character strengths using the paradigm of positive psychology as an explanatory framework. The concept of positive psychology and its origins will be defined. The various strengths of character will be individually explored in detail in accordance to a specific classification scale known as the Values in Action Inventory for Youth. Evidence for the existence of character strengths in adolescence will be provided and character strengths will be explored in association with childhood cancer, health and illness to explicate the understanding of adolescent cancer survival.

2. POSITIVE PSYCHOLOGY AS AN EXPLANATORY FRAMEWORK

The movement of positive psychology has its origins in the paradigm of salutogenesis. Before embarking on an explanation regarding the development of positive psychology as a framework, it is important to define the essence of what a paradigm is. A paradigm as explained by Kuhn in 1970, describes a set of beliefs fundamental to science, by determining what constitutes a research problem and how a solution to that research problem should be developed (Strumpfer, 1990).

In 1979, Aaron Antonovsky, a medical sociologist, explained that despite being bombarded by multiple stressors in everyday living and undergoing severe traumatic experiences, the existence of individuals managing to cope well and stay healthy was ever present. His attempts to uncover the origins of health gave birth to the paradigm of 'salutogenesis'. This paradigm appeared to contrast the already existing pathogenic view of human functioning, which explored the sources of illness and disease in human beings. (Strumpfer, 1990).

Later the concept of 'salutogenesis' as developed by Antonovsky was broadened to that which is known as 'fortigenesis'. Strumpher (1995) proposed this based on writings by

Antonovky, arguing that the factors that influence physical health constituted a much more encompassing dilemma which needed to include sources of strengths. As such the term ‘fortigenesis’ refers to psychological strengths in general. Introducing this construct was not intended to deny the search for origins of health, but to include that which Antonovsky discovered through research, and is closely related to strengths effective at other end points of human functioning (Strumpher, 1995).

Wissing and Van Eeden (2002) further argued that the focus should not only be on the origins of psychological strengths, as implied by the names ‘salutogenesis’ and ‘fortigenesis’, but also on the nature, dynamics and enhancement of psychological wellbeing. They suggested the term psychofortology which is the science of psychological strengths. This refers to the domain of psychology in which psychological well-being is studied (Wissing & Van Eeden, 2002). Consequently in highlighting the importance of human strengths in origins of health, research began in areas emphasising the origins and development of strength in general.

UNIVERSITY OF JOHANNESBURG

The term Positive Psychology, the framework for science and practice, was presented by Seligman and Csikszentmihalyi in the year 2000 at the American Psychological Association (APA) convention. They stated that the aim of positive psychology was to begin to catalyse a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities (Dreyer, 2007).

3. DEFINING POSITIVE PSYCHOLOGY

Positive psychology is the scientific study of optimal human functioning. It aims to discover and promote the factors that allow individuals and communities to thrive (Seligman, 2002). Positive psychology further tries to adapt what is best in the scientific method to the unique problems that human behavior presents to those who wish to understand it in all its complexity (Linley, Joseph, Harrington & Wood, 2006). Thus the aim of positive psychology is to build on what is known about human resilience, strength and growth (Gable & Haidt, 2005). While existing research exploring the negative

aspects of cancer experience and survival is vast, little is known about cancer survival and the positive aspects outlining the experience. The purpose of the current study will be to add to already existing research on adolescent cancer survival, but from a positive psychology perspective.

Positive psychology defines human strength on two levels. Firstly on an individual level, positive psychology identifies positive individual traits. These include the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom. Secondly on a group level, positive psychology defines the civic virtues and institutions that move individuals towards a better citizenship. These include responsibility, nurturance, altruism, civility, moderation, tolerance and work ethic (Seligman & Csikszentmihalyi, 2000). The focus of the current study is on exploring positive interpersonal traits, specifically character strengths in adolescents who have survived cancer.

UNIVERSITY OF JOHANNESBURG

Following on Antonovsky's 1979 conceptualisation of salutogenesis, it is possible that these adolescents may exhibit certain character strengths that may have played some role in their survival of cancer, or even developed as a result of the cancer experience itself. Thus an in depth discussion on character strengths is provided in the next section as a basis for understanding these positive traits in adolescent cancer survival.

4. DEFINING CHARACTER STRENGTHS

Character strengths can be defined as positive traits reflected in an individual's thoughts, feelings and behaviors. They can be further described as the psychological ingredients, processes and mechanisms that define ones virtues. Virtues are explained to be the core characteristics of an individual, and character strengths are the routes for obtaining virtues. For example the virtue of wisdom can be achieved through such strengths as creativity, love of learning, curiosity, open-mindedness and perspective (Peterson & Seligman, 2004).

Peterson & Seligman (2004) developed the Values in Action classification (VIA) that is a specific model describing, assessing and categorising 24 valued character strengths in terms of 6 broad virtue classes. These classes are wisdom, courage, justice, humanity, temperance and transcendence. The VIA classification includes explicit criteria for character strengths and is 'multiaxial' in nature in the sense that it directs the attention of positive psychology to character strengths. Furthermore this classification directs positive psychology to individual talents and abilities, to conditions that enable or disable the strengths, to fulfillments that are associated with strengths, and to outcomes that may ensue from them (Peterson & Seligman, 2004).

The question regarding what defines a character strength was resolved by Peterson and Seligman, developers of the VIA, in the outlining of specific criteria. The following ten criteria were outlined as a baseline for the inclusion of particular character strengths in the VIA (Peterson & Seligman, 2004):

UNIVERSITY OF JOHANNESBURG

- The strength contributes to various fulfillments that constitute a good life for oneself and for others. In other words the characteristic must fulfill the individual;

- The strength is morally valued in the absence of obvious beneficial outcomes;

- The display of the strength by one person does not diminish other people in the vicinity;

- Being able to phrase the "opposite" of a putative strength in a felicitous way counts against regarding it as a character strength;

- The strength needs to manifest in the range of the individuals behavior, thought, feelings and/or actions in such a way that it can be assessed. It should be trait-like in a sense of having a degree of generality across situations and stability across time;

- The strength is distinct from other positive traits in the classification and cannot be decomposed into them;

- The strength is embodied in agreement to ideals;

- The strength has sensible prodigies;

- The strength is found in people who selectively show the total absence of it;

- The strength is sustained and cultivated in practice within institutions and associated rituals by the larger society.

With this in mind the classifications of the six virtues and their relevant character strengths as conceptualised by Peterson and Seligman (2004) will be discussed below.

UNIVERSITY OF JOHANNESBURG

5. THE VIA-YOUTH CLASSIFICATION OF CHARACTER STRENGTHS

5.1 Wisdom

The first cluster of virtues is that of wisdom. Wisdom is defined as an expert knowledge system concerning the fundamental pragmatic issues of existence and has been viewed as a prized trait in all cultures (Seligman & Csikszentmihalyi, 2000). Studies have indicated that wisdom is a cognitive and emotional heuristic for organising knowledge in pursuit of individual and collective excellence (Seligman & Csikszentmihalyi, 2000). As a virtue wisdom holds the following strengths of character:

5.1.1 Creativity

Creativity entails two essential components. First a creative person must produce ideas or behaviors that are recognisably original. Secondly these behaviors or ideas must be adaptive, meaning that they make a positive contribution to the person's life or to the lives of others. This means that the individual has the capacity of thinking of novel and productive ways to do things (Peterson & Seligman, 2004).

5.1.2 Curiosity

Curiosity is defined by interest, novelty-seeking and openness to experience. The individual is able to take interest in all of ongoing experience; finding all aspects and topics fascinating as well as the ability for exploring and discovering new ideas (Park, Peterson & Seligman, 2004).

UNIVERSITY OF JOHANNESBURG

5.1.3 Open-mindedness

Open-mindedness is the willingness to search for evidence against one's favored beliefs, plans or goals, and to weigh such evidence fairly when it is available. This means thinking things through and examining them from all sides, not jumping to conclusions and being able to change one's mind in the light of evidence (Peterson & Seligman, 2004).

5.1.4 Love of Learning

Love of learning refers to a capacity for formally mastering new skills, topics and bodies of knowledge on one's own. It is obviously related to the strength of curiosity but goes beyond it to describe the tendency to add systematically to what one knows (Park, Peterson & Seligman, 2004).

5.1.5 Perspective

To project perspective means one has the wisdom to provide wise counsel to others. Such individuals have ways of looking at the world that make sense to oneself and other people (Park, Peterson & Seligman, 2004).

5.2 Courage

The second cluster of virtues is strengths of courage, which entail the exercise of will to accomplish goals in the face of opposition that could be either external or internal (Peterson & Seligman, 2004). These include:

5.2.1 Authenticity

Integrity, authenticity and honesty capture a character trait in which people are true to themselves and accurately represent their internal states, intentions and commitments, both privately and publically. They present themselves in a genuine way, being without pretense. They are able to take responsibility for their feelings and behaviors, owning them and reaping the benefits by doing so (Peterson & Seligman, 2004).

5.2.2 Bravery

Bravery is the ability to do what needs to be done despite fear (Peterson & Seligman, 2004).

5.2.3 Persistence

Persistence is the ability to finish what one starts by persisting in a course of action in spite of obstacles and taking pleasure in completing tasks (Peterson & Seligman, 2004).

5.2.4 Zest

Zest is living life as an adventure, feeling alive and activated by approaching life with excitement and energy (Peterson & Seligman, 2004).

5.3 Humanity

The third cluster of virtues is strengths of humanity, which include positive traits that manifest in caring relationships with others (Peterson & Seligman, 2004), and incorporate the following strengths:

5.3.1 Kindness

Kindness manifests in showing generosity, nurturance, care, compassion and altruistic love. It is the ability to do good deeds for others, helping them and taking care of them (Park, Peterson & Seligman, 2004).

UNIVERSITY OF JOHANNESBURG

5.3.2 Love

To love means valuing close relations with others, in particular those in which sharing and caring are reciprocated by being able to be close to people (Park, Peterson & Seligman, 2004). This strength subsumes romantic love and friendship, the love between parents and children, mentoring relationships, and the emotional bonds between teammates, coworkers and so forth (Peterson & Seligman, 2004).

5.3.3 Social Intelligence

Social intelligence concerns one's relationships with other people, including social relationships involved in intimacy, trust, persuasion, group membership and political power (Peterson & Seligman, 2004).

5.4 Justice

Strengths of justice are the fourth cluster of virtues and are regarded as broadly interpersonal and relevant to the optimal interaction between the individual and the group or community (Peterson & Seligman, 2004). These consist of:

5.4.1 Fairness

When one exerts the strength of fairness, one is treating all people the same according to notions of fairness and justice. To succeed in being fair means not letting personal feelings bias decisions about others and giving everyone a fair chance (Park, Peterson & Seligman, 2004).

5.4.2 Leadership

Leadership as a personal quality refers to an integrated constellation of cognitive and temperament attributes that foster an orientation toward influencing and helping others, and directing and motivating their actions toward collective success (Peterson & Seligman, 2004). Encouraging a group of which one is a member to get things done and at the same time maintaining good relations within the group defines one as a leader. Leaders have a capacity for organising group activities and seeing that they happen (Park, Peterson & Seligman, 2004).

5.4.3 Teamwork

Being part of a team means working as a member of a group, being loyal to the group and doing one's share. This strength also entails identification with and a sense of obligation to a common good that includes oneself but extends beyond one's personal interests to include the groups of which one is a member (Peterson & Seligman, 2004).

5.5 Temperance

The fifth cluster of virtues, temperance strengths, is defined in part by what a person refrains from doing, and they may be more apparent to observers in their intemperate absence than in their temperate presence (Peterson & Seligman, 2004). The following form part of this group as strengths:

5.5.1 Forgiveness

Forgiveness represents a suite of prosocial changes within the individual who has been offended or damaged by a relationship partner. This includes forgiving those who have done wrong, giving people a second chance and not being vengeful. Those who consistently let bygones be bygones- not because of negative states and traits like fear, shame, guilt or permissiveness and not because of external incentives or threats, but from positive strength of character display forgiveness and mercy (Peterson & Seligman, 2004).

UNIVERSITY OF JOHANNESBURG

5.5.2 Modesty

Modesty occurs by letting one's accomplishments speak for themselves and not regarding oneself as more special than one is. Such individuals do not seek the spotlight and acknowledge mistakes and imperfections. They do not take undue credit for their accomplishments; instead regard themselves as fortunate to be in a position where something good has happened to them (Peterson & Seligman, 2004).

5.5.3 Prudence

This is an orientation to one's personal future. It is a form of practical reasoning and self management that helps one to achieve long term goals effectively by considering carefully along the way the consequences of actions taken and not taken (Peterson & Seligman, 2004). In everyday life, good examples of prudence include saving for the

future, planning for unexpected as well as expected contingencies, avoiding situations known to have led in the past to impulsive choices and making life decisions by considering distant as well as immediate benefits and costs (Park, Peterson & Seligman, 2004).

5.5.4 Self Regulation

This means the capacity to regulate what one feels and does by being disciplined, and controlling one's appetites and emotions. In exercising the character strength of self regulation, the individual exerts control over his or her own responses so as to pursue goals and live up to standards (Peterson & Seligman, 2004).

5.6 Transcendence

Strengths of transcendence, the last cluster of virtues conceptualised by Peterson and Seligman, allow individuals to forge connections to the larger universe and thereby provide a meaning to their lives (Peterson & Seligman, 2004). These include:

5.6.1 Humor

Humor as described by Peterson and Seligman (2004), refers to the playful recognition, enjoyment and creation of incongruity. It is further defined as a composed and cheerful view on adversity that allows one to see its light side and thereby sustain a good mood.

5.6.2 Appreciation for beauty and excellence

The person who notices and appreciates beauty and excellence in different domains of life has the character strength known as awe. This is a virtue of transcendence because it connects those who possess it to something larger than themselves, whether it is beautiful music, skilled athletic performance, the majesty of nature, or the moral brilliance of other

people. People with this strength notice beauty and appreciate it profoundly (Peterson & Seligman, 2004).

5.6.3 Gratitude

Gratitude is a sense of thankfulness in response to a gift. The gift can be tangible and it can be deliberately provided by a specific other person. This means being aware of and thankful for the good things that happen and taking the time to express thanks (Peterson & Seligman, 2004).

5.6.4 Hope (optimism, future mindedness and future orientation)

Hope represents a cognitive, emotional and motivational stance toward the future. This means being able to think about the future and expecting that desired events and outcomes will occur. As such one is able to act in ways believed to make them more likely, and feeling confident that these will ensue given appropriate efforts to sustain good cheer in the here and now and galvanise goal directed actions (Peterson & Seligman, 2004).

5.6.5 Religiousness and spirituality

This strength is defined as having coherent beliefs about the higher purpose and meaning of the universe and one's place within it. People with this strength have a theory about the ultimate meaning of life that shapes their conduct and provides comfort to them. Furthermore, spirituality and religiousness are linked to an interest in moral values and the pursuit of goodness (Peterson & Seligman, 2004).

Having defined the various character strengths that constitute the virtues of wisdom, courage, justice, humanity, temperance and transcendence, it is important for the purposes of this research study to understand these in the context of adolescence. The

next section explores the existing research on the development and existence of character strengths in adolescents.

6. CHARACTER STRENGTHS IN ADOLESCENCE

According to Berkowitz (2002), character strengths are the individual set of psychological characteristics that begin developing in early childhood, and affect the individual's ability and inclination to function morally. As early as infancy and toddlerhood the development of an attachment bond between child and caregiver marks the beginning in the development of character and its related strengths. As the child's level of compliance begins to grow, their ability to regulate their own impulses becomes synonymous to the existence of virtues. The experience of guilt feelings in early childhood results in perspective taking ability or empathy which is a central aspect to mature moral functioning (Berkowitz, 2002).

Character strengths in adolescence lie at the core of this moral competence (i.e. moral reasoning and the formation of moral identity) and are described to guide the individual to desire and do what is worthy and good. This refers to the ability to direct one's behavior towards goals that are considered worthy and good in their own right. It is the knowledge, ability and motivation to pursue and to do good effectively in a way that enhances thinking about moral dilemmas and their resolution as well as moral conduct and prosocial behavior (Park & Peterson, 2006).

The growth of cognitive capacity that comes with adolescence allows the child to begin using judgment in the understanding of relationships between themselves and the environment. This capacity to reason about matters of right and wrong allows for increasingly effective moral decision making contributing to this moral judgment and hence the establishing of strengths of character. This means that the adolescents' criteria for judgment shifts from self-orientated concerns to more socially orientated concerns (Mershart, 2007). Several aspects contribute to the development of character and the

strengths relative to this. Family, school, peers community, religion and biology are all such influential factors (Carr, 2004).

The moral conflict and challenge to the adolescent identity formation posed by these situations, upbringing, and experience can promote positive change and growth in the expression of character strengths. For example in response to a crisis, adolescents may resist intimidation and in this way their defiance of authority empowers their own sense of self, preserves their integrity and promotes their moral commitment to fairness and justice (Stringer, 1994).

The manifestation of character strengths in adolescence are explored in further detail, in terms of available research in relation to the separate virtues of wisdom, courage, justice, humanity, temperance and transcendence, in the following section:

6.1 Wisdom

Creativity is a strength of character present in adolescence which is postulated by the imaginative qualities within the adolescent. Due to the maturation of thinking processes that accompany adolescence, creativity links the experiences of adolescents' to a level of inner freedom relating to thought, action and cognition. Therefore the function of fantasy and imagination is similar to the way play functions for a child. It is a tool or strength of character that the adolescent can use to test and explore reality and their place in it (Mershart, 2007). Creativity has been found to contribute to ego development in adolescence, which as an internal resource includes the capacity to tolerate ambiguity, to differentiate the self from others and cope in a world of affect, abstraction and complexity (Hanson, 1997).

Curiosity and learning develops as adolescents begin to experiment with new situations for the purpose of achieving independence. Adolescents desire to become involved in a wide variety of interests and activities of positive value. The choice of interests in adolescence depends on many factors. These include: level of education, gender,

intelligence , family, social status, prestige value of different interests, peer group influence and opportunities for forming and engaging in various activities (Wolman, 1998).

The capacity for *open-mindedness* during adolescence may be viewed as limited due to the unswerving loyalty and high degree of conformity that exists between the developing adolescent and their peer group. In most cases the adolescent's self concept develops by accepting and sharing the group's ends and means and identifying with their peers (Wolman, 1998). However, as cognitive expansion occurs through adolescence, thinking begins and flows from experiences driving the adolescent into a deeper search for meaning in life. This search for causality or explanation modifies open-mindedness as a strength to the individual character. In other words as the adolescent achieves a sense of differentiation from the family, neighborhood and even society they become more open minded (Mershart, 2007).

In adolescence the ability to take on the *perspective* of another has positive outcomes in terms of pro-social behavior. Studies show that adolescents with more empathy have the ability to understand another's point of view which adds to their own identity development (McMahon, Wernsman & Parnes, 2006). The impact of peer pressure on perspective taking however has not been explored.

6.2 Courage

Although limited research is available regarding *authenticity and integrity* in adolescence, Blau and Stearns (2002) reported on the racial and ethnic differences in adolescents regarding the degree to which they value integrity. This research showed that white adolescent groups place low value on integrity and honesty in contrast to African groups that displayed a high value. Results linking integrity and authenticity to achievement, individuation, and social and cultural diversity as being influential were noted.

Similarly limited research exists with reference to *bravery* as a character strength in adolescence. However bravery in adolescence has been identified in research studies on gang violence and gang membership. The expression of bravery has been viewed as a positive aspect within these contexts (Peacock & Theron, 2007).Additionally, gang violence has been found to provide impoverished youth with an avenue to prove themselves and to demonstrate their worth. A youth who can do little else can demonstrate bravery in the face of death (Prothtrow-Stith, 1991).

Persistence is identified in relation to the ability adolescents' have to recognise and utilise free will and choice and exhibit self restraint and self control. This enables adolescents to recognise their volition concerning where to invest their energy, and adds to their desire to commit to meaningful social groups. A lack of persistence could be observed in indecision, a susceptibility to peer pressure in making commitments and instability which are also issues characteristic in adolescence (Markstrom, Li, Blackshire & Wilfong, 2005).

UNIVERSITY OF JOHANNESBURG

6.3 Humanity

The positive impact of *love* in adolescence is important to the overall well being of the adolescent in terms of resiliency. Benard (2004), indicates results of a study whereby resilient children search out love by connecting or attracting the attention of available adults. Love infuses these individuals with the confidence for other social connections.

As *social intelligence* encompasses both emotional and personal intelligence according to Peterson & Seligman (2004), Benard (2004), reports a study by Goleman (1995) indicating that the benefits of being able to read feelings from nonverbal cues included being better adjusted emotionally, more popular, more outgoing and more sensitive.

Furthermore Benard (2004) discusses a study whereby *kindness* in the form of empathy and caring were aspects considered to be differentiating factors in 18 year old resilient males.

6.4 Justice

Although the early years of childhood are formative, family and peer values play a key role in the socialisation of social responsibility or what is more commonly known as *teamwork.* Studies have shown that adolescents incorporate their own identities in the values of social responsibility and teamwork as standards to live by. It has been argued that the way in which the adolescent grapples with and resolves social issues during the period of adolescence will become an integral part of their personality (Peterson & Seligman, 2004).

Leadership has been found to decrease the range of risky behaviors in adolescents. In addition such individuals are more socially mobile and display good organisational abilities (Allen, Porter & McFarland, 2006). Furthermore leadership shown in adolescence serves as a protective factor and is expressed through positive attitudes or values toward school and academic achievement, positive orientation towards health, intolerance to deviant behavior, positive relations with parents, perceptions of great regulatory controls, higher friend models for conventional behavior and higher involvement in social activities (Jessor, Van Den Bos, Vanderryn, Costa & Turbin,1995). However, adolescents without leadership, display negative outcomes based on the type of peer interaction they may engage in. This occurs in the form of low expectations for success, low self esteem, high hopelessness, high friend models for problem behavior, high connection with friends compared to parents and lower academic achievement (Jessor et al., 1995).

6.5 Temperance

Forgiveness in adolescence has been found to be associated with the moral aspect of psychological development. According to empirical studies reported by Peterson & Seligman (2004), research has confirmed that the willingness to forgive varies as a function of age, with young children least willing to forgive. In early adolescence, individuals forgive only when the offended one has obtained revenge or the transgressor

UNIVERSITY OF JOHANNESBURG

has made restitution. In middle adolescence, the individual forgives because religious, social or moral pressures evoke compliance. In late adolescence individuals forgive because it promotes harmonious society and is an expression of unconditional love (Wolman, 1998).

Self regulation is shown to improve with age and experience, as adolescents' become increasingly able to control and direct their own behavior and learning. This implies that with time adolescents are more capable of restraining their impulses and emotional reactions. In this way they are able to internalise the rules and restrictions that adults have imposed and increasingly evaluate their own behavior. Self regulation may prove difficult for adolescents as it involves the ability to attenuate the frustration and aversiveness of a stressful situation by renouncing emotion-arousing aspects of threatening stimuli (Ayduk, Mendoza-Denton, Mischel, Downey, Peake & Rodriguez, 2000). Peterson & Seligman (2004), report studies by Jang and Smith (1997) as well as that of Gottfredson and Hirschi (1990), where lower degrees of self control have been identified with delinquency and criminal behavior in adolescents. Furthermore self control relates to the degree of adult supervision that permits the adolescent to learn and internalise self regulatory behavior.

Little research is known about *prudence* and *modesty* in relation to adolescence in the context of positive psychology.

6.6 Transcendence

Humor has been found to be associated with lower feelings of loneliness, lower depression and higher self-esteem in adolescents. Adolescence embodies a time of playfulness, energy and laughter where a sense of humor is an aspect of identity development for the adolescent (Wolman, 1998). In general, Benard (2004) reports research by Dacher Kelter on the differing effects of trauma in individuals. It is reported how laughter is high on the list of what can bring about meaning and positive transformation. Humor in adolescence has been studied in relation to coping and defense

strategies used in adolescence. A connection has been established between humor as a predictor of depressive symptoms and adjustment in adolescence as well as having an overall sense of wellbeing (Erikson & Feldstein, 2007).

Hope has been identified through research to be a key psychological strength in youth. Findings have been consistent with theories of motivation in which individual differences in hopeful thinking are conceptualised to play a functional role in linking life events and psychological wellbeing. Adolescents who report higher levels of hope appear to be less at risk for experiencing increases in internalising behavior problems and reductions in life satisfaction when confronted with adverse life events. Although it may not shelter children and adolescence from all negative events in life, hopeful thinking may allow the capacity for better coping for children and adolescence (Valle, Huebner & Suldo, 2006).

Gratitude has been identified as an underestimated character strength, and research on the development, assessment, and promotion of gratitude among children and adolescents appears to have clear implications for happiness and subjective wellbeing (Froh, Miller & Snyder, 2007).

Research links *religiosity* as a strength to adolescent behavior via the influence that religious involvement has on negative behaviors in adolescence. Examples of such behaviors include: delinquency, sexual risk taking and substance use. Religiosity has also been linked to higher rates of prosocial behaviors in adolescence (Hardy & Carlo, 2005). Studies associate religious or spiritual involvement with positive developmental outcomes such as: health, academic achievement, civic engagement, developmental assets, resolution of identity and finding meaning and purpose in life. These are identified through the exploration of the relationship between spiritual development and thriving in adolescence (Roehlkepartain, 2004).

Illness, such as the diagnosis of cancer in adolescence challenges normal adolescent development and could have an effect on the development of character strengths. For the purposes of providing a deeper understanding of possible psychological components

associated with cancer survival, the next section explores character strengths within the spectrum of health, illness and childhood cancer.

7. CHARACTER STRENGTHS IN HEALTH AND ILLNESS AND CHILDHOOD CANCER

No one would wish to experience physical illness or psychological disorder, but research by Peterson, Parks and Seligman (2006) suggests that recovery can sometimes be associated with greater character strengths. For adults who had recovered from serious illness, their appreciation of beauty, bravery, curiosity, fairness, forgiveness, gratitude, humor, kindness, love of learning and spirituality were identified. For those who had recovered from a psychological disorder, their appreciation of beauty, creativity, curiosity, gratitude and love of learning were higher (Peterson, Park & Seligman, 2006).

Despite being positively subjective in nature, character strengths have been described to have a predictive influence on physical and mental health (Carr, 2004). In striving for health and wellness the individual's strength of character supports the innate need to thrive and drives the individual to engage in more health promoting behaviors. These behaviors include: positive responses to medical intervention as well as effective coping in the form of reappraisal, problem solving, avoiding stressful life events and seeking social support (Carr, 2004).

While a large proportion of variance in any disease outcome is accounted for by the local pathology of the organs involved, some variability is also explained by resistance factors of the individual which include the manner of response this individual has to the illness. In other words, by coping the focus on psychological processing is moved from defense to strengths which may explain why some patients survived and others failed in tackling the illness (Moe & Holen, 2000).

Although no relationship has been established between the expression of certain character strengths in overcoming illness and attaining a state of wellness, exploring a possible

connection is important in understanding possible manifestations of specific character strengths in adolescents who have survived childhood cancer. Evidence for the existence of such in adolescents within the separate virtue clusters is provided in the next section. The evidence provided is specific to character strengths in illness, but more importantly childhood cancer survival.

7.1 Wisdom

Although, little research is available on *creativity* and its role in adolescent illness, there is evidence for the actualisation of creative strength for those individuals suffering from traumatic loss or illness. Suffering may enhance one's sense projection, drawing on one's sense of empathy, creativity and the desire to help others (Greenstein & Breitbart, 2000).

Despite no direct relationship having been established about *curiosity and open mindedness/judgment* in adolescent survival of cancer, curiosity is considered part of the normal child's interest in learning more about the world as well as how they choose to think about things (Wolman, 1998). With this in mind it can be hypothesised that this natural curiosity may provoke the adolescent to engage actively in seeking to find out as much as possible regarding their condition. The knowledge of such an inquiry may enhance compliance in treatment and promote health enhancing behavior and so may be present as a character strength in adolescents who have survived cancer.

Achieving wellness by surviving illness has been found through research to translate the *perspective* of the individual, based on their illness experience. Illness-related uncertainty for example can be translated into several positive outcomes. These may include being more positive, having a deeper appreciation for life and letting go of worry and living for today. Findings have shown that although long term survivors of cancer discuss illness as a source of uncertainty, it has also been viewed as an existential certainty in one's own strength and resilience. This refers to the perspective of strength, optimism, a deeper

appreciation for life and overall sense of wellbeing (Parry, 2003). Such a perspective is illustrated by a cancer survivor's qualitative comments:

> *"I think it's made me such a better person than I probably would have been without it…I think it has made me so much better than anything I possibly could have dreamed of being. Because I am much stronger, I'm very independent, and I learned the art of positive thinking"* (Parry, 2003, p 237).

Other studies show primary benefits of children's perspective of illness as routine and ordinary, correlating with the treatment course as being tolerable and ironically predictable. Results showed less burdensome side effects, less pain from invasive procedures and decreased fear and worrying less about unanticipated events in instances where such perspective is reported (Stewart, 2003).

7.2 Courage

Within this cluster of virtues, there is limited evidence linking the positive effects of character strengths of *honesty* and *zest* within the context of adolescent cancer survival. However what has been noted is that the individual perception of the cancer experience may translate into a greater appreciation of close relationships and incorporate a stronger zest for life than previously held by the individual (Barraclough, 1999).

Bravery has been identified in illness as the patient's ability to face their condition with equanimity allowing the patient to persist through treatment of the illness despite the consequences (i.e. death) (Peterson, Park & Seligman, 2006). Research suggests that cancer patients that cope using emotional expression such as bravery maintain a *persistence* that reflects a better quality of life and significantly prolonged survival (Moe & Holen, 2000).

7.3 Humanity

Love has been researched as a vital psychological and physical aspect of well-being relating positively to life satisfaction and enjoyment. Individuals who have never developed a capacity for loving find this lovelessness reflected in their bodies. Research shows this occurs in the form of poor health, muscular tension, shallow breathing and other physical ills (Karen, Hafen, Smith & Frandsen, 2002). In childhood cancer survivors' positive parent-child relations are associated with greater balance and zest for life (Orbuch, Parry, Chesler, Fritz & Repetto, 2005). The relation of love in chronic illness has been researched according to the degree the individual is able to interact with others and feel cared about, providing them with an overall sense of well-being (Cantrell, 2007). The absence of such emotional connection within the social structure of the ill individual, has been discovered to create uncertainty, confusion and concern as well as higher levels of anxiety and fear within the ill individual (Stewart, 2003).

It has been noted how those who are ill may become more aware of the needs of others and also be more willing to help them. *Kindness* is identified in the use of creative energy to perform acts for others that may help that individual performing the act to create more life satisfaction and a sense of overall wellness (Peterson, Parks & Seligman, 2006).
Such is displayed by Hanco Viljoen, a 14 year old cancer survivor whose kindness is an indication of a character strength that may be present within other survivors. The following excerpt from an article illustrates his strength of kindness:

> *"Hanco Viljoen aged 14 knows that the chemicals will save his life but he wishes the chemotherapy did not make him feel so sick he just wants to sleep forever. Thankfully his favorite friend is tucked in next to him in the hospital bed and he draws Fluffy's soft brown body closer and cuddles him. He looks across the other children in the oncology ward and wonders if they are as frightened as he is. Everyone needs a Fluffy and so that's where Hanco's dream began-a dream to collect 100000 teddy bears and give them to children battling with cancer."*(Calitz, 2006).

Despite lack of evidence, this type of kindness could be hypothesised to relate to the implications of love and *social intelligence* as character strengths in health and illness.

7.4 Justice

The virtue cluster of justice does not appear to be well represented by research evidence within the context of adolescent survival of cancer. No existing research could be found.

7.5 Temperance

Forgiveness leads to increased optimistic thinking, increased self- efficacy, higher levels of perceived social and emotional support and decreased hopelessness. For some, forgiveness allows a greater sense of transcendent consciousness and communion with God- all of which might promote physical health (Bono & McCullough, 2006).

Although denial has been negatively linked to health and illness, it has also had a positive impact on health and healing by inspiring the expression of *hope*. Research shows that depending on the severity of the illness the individual is able to think about the extreme consequences (i.e. the possibility of dying) but still feel positive about the ability to get well (Karen, Hafen, Smith & Frandsen, 2002). Hope facilitates adherence to medical advice and treatment which in turn promotes recovery (Carr, 2004).

A healthy sense of *optimism* tempers the reality that comes with the existence of illness by warding off the impact of stress created by the illness and preventing the insidious effects of the chronic arousal of the central nervous system that undermines health (Rice, 1998). Studies have reported that the survival rates of cancer sufferers are higher in those who respond to the illness with a hopeful attitude than those who responded with stoic acceptance or a sense of helplessness and hopelessness. This confirms reports about several examples of individuals whose positive attitude helped to conquer an ill condition such as cancer. Research found traits that were common in these individuals to include

optimism which further facilitated persistence to engage in treatment. Individuals were thus hopeful in their ability to beat cancer (Hafen, Karren, Frandsen, & Smith, 1996).

In a study conducted by Parry and Chesler (2005), it was found that being hopeful was embedded in the essence of well-being among a sample of adolescent survivors of cancer. These adolescents employed psychological cognitive processes of hopefulness as one of the strategies to manage the experience and maintain normalcy (Cantrell, 2007). However, although hope has been identified as a significant determinant of psychosocial adaptation among adolescents' with cancer , a positive relationship between hope and psychosocial functioning has also been reported among healthy adolescents as well. This is indicative of the role hope as strength of character has in optimum wellness and health (Yarcheski, Scoloveno & Mahon, 1994). One can therefore expect to find hope to be prominent amongst adolescents who have survived cancer.

7.6 Transcendence

Humor has been found to transcend the harshness of circumstances surrounded by chronic illness. The phrase "laughter is the best medicine" may be more than just an old saying. It is believed that humor and a strong positive mental attitude are as important for overcoming cancer and other life threatening illnesses as are treatments and drugs (Rocha, 2001). Sharing laughter, good memories and an optimistic view of the future are vital elements to the recovery process. Humor allows the individual to rise above difficult circumstances. It requires looking at ones situation from a distance and separating oneself from it. Being able to express humor is an important way of feeling one's own values (Greenstein & Breitbart, 2000).

Furthermore research shows that *gratitude* is strongly associated with optimism and hope by solidifying and securing supportive social relationships necessary for an overall sense of well being (Bono & McCullough, 2006). Therefore both humor and gratitude may be character strengths exhibited by adolescents who have survived cancer.

In a study of Latino childhood cancer survivors, heightened reports of gratitude were found. Jones (2007) reported that the impact of cancer diagnosis on these individuals seemed to contribute to changing their level of gratitude towards family and friends and the value of life. Appreciation of the little things was also reported through the experience of their life-changing illness.

Appreciation of beauty and excellence generalises beyond self-focus on the individuals' troubles and may lead to an enhanced ability to master a difficult situation and achieve a state of wellness (Peterson, Park & Seligman, 2006). With this in mind, it can be assumed that adolescents who have survived cancer are perhaps more appreciative in comparison to their healthy peers.

Religiousness and spirituality can be thought of as an active stance against illness, and several studies have examined the role of religiousness and spirituality in illness and health. Existing research points to a relationship between religion, better mental health and greater well-being (Peterson, Park & Seligman, 2006; Hardy & Carlo, 2005; Benard, 2004). In terms of adolescent cancer survival, research has linked religious beliefs and involvement to health beliefs, attitudes and behaviors as well as improved wellbeing. For example, Spilka, Zwartjies and Zwartjies (1991) reported how religion appeared to facilitate connectiveness for the child with his/ her family members through the talking out of illness related feelings. Religiosity was also associated with the children's increased understanding of the disease.

8. SUMMARY

Throughout most of its history psychology has been concerned with identifying and remedying human ills, but the field of positive psychology calls for more focus on psychological strengths. Although this focus on illness has broadened the understanding of diseases and the factors that contribute to this, positive psychology has expanded the understanding of the adaptation process by shifting attention to better understanding sources of health.

Character strengths could be viewed as resources that may potentially increase the individuals' resilience to stressful situations (such as illness) and their ability to cope with this. The various character strengths as conceptualized by the VIA Classification are understood to develop from early childhood and continue through adolescence with the enhancement of mechanisms which are acquired by the individual (i.e. moral reasoning). Thus evidence provided in this chapter describes character strengths as they evolve with the challenges faced by the adolescent as well as in the individual's interaction with the surrounding environment.

Finally the role character strengths may have in the survival of illnesses such as childhood cancer was explored as well as the impact of the various character strengths on overall wellbeing. Physical illness is known to compromise functioning and moreover underscore one's mortality, however character strengths are identified as possible positive influences in helping the seriously ill keep on with the rest of their lives despite the illness.

UNIVERSITY OF JOHANNESBURG

The current study aims to explore the character strengths in adolescents who have survived cancer, in comparison with healthy adolescents. The next chapter outlines the methodology used by the researcher for the purposes of achieving this aim.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

1. INTRODUCTION

The following chapter describes the research design, participants, procedure and the measuring instruments used to assess character strengths in adolescents. The main hypothesis as well as the data analysis employed will be presented.

2. RESEARCH DESIGN

An ex post facto comparative design for independent groups was implemented. The two groups were matched in order to eliminate as many confounding variables as possible. In this way individuals are assigned to groups so that a specific variable is balanced or matched across the groups (Gravetter & Forzano, 2003). The intent was to create groups that were equivalent in terms of age, race and gender.

UNIVERSITY OF JOHANNESBURG

3. PARTICIPANTS

The participants were two groups of adolescent volunteers. The experimental group consisted of adolescent survivors of cancer, while the control group consisted of healthy adolescents. A total of 21 participants were found for each group. Criteria for inclusion in the study for both groups were that the adolescents had to be:

- Between the ages of 13-19 years

- Able to understand , speak, and read English for the purposes of completing the VIA strengths questionnaire independently

An additional criterion for the experimental group was that the participants' cancer should be in remission.

4. PROCEDURE

Convenience sampling was used, as the participants were selected on the basis of their availability and willingness to participate in the study. Participants in the experimental group were obtained by approaching oncology wards within hospitals in Gauteng and obtaining the names of survivors of childhood cancer. The researcher then contacted the parents of these patients to request their participation in the study. In practice it was difficult to find cancer survivors who had met the criteria for inclusion in the study.

Participants in the control group were obtained in two ways; firstly by approaching schools within Gauteng and obtaining permission from the principal of the school for the acquisition of volunteers to participate in the study that matched the participants of the experimental group. Secondly adolescents and parents known to the researcher were randomly approached requesting their consent for participation in the study.

UNIVERSITY OF JOHANNESBURG

The participants were informed about the nature of the study. Informed consent by the participants as well as the parent or guardian was obtained. Thereafter participants were instructed about the nature of the VIA questionnaire and how to go about completing it. The questionnaires were given to the participants of both groups to complete on their own, however the researcher was available to the participants should clarification of questions concerning completion of the questionnaire and its contents be needed. This seldom occurred. Questionnaires were collected directly by the researcher. For participants living in Cape Town and Mpumalanga electronic contact was maintained either by fax, telephone or email. The VIA-Youth questionnaire was mailed to these participants which proved effective despite the extensive time needed for this.

In contrast to members of the control group and their parents who showed an eagerness to participate in the study, participants and parents of the experimental group seemed more guarded and ambivalent to volunteer their participation. This appeared to be attributed to the emotional intensity and unpleasantness that the cancer treatment and experience had already imposed on these individuals. The parents of this group were very wary of

possible negative implications for their children in the event of their participation in the study. Therefore to ensure ethical conduct, such concerns were treated with the utmost respect and sensitivity. Time was spent addressing any anxieties and providing parents with explicit information regarding the nature and aims of the study. The option for anonymity was given for all participants. An option for the reporting back of the results for each individual participant was also provided.

5. MEASURING INSTRUMENTS

5.1 Biographical Questionnaire

A biographical questionnaire was designed to obtain additional information and assist in matching the two groups in terms of age, race and gender. The participants in the experimental group could also add qualitative comments regarding their experience of having survived cancer.

UNIVERSITY OF JOHANNESBURG

5.2 The Values in Action Inventory of Strengths for Youth (VIA-Youth)

5.2.1 Rationale

Character can be conceptualised as being a multidimensional construct consisting of a family of positive traits (Park & Peterson, 2006). These positive traits manifest thoughts, feelings and behavior. The VIA-Youth assesses 24 valued character strengths as first conceptualised by Peterson and Seligman (2004) in the VIA classification.

5.2.2 Nature and administration

The VIA-Youth scale is a 198-item, self-report questionnaire. The scale consists of 5-point Likert-style items to measure the degree to which respondents endorse each of the 24 strengths of character in the VIA classification. Individuals are asked to report the degree to which statements reflecting each of the strengths apply to themselves. The self

report nature of this questionnaire is considered a reasonable way of assessing components of character (Peterson & Seligman, 2003). In addition the self report nature of the VIA-Youth does not pose a social desirability threat to reliability since strengths are essentially socially desirable (Steen, Kachorek & Peterson, 2003). The questionnaire takes on average 20-40mins to complete depending on the individual.

5.2.3Scoring and Interpretation

Scoring for the VIA-Youth is determined by allocating points to respective responses on the VIA. The following indicates the response-point assignment on the Likert scale of the VIA

- "very much like me" scores 5 points,
- "mostly like me" scores 4 points,
- "somewhat like me" scores 3 points,
- "a little like me" scores 2 points and
- "Not like me at all" scores 1 point.

UNIVERSITY OF JOHANNESBURG

Scores are also calculated by reverse scoring some of the items. These are indicated on a scoring template. Scores are then totalled and averaged for each of the 24 character strengths. The scores are then interpreted on the basis of high and low scores. In other words the strengths with higher numbers are reflective of leading character strengths for individual respondents. The top five character strengths of individual respondents are often referred to as "signature strengths".

5.2.4 Psychometric properties

The scales for the VIA-Youth have satisfactory alphas (>.70) and substantial test-retest correlation (>.70) and reliability coefficients of 0.72 to 0.91. The VIA-Youth has been validated against self- and other –nomination of character strength and correlates with measures of subjective well being, happiness and school grades (Park & Peterson, 2006).

The VIA-Youth has also been validated within a South African context. The reliability of the VIA-Youth as a whole in a multicultural urban context, as well as in the instances of specific subgroups was found to be acceptable and showed high reliability indices of 0.92 to 0.96 for the total scale's 198 items (Dreyer, 2007).

5.2.5 Motivation for use

The VIA-Youth was administered as it was the only scale to comprehensively measure character strengths in adolescents.

6. AIM AND HYPOTHESIS

The general aim of this study is to compare the character strengths of adolescents who have survived cancer with those of healthy adolescents. Specifically the study aims to determine whether significant differences exist between the two groups in terms of the 24 character strengths measured by the VIA-Youth.

UNIVERSITY OF JOHANNESBURG

The null hypothesis can be stated as follows:

There is no significant difference between the character strengths of adolescents who have survived cancer and the character strengths of healthy adolescents.

The alternative hypothesis is:

There is a significant difference between the character strengths of adolescents who have survived cancer and the character strengths of healthy adolescents.

7. DATA ANALYSIS

Data was analysed with assistance from the Statistical Consultation Service (STATKON) of the University of Johannesburg. The following data analyses were implemented:

- Descriptive statistics were obtained for both groups

- Cronbach alpha reliability coefficients were computed for the 6 virtues of wisdom, courage, humanity, justice, temperance and transcendence as well as for the 24 character strength subscales of these virtues

- Normality of the data was determined by means of Kolmogorov-Smirnov and Shapiro-Wilk tests as well as histogramms

- The statistical significance of differences between the two groups was determined by means of two-sided t-tests and Mann-Whitney-U tests for the 6 virtues as well as the subscales of 24 character strengths.

8. SUMMARY

UNIVERSITY OF JOHANNESBURG

In this chapter, the research methodology, including the research design, participants and the research procedure was discussed. The measuring instrument was discussed with specific reference to its rationale, nature and administration, scoring and interpretation as well as its psychometric properties. The process of data analysis was briefly explicated. In the next chapter the results of this study will be presented and discussed.

CHAPTER 5: RESULTS AND DISSCUSSION OF RESULTS

1. INTRODUCTION

In this chapter the results of the study will be presented and interpreted. Demographic information obtained from the biographical questionnaire will be presented and followed by descriptive statistics related to the normality of distribution as well as the evaluation of reliability of the 6 virtues and 24 strengths. Finally the statistical significance of differences between the character strengths of the two groups will be reported and discussed.

2. DEMOGRAPHIC CHARACTERISITICS OF PARTICIPANTS

As indicated by Table 1, the experimental and control groups were similar with regard to age, race and gender. The mean age for both groups was 15. No volunteers from Colored or Asian groups were obtained.

UNIVERSITY OF JOHANNESBURG

TABLE 1: Demographic characteristics of participants

Variable		Experimental group (Adolescent cancer survivors) (n=21) %	Control group (Healthy adolescents) (n=21) %
Age	13	4.8	4.8
	14	14.3	14.3
	15	33.3	33.3
	16	14.3	14.3
	17	9.5	9.5
	18	9.5	9.5
	19	14.3	14.3
Race	African	11.9	11.9

	White	38.1	38.1
Gender	Male	47.6	47.6
	Female	52.4	52.4

2.1 Types of cancer diagnosed in the experimental group

The most prevalent diagnosis of cancer in the experimental group was leukemia as presented in Table 2. Other diagnoses included lymphoma (19%), bone tumors (19%) and neuroblastoma (4.8%). Based on what the literature revealed, the intensity of treatments regarding these specific types of cancer present several implications for psychological functioning of the adolescent (Bradwell & Hawkins, 2000). Social withdrawal, impact on self esteem and self confidence, body image concerns, fear and uncertainty about the future and depression are amongst the list of factors affecting adolescents with these types of cancers (Bradwell & Hawkins, 2000).

UNIVERSITY OF JOHANNESBURG

TABLE 2: Types of cancer diagnosed in the experimental group

Type of cancer	**Participant %**
Leukemia	57.1
Lymphoma	19
Neuroblastoma	4.8
Bone Tumors	19

3. RELIABILITY INDICES OF THE VIA

Cronbach alpha values were calculated for the total scale and the 6 virtues as well as the 24 character strengths. The Cronbach alpha value of the total scale was 0.95 which indicates acceptable internal consistency. This value is similar to Dreyer's (2007) finding of an overall Cronbach reliability index of 0.93.

3.1 Reliability coefficients for the 6 virtues

As reflected in Table 3, the reliabilities of all 6 scales were satisfactory.

TABLE 3: Reliability indices for the 6 virtues

Virtue Scale	Cronbach Alpha
Wisdom	0.901
Courage	0.921
Humanity	0.844
Justice	0.849
Temperance	0.799
Transcendence	0.901

3.2 Reliability coefficients for 24 individual character strengths

UNIVERSITY OF JOHANNESBURG

Reliability could not be obtained for all 24 individual character strengths as can be seen in Table 4. The reliability indices of the following subscales were above 0.70 and could therefore be seen as satisfactory in terms of internal consistency: creativity, judgment, love of learning, bravery, honesty, persistence, zest, kindness, love, fairness, teamwork, gratitude, hope, humor and spirituality. Modest reliabilities (Park & Peterson, 2006), were found for curiosity, wisdom, leadership and prudence with alpha values smaller than 0.70 but larger than 0.65. The scales measuring social intelligence, self regulation, modesty and appreciation of beauty reflected alpha values lower than 0.65 and can be viewed as being unsatisfactory with regard to validity.

Similar reliability indices were reported by Dreyer (2007), in a sample of South African adolescents. Specifically, she found reliability coefficients for curiosity and perseverance which were lower than 0.70 and more so for love, kindness, social intelligence, self regulation and modesty which yielded alpha values lower than 0.65. Park and Peterson (2006) reported similar low reliabilities for the same character strengths. Peterson and

Seligman (2004) reported that strengths of Temperance (self regulation, prudence and modesty) were more difficult to measure in terms of reliability than the other strengths raising questions as to whether temperance strengths are measurable aspects of character.

The small sample size could possibly have contributed to low reliability indices reported here. In the same light the subjective nature of these particular strengths could make consistency representation difficult to acquire. The degree to which individuals express or experience love, kindness, social intelligence, modesty as well as self regulation cannot be generalised, especially in adolescent survivors of cancer. Also it can be further speculated that these being adolescent participants, the extent of variance is possibly greater for this age group due to developmental aspects or the presence of unknown pathological factors (i.e. depression etc).

TABLE 4: Reliability coefficients for the 24 character strengths of the VIA-Youth.

Character Strength	**Cronbach Alpha**
Creativity	0.770
Curiosity	0.689
Judgment/perspective	0.768
Love of Learning	0.786
Wisdom/ open mindedness	0.681
Bravery	0.845
Honesty/authenticity	0.786
Persistence/ Industry	0.846
Zest	0.805
Kindness	0.745
Love	0.782
Social Intelligence	0.352
Fairness	0.761
Leadership	0.660

UNIVERSITY OF JOHANNESBURG

Teamwork	0.804
Forgiveness	0.687
Modesty	0.495
Prudence	0.669
Self regulation	0.433
Appreciation of Beauty	0.583
Gratitude	0.807
Hope	0.818
Humor	0.758
Spirituality	0.888

4. KURTOSIS, SKEWNESS AND NORMALITY DISTRIBUTION OF THE VIA

Before doing further analysis of the data, the extent to which the distributions of scores were normally distributed was determined for both the 6 virtues and the 24 strengths.

4.1. Kurtosis, skewness and normality distribution of the six virtues of the VIA

As shown in Table 5, the scores of the 6 virtues were normally distributed and further data analysis could be done. Calculations of the Shapiro-Wilks test for normality yielded a p value of greater than 0.05. The mean values calculated for the 6 virtue classes range from 1.98-2.46. These values appear to be lower than those of previous studies. Dreyer (2007) reports mean values greater than 3. It is possible that the low values shown in this study are a result of the small sample size.

TABLE 5: Kurtosis, skewness and normality distribution of the six virtues of the VIA

Virtue Scale	Means	Standard deviation	Skewness	Kurtosis	P value
Wisdom	2.19	0.523	0.56	-0.621	0.795
Courage	2.18	0.601	0.468	0.475	0.225
Humanity	2.15	0.553	0.705	0.614	0.065
Justice	2.22	0.559	0.114	-0.660	0.588
Temperance	2.46	0.467	0.536	0.347	0.451
Transcendence	1.98	0.517	0.437	0.151	0.474

4.2. Kurtosis, skewness and normality distribution of the character strengths of the VIA

Normality distribution of scores for the 24 character strengths were less consistent, as can be seen from Table 6. Most of the character strengths recorded showed a normal distribution with the Shapiro-Wilks test yielding p-values greater than 0.05. However there was a trend towards a more negative distribution for the strengths of creativity judgment, persistence, zest and love. This suggests a trend of responses for these strengths leaning towards the lower end of the Likert scale (i.e. the “the not like me at all/ a little like me” options).

Scores for the character strengths of bravery, kindness, teamwork, gratitude, hope and spirituality were abnormally distributed. These scores were leaning towards a more negative distribution for the group as a whole. In contrast, the strengths of love of learning, honesty, fairness and humor appear to lean toward a more positive distribution. The lack of normal distribution was surprising. This differs from previous studies conducted. Dreyer (2007) showed no abnormalities in distribution of 24 character strengths. However there seem to be slight similarities in negative kurtosis values for character strengths of humor, love of learning and love. Specifically Dreyer (2007) reports -0.546, -0.702 and -0.304 respectively for kurtosis for these character strengths.

Vast differences are noted for kurtosis values for kindness where Dreyer (2007) reports -0.27 for this.

Mean values for the individual character strengths are lower than those indicated by Dreyer (2007). These results may be due to the small participant size. Further, the nature and impact of cancer experience may possibly add to the abnormality of distributions as the expression of particular character strengths become more variable.

TABLE 6: Kurtosis, skewness and normality distribution of the character strengths of the VIA

Character Strength	**Mean**	**Standard deviation**	**Skewness**	**Kurtosis**	**P value**
Creativity	2.09	0.682	0.228	-1.018	0.082
Judgment/perspective	2.24	0.701	0.560	-0.21	0.081
Love of Learning	2.06	0.684	0.507	-0.399	0.164
Bravery	2.11	0.779	0.817	0.745	0.012 *
Honesty/Integrity	2.36	0.769	0.231	-0.304	0.512
Industry/ Persistence	2.14	0.744	0.581	-0.203	0.076
Zest	2.12	0.734	0.866	1.160	0.056
Kindness	2.12	0.711	1.471	4.368	0.001 *
Love	1.99	0.729	0.367	-0.702	0.067
Fairness	2.19	0.708	0.308	0.198	0.297
Teamwork	1.95	0.704	0.416	-0.908	0.033 *
Gratitude	1.79	0.657	1.699	3.735	0.000 *
Hope	1.96	0.709	0.288	-0.977	0.047 *
Humor	2.11	0.730	0.279	-0.286	0.250
Spirituality	1.82	0.883	1.243	1.366	0.000 *

* = Abnormal Distribution, $p<0.05$

UNIVERSITY OF JOHANNESBURG

5. COMPARISON OF THE CHARACTER STRENGTHS OF EXPERIMENTAL AND CONTROL GROUPS

Due to the fact that not all of the subscales measuring character strengths yielded acceptable reliability, as indicated in Table 4, the two groups were only compared with regards to the 6 virtues and 15 character strengths that showed satisfactory Cronbach Alpha scores. Significance of differences was determined applying both parametric techniques (t-tests) and non-parametric techniques (Mann Whitney-U tests) due to the small sample size and the fact that normality could not be assumed for all subscales.

As reflected in Table 7, there was no significant difference between the experimental group and the control groups on either the 6 virtues or the 15 character strengths. The p values calculated by both the parametric and non parametric measures were greater than 0.05. This confirms the null hypothesis, which assumes equal variances for both virtues and character strength between participants of the experimental and control groups.

It is possible that the lack of differences on character strengths between the experimental and control groups is largely due to the small sample size. Based on the hypothesis that the experience of cancer in adolescence can be viewed as an adverse life circumstance that impacts on the psychological functioning of the child, it can be speculated that similar negative experiences are present in the control group as well for no significant differences in character strengths to be noted. Such could include the influences of socioeconomic status, loss of a parent, poverty, cultural factors, specific religious affiliations, as well as the presence of other kinds of adolescent pathology like depression for instance. These factors may have an effect on the expression and development of character strengths such that they resemble those of adolescent cancer survivors. On the other hand, it is also possible that character strengths in adolescents are still developing, and therefore no clear differences were evident despite the incidence of cancer in the experimental group.

UNIVERSITY OF JOHANNESBURG

Age, race and gender were the only factors used to match participants of the control group to those in the experimental group. It is possible that more factors need to be taken into account for differences to become more apparent. However it can be argued that the lack of difference highlights the fact that character is also not negatively affected by the experience and survival of cancer. The similarity of character strengths of the control group to those of the experimental group shows that these strengths are evident in both these groups. Therefore although specific character strengths do not seem to be evident in adolescents who have survived cancer, they do possess similar strengths to those of the control group.

As shown by the mean values indicated with an * in table 7 below, the top five character strengths (in descending order) representative of the control group are: honesty, kindness, perspective/judgment, perspective and creativity. Similarly, those for the experimental group are: zest, perspective/judgment, fairness, honesty and humor. The strengths of honesty and perspective are present for both groups, and, although not statistically significant, the fact that zest was the highest strength in the experimental group could be sustained by Barraclough's (1999) findings that individual perception of the cancer experience may be translated into a greater appreciation of close relationships and incorporate a stronger zest for life than previously held by the individual. This possibility may be further researched in this area in the future.

Humor, present as one of the top five character strengths in the experimental group, but absent in the top five of the control group, possibly indicates the role of humor in adolescent survival of cancer. Humor has been hypothesised to be as important for overcoming cancer and other life threatening illnesses as are treatments and drugs (Rocha, 2001). With this in mind specific research regarding humor as a main focus could prove valuable in understanding its function in adolescent cancer survival. As no research was found connecting the character strength of fairness to the survival of cancer in adolescents, its presence as a top strength amongst survivors of this research study suggests a need for further research on this character strength in this context.

TABLE 7: Comparison of the character strengths of the experimental and control groups

Virtue	**Character Strength**	**Mean**		**Standard Deviation**		**p-value**		**df**
		Control group	**Exp Group**	**Control group**	**Exp Group**	**(t-test)**	**(Mann Whitney –U test)**	
Wisdom		**2.21**	**2.17**	**0.527**	**0.532**	**0.834**	**0.811**	**40**
	Creativity	2.15*	2.05	0.674	0.704	0.642	0.650	40
	Love of learning	2.07	2.06	0.544	0.815	0.965	0.734	40
	Judgment/ perspective	2.21*	2.27*	0.660	0.754	0.781	0.950	40
Courage		**2.21**	**2.15**	**0.496**	**0.702**	**0.762**	**0.466**	**40**
	Honesty	2.55*	2.17*	0.775	0.735	0.113	0.154	40
	Bravery	2.13	2.08	0.719	0.852	0.846	0.791	40
	Persistence	2.19*	2.09	0.599	0.879	0.665	0.377	40
	Zest	1.97	2.27*	0.613	0.825	0.190	0.344	40
Humanity		**2.17**	**2.12**	**0.578**	**0.541**	**0.791**	**0.753**	**40**
	Kindness	2.19*	2.04	0.827	0.582	0.491	0.734	40
	Love	2.02	1.96	0.810	0.658	0.782	0.810	40
Justice		**2.20**	**2.24**	**0.616**	**0.509**	**0.841**	**0.840**	**40**
	Fairness	2.17	2.21*	0.800	0.623	0.868	0.830	40
	Teamwork	1.97	1.93	0.717	0.707	0.839	0.781	40
Temperance		**2.45**	**2.45**	**0.479**	**0.467**	**0.985**	**0.920**	**40**
Transcendence		**1.966**	**1.985**	**0.482**	**0.561**	**0.172**	**1.000**	**40**
	Humor	2.08	2.16*	0.733	0.743	0.721	0.668	40
	Gratitude	1.85	1.74	0.753	0.559	0.609	0.900	40
	Hope	1.99	1.93	0.602	0.817	0.760	0.562	40
	Spirituality	1.81	1.83	0.815	0.968	0.937	0.950	40

* = signature strengths

UNIVERSITY OF JOHANNESBURG

6. QUALITATIVE COMMENTS MADE BY THE EXPERIMENTAL GROUP

In the biographical questionnaire, participants were offered the opportunity to make comments regarding their having survived cancer. Five of the 21 participants did not offer any comments. The comments can be grouped into relevant themes with reference to specific character strengths although the comments did not form part of the main study:

The following comments suggest the role of **hope** as a character strength:

- "It is not easy and it is a life threatening disease, but eventually hope becomes the key to being healed" (Male aged 19)

- "Not much that I can say, besides that I am happy that I have survived and that I hope others that are sick will try to have the patience. It will take time" (Female aged 15)

- "Well what can I say, I have really survived. If you have hope that everything will be ok, things will work out that way. Although at first I didn't have the hope that I would be here today with my friends and family. I thought that I was going to die. But I kept coming to the hospital and hoping that my treatment would work. That is how I survived." (Female aged 15)

The following comments suggest the role of **gratitude** as a character strength:

- " I have gratitude to the people who took care of me and to God for helping me survive" (Male aged 18)

- "Thank you to the hospital for helping me through this very difficult time" (Male aged 17)

UNIVERSITY OF JOHANNESBURG

- “It was a bad and traumatic time in my life and I want to thank God for healing me and for the strength he gave me” (Male aged 16)

- It was difficult for me to survive cancer. I couldn’t believe that I survived. It is hard for me to believe that I am alive after having been so sick. I thank all my doctors for making me live today. I am a survivor” (Male aged 16)

- “I am grateful that there was a cure for me and I am glad that things turned out this way” (Male aged 15)

- “I am grateful as I have survived the cancer and been given a second chance in life” (Male aged 15)

The following comments suggest the role of **religiousness and spirituality** as character strengths:

UNIVERSITY OF JOHANNESBURG

- “Faith and praying to God that I will survive, for us black people this also means belief in the ancestors for help” (Female aged 19)

- “It brought the family closer together and closer to God. There is now a deeper appreciation for the simple things in life.” (Female aged 19)

- “ I have gratitude to the people who took care of me and to God for helping me survive” (Male aged 18)

- “It was a bad and traumatic time in my life and I want to thank God for healing me and for the strength he gave me” (Male aged 16)

- “It is not a nice thing to have cancer, having all the chemotherapy and being sick all the time. Having faith in God is all that helped me through that difficult time.” (Female aged 14)

- “I am a survivor and I feel that I am special and I think that my life has purpose otherwise I would have not survived. I feel I survived because I put my mind to it and God healed me. The fact that I had a support group, my parents, two brothers, family, my school and friends, helped me as well.” (Female aged 13)

The following comments suggest the role of **love** as character strength:

- “The fact that I had a support group, my parents, two brothers, family, my school and friends, helped me as well.” (Female aged 13)

- “It was so difficult through the first two years of treatment, in and out of hospital. I was very weak and I lost a lot of weight. But the doctors’ love and care made me feel comfortable.” (Male aged 15)

UNIVERSITY OF JOHANNESBURG

The following comments suggest the role of **perspective** as character strength:

- “They told me that it would be impossible to play contact sport and today I play rugby, soccer and I know it is possible for me to be active with others. I feel like I was never sick. I feel like a new person” (Male aged 16)

- “I think that it was the most difficult part of my life, but it has made me a stronger person in some ways” (Male aged 14)

The following comment suggests the role of **appreciation of beauty and excellence** as a character strength:

- “It brought the family closer together and closer to God. There is now a deeper appreciation for the simple things in life.” (Female aged 19)

The following comments suggest the role of **persistence** as character strength:

- "I am a survivor and I feel that I am special and I think that my life has purpose otherwise I would have not survived. I feel I survived because I put my mind to it and God healed me. The fact that I had a support group, my parents, two brothers, family, my school and friends, helped me as well." (Female aged 13)

- "Well what can I say, I have really survived. If you have hope that everything will be ok, things will work out that way. Although at first I didn't have the hope that I would be here today with my friends and family. I thought that I was going to die. But I kept coming to the hospital and hoping that my treatment would work. That is how I survived." (Female aged 15)

Despite the fact that no significant differences were evident in character strengths of adolescent cancer survivors and healthy adolescents, these comments point to the existence and possible application of character strengths within the experimental group.

UNIVERSITY JOHANNESBURG

7. SUMMARY

In this chapter demographic characteristics regarding the participants of the current study were provided and the reliability indices for the VIA were discussed. These were found to be unsatisfactory for certain character strengths namely social intelligence, self regulation, modesty and appreciation of beauty. However the low Cronbach alpha scores indicated were also found in previous research studies. Kurtosis, skewness and normality distribution of the VIA was also provided. Most of the character strengths recorded showed normal distribution, except for the strengths of bravery, teamwork, gratitude, hope and spirituality that showed an abnormal distribution. No significant differences could be found between the character strengths of adolescents who have survived cancer and healthy adolescents. However qualitative comments in the experimental group provided some evidence of the existence and application of the character strengths of hope, gratitude, religiousness and spirituality, love, perspective, appreciation of beauty

and lastly persistence in the experience and survival of cancer in childhood. Final conclusions and recommendations will be presented in chapter 6.

UNIVERSITY OF JOHANNESBURG

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

1. INTRODUCTION

In the following chapter conclusions based on a review of the literature will be provided. This includes a discussion of childhood cancer and adolescent survivors as well as character strengths in adolescence. The findings of the empirical study will be summarised. In addition to this the limitations of the current study will be discussed and respective recommendations will be provided.

2. CONCLUSIONS BASED ON THE REVIEW OF THE LITERATURE

2.1 Childhood cancer and adolescent survivors of cancer

The first aim of this study was to explore and explicate relevant literature on childhood cancer in order to understand the psychological impact of cancer in the specific population. Exploration of the literature highlighted the improvements in medical technology and treatment that have contributed greatly to the higher survival rate of children diagnosed with cancer. There seemed to be a focus on the negative aspects of childhood cancer and information regarding the role of psychological aspects, specifically the positive outcomes for such survivors is limited.

The explication of the prevalence, types of childhood cancer, treatment options and the course of childhood cancer provided clarification of the cancer experience. It seemed that cancer impacts negatively on the psychological functioning of the adolescent (Bradwell & Hawkins, 2000). Despite surviving childhood cancer, the challenges faced by adolescent cancer survivors could threaten the individual's sense of identity formation, autonomy and ability to form relationships, which are all aspects of normal adolescent development. The diagnosis of cancer was found to challenge the basic values, important goals and self image of adolescents (Schroevers, Ranchor & Sanderman, 2006). However, further exploration of the individual's attempts to cope with the reality of this

experience led to an understanding of self perceptions and appreciations that could be representative of underlying character strengths. In conclusion, little is known about the role of positive psychological aspects in adolescents who have survived cancer.

2.2 Character strengths in adolescence

The second aim of the study was to explore and explicate relevant literature on character strengths in adolescents and the possible manifestation thereof in the context of illness. Character strengths reflect the positive traits within an individual's thoughts, feelings and behaviors (Peterson & Seligman, 2004). Character strengths are enhanced throughout individual development as a child's increased ability to regulate their impulses leads to the development of virtues (Berkowitz, 2002). In other words virtues are obtained with the development of character strengths. In adolescence, the individual develops mechanisms (such as that of moral reasoning) which mark the development of character and the expression of human strengths (Berkowitz, 2002). Several aspects in the surrounding environment of the child will impact on the intensity of character development in adolescence as well as the way in which an adolescent will express these strengths in adverse situations. These include family, school, peer community, religion and biology (Carr, 2004).

The presence of an illness in the period of adolescence represents an added challenge to the individuals' development and expression of character strengths. Furthermore literature explaining the psychological benefits posed by being a survivor of cancer adds to understanding of character strengths in the context of illness. Adult studies have reported on the role of specific character strengths in the survival of illnesses such as cancer (Peterson, Park & Seligman, 2006). Despite the limited information regarding character strengths in adolescents who have survived cancer, the greater appreciation for life, better capacity for living in the present and less concern for trivial matters reported by such individuals (Barraclough, 1999), is a possible indicator of the relationship between character strengths as a positive psychological outcome and illness. In conclusion the manifestation of character strengths seems evident in the manner in which

adolescents respond in the context of the challenges they face during this period. Similarly, the response the adolescent has to their experience of cancer could indicate an association between character strengths and illness as evident in adult studies (Peterson, Park & Seligman, 2006).

2.3 Differences between the character strengths of adolescents who have survived cancer and healthy adolescents

The third aim of the study was to determine whether significant differences exist between the character strengths of adolescents that have survived cancer and those of healthy adolescents. An ex post facto comparative design for independent groups was implemented and the groups were matched in order to eliminate as many confounding variables as possible. Both groups, consisting of 21 adolescents each, completed the Values in Action Inventory for Youth (VIA-Youth), developed by Peterson & Seligman (2004). The experimental group also had the opportunity to write comments about their experience of having survived cancer.

UNIVERSITY OF JOHANNESBURG

Reliability and normality distribution indices for the virtues and subscales of the VIA-Youth were calculated. Not all the subscales yielded acceptable reliability indices. Specifically reliability indices for character strengths of love, social intelligence, kindness, self regulation and modesty were unsatisfactory. However, these findings seemed to be similar to those reported by Dreyer (2007).

In terms of distribution indices, abnormality was apparent for the strengths of bravery, kindness, teamwork, gratitude, hope and spirituality. These results were surprising as these strengths were hypothesised to have been more prominent within adolescents who had survived cancer. It was postulated that the small sample size could have contributed to the lack of normality in the distribution of scores.

Results of the study indicated no significant differences in character strengths of adolescents who had survived cancer and those of healthy adolescents. This again was a

surprising finding since it was expected on the grounds of available literature that there would be differences in terms of specific character strengths such as hope, religiosity and spirituality, bravery, love and kindness. According to studies reported by Peterson, Park & Seligman (2006), individuals recovering from serious physical illness displayed appreciation of beauty, bravery, curiosity, fairness, forgiveness, gratitude, humor, love of learning and spirituality that was higher than individuals without such a history. Although these are primarily adult studies, it was assumed that similar results would be present in adolescents who had survived cancer.

Although results indicated no significant differences in character strengths of adolescents who have survived cancer and healthy adolescents, the similarities found in character strengths between these two groups confirm that these strengths exist for both groups, and could serve as resources for both groups. The adverse nature of the cancer experience did not seem to either impair or enhance the development of character strengths in adolescents who have survived childhood cancer. It is also possible that character strengths are still developing during adolescence, hence the similarities shown by the results.

Keeping in mind that an individual's character may change in the wake of a crisis such as the experience of childhood cancer (Peterson, Park & Seligman, 2006), results suggested a trend to differences in signature strengths between adolescents having survived cancer and healthy adolescents. Humor, fairness, zest, honesty and perspective were the top strengths in adolescents who have survived cancer, while for the healthy group it was kindness, persistence, honesty, perspective and creativity. However since these differences were not statistically significant, more research is needed to explore this trend.

Having fulfilled the intended aims of the study, the limitations of the study are provided in the next section.

UNIVERSITY OF JOHANNESBURG

3. LIMITATIONS OF THE CURRENT STUDY

The following are regarded as limitations to the current study

- The small sample size due to the nature of the disease;
- There is no indication of character strengths prior to the cancer experience in the adolescent cancer survivors;
- No longitudinal information is available with regards to participants;
- The size of the sample does not accurately represent the general population and so it is difficult to make generalisations;
- Similarly the study is reliant on a self report response system which may have implications for generalisability;
- Confounding variables for healthy adolescents have not fully been eliminated to accurately assess the differences or similarities in character strengths found between adolescents who have survived cancer and healthy adolescents. Such factors include the presence of adolescent pathology such as depression and socio-cultural factors such as financial status, social support and religious affiliations.

UNIVERSITY OF JOHANNESBURG

4. RECOMMENDATIONS

The following recommendations are made:

- A bigger sample group is necessary for more clearly defined results;

- Research on specific character strengths such as humor fairness and zest suggested by the results may help to clarify the role of character strengths in adolescent cancer survival;

- A longitudinal research approach could be beneficial to the understanding of character strength development in adolescence. Also this approach may provide understanding about the development of character strengths through the experience and survival of childhood cancer.

UNIVERSITY OF JOHANNESBURG

PERSONAL NOTE

This research has offered me the opportunity as a student to learn a great deal about childhood cancer in adolescence and the impact this experience has on individuals. My interest in the framework of positive psychology is founded in my belief that human strengths form an important part of the psychology of the individual. In my attempts to uncover and add to information regarding the understanding of human strengths in childhood and adolescence, I was fortunate to engage with the uniqueness of the human experience through my contact with cancer survivors. As adults we may sometimes forget the inner strength we possess to overcome obstacles. Adversity does not only define the negative outcomes of human nature, but the positive outcomes as well. The context of this study allowed me the opportunity to understand this idea more fully. Furthermore the task of conducting research was a challenging and valued experience for me. This experience has developed my understanding of the complex nature of research itself and its significance in the context of psychology.

UNIVERSITY OF JOHANNESBURG

REFERENCES

Allen, J.P., Porter, M.R. & McFarland, F.C. (2006). Leaders and followers in adolescent close friendships: Susceptibility to peer influence as a predictor of risky behavior, friendship instability and depression. *Journal of Developmental Psychopathology, 18*, 155-172. Retrieved from the World Wide Web on the 2 February 2008 at: http://www.pubmedcentral.nih.gov/articlerender.fegi?artid=1557636

Ayduk, O., Mendoza-Denton, R., Mischel, W., Downey, G., Peake, P.K. & Rodriguez, M. (2000). Regulating the interpersonal self: strategies self-regulation for coping with rejection sensitivity. *Journal of Personality and Social Psychology, 79,* 776-792.

Baker, F., Zabora, J., Polland, A., & Wingard, J. (1999). Reintegration after bone marrow transplantation. *Journal of Cancer Practice, 7,* 190-197.

Barraclough, J. (1999). *Cancer and emotion*. 3rd edition. USA: John Wiley & Sons.

Bauld, C., Anderson, V. & Arnold, J. (1998). Psychological aspects of adolescent cancer survival. *Journal of Pediatric Child Health, 34,*120-126.

Benard, B. (2004). *Resiliency, what we have learned*. Oakland: West Ed Pub.

Berkowitz, M. W. (2002). The science of character education. In W. Damon(ed). *Bringing in a New Era in Character Education* (pp.43-63). Stanford: Hoover Institute Press.

Blau, J.R. & Stearns, E. (2002). Adolescent integrity: Race and ethnic differences. *Critical Sociology, 28,*145-167.

UNIVERSITY OF JOHANNESBURG

Boman, K. & Bodegard, G. (2000). Long-term coping in childhood cancer survivors: influence of illness, treatment and demographic background factors. *Acta Pediatrics,89,* 105-111.

Bono, G. & McCullough M.E. (2006). Positive responses to benefit and harm: Bringing forgiveness and gratitude into cognitive psychotherapy. *Journal of Cognitive Psychotherapy: An International Quarterly, 20,* 147-158.

Bradwell, M. & Hawkins, J. (2000). Survivorship and rehabilitation. In H. Lanton (Ed.), *The child with cancer* (pp. 311-350). London: Harcourt Publishers.

Bruce, M. (2006). A systematic and conceptual review of post traumatic stress in childhood cancer survivors and their parents. *Journal of Clinical Health Psychology,26,* 233-256.

Calitz, C. (2006). *Let's grin and bear it.* Retrieved from the World Wide Web on the 25 March 2007 at: www.hanmorbears.co.za.

Cantrell, M.A. (2007). Health related quality of life in childhood cancer: State of the science. *Oncology Nursing Forum, 34,* 103-111.

Carr, A. (2004). *Positive psychology: The science of happiness and human strengths.* USA: Brunner- Routledge.

Chesler, M.A., & Barbarin, O.A. (1987). *Childhood cancer and the family: Meeting the challenge of stress and support.* New York: Brunner/Mazel Publishers.

UNIVERSITY OF JOHANNESBURG

CHOC Childhood Cancer Foundation. (2008). *Childhood cancer statistics*. Retrieved from the World Wide Web on the 10 January 2008 at: http://www.chocpmb.org.za.

Dreyer, J. (2007). *Validation of the values in action inventory of strengths for youth (VIA-Youth) in a group of South African learners*. Unpublished Thesis: North West University.

Ellerton, M.L., Stewart, M.J., Richie, J.A., & Hirth, A.M. (1996). Social support in children with a chronic condition. *Journal of Nursing Research 28*, 15-36.

Erickson, S.J., & Feldstein, S.W. (2007). Adolescent humor and its relationship to coping defense strategies, psychological distress and wellbeing. *Child Psychiatry and Human Development, 37*,225-271.

Forsbach, T. & Thompson, A. (2003). The impact of childhood cancer on adult survivors' interpersonal relationships. *Journal of Childcare in Practice, 9*, 117-128.

Froh, J.J., Miller, D.N. & Snyder, S.F. (2007). Gratitude in children and adolescents: Development, assessment and school based intervention. *Research in Pratice, 2*,1-13.

Gable, L.G., & Haidt, J. (2005). What (and why) is positive psychology. *Review of General Psychology, 9*, 103-110.

Gravetter, F.J. & Foranzo, L. B. (2003). *Research methods*. USA: Thomas Learning.

Greenstein, M. & Breitbart, W. (2000). Cancer and the experience of meaning: A group psychotherapy for people with cancer. *American Journal of Psychotherapy, 54*, 486-501.

Hafen, B.Q., Karren, K.J., Frandsen, K.J. & Smith, N.L. (1996). *Mind /Body health*. Massachusetts: Allyn & Bacon.

UNIVERSITY OF JOHANNESBURG

Hanson, L.J. (1997). *The study of creativity in adolescence as related to ego development and parental attachment.* Retrieved from the World Wide Web on the 14 December 2007 at: http://digitalcommons.pace.edu

Harding, R. (2000). The impact of the diagnosis. In H. Langton (ed.), *The child with cancer. Family- centered care in practice* (pp.110-129). Toronto: Harcourt Publishers.

Hardy, S.A. & Carlo, G. (2005). Religiosity and prosocial behaviors in adolescence: The mediating role of prosocial values. *Journal of Moral Education,34,* 231-249.

Hewitt, M., Weiner,S.L., & Simone, J.V. (2003). *Childhood cancer survivorship: Improving care and quality of life.* USA: National Academies Press.

Huebner, A. (2000). *Adolescent growth and development.* Retrieved from the World Wide Web on the3 January 2008 at: http://www.ext.vt.edu/pubs/family/350-850/350-850.html

Jessor, R., Van Den Bos, J.,Vanderryn, J., Costa, F.M. & Turbin, M. (1995). Protective factors in adolescent problem behavior: Moderate effects and developmental change. *Developmental Psychology, 31,* 923-933.

Jones, L.K. (2007). Surviving childhood cancer: Growing up too fast. *Social Work Today,8,* 20.

Karen, K.J., Hafen, B.Q., Smith,N.L. & Frandsen, K.J. (2002). *Mind/Body health. The effects of attitudes, emotions and relationships, second edition.* New York: Pearson Education Inc.

UNIVERSITY JOHANNESBURG

Kazak, A.E., Christakis, D., Alderfer, M., & Coiro, M.J. (1994). Young adolescent cancer survivors and their parents: Adjustment, learning problems, and gender. *Journal of Family Psychology, 8,* 74-84.

Lamprecht, M. (2007). *There is life after cancer*. You Magazine. Retrieved from the World Wide Web on the 12 October 2007 at: http://www.you.co.za.

Lawrance, T. & Kirk. S. (2000). Bone marrow transplantation. In H. Langton (ed.), *The child with cancer. Family- centered care in practice.* (pp.225-234).Toronto: Harcourt Publishers Limited.

Linley. P.A., Joseph, S., Harrington, S. & Wood, A.M. (2006). Positive psychology. Past, present, and (possible) future. *Journal of Positive Psychology, 1,* 3-16.

Markstrom, C.A., Li, X., Blackshire, S.L. & Wilfong, J.J. (2005). Ego strength development of adolescents involved in adult sponsored structured activities. *Journal of Youth and Adolescence*. Retrieved from the World Wide Web on the 29 January 2008 at: http://goliath.ecnext.com/coms2/summary.

McDougal, S. (1997). *Children with cancer. Effects and educational implications.* Retrieved from the World Wide Web on the 5 February 2006 at: http://www.acor.org/ped-onc/cfissues/backtoschool/cwc.html

McMahon, S.D., Wernsman, J. & Parnes, A.L. (2006). Understanding prosocial behavior: the impact of empathy and gender among African American adolescents. *Journal of Adolescent Health, 39*, 135-137.

Mershart, M. (2007). *The adolescent self and therapeutic communication: An integrated approach for treatment.* Retrieved from the World Wide Web on 28 January 2008 at: http://www.luc.edu/socialwork/praxis/pdfs/vol4_chapter1.pdf

Moe, P.J. & Holen, A. (2000). Long-term coping in childhood cancer survivors-influence of illness, treatment and demographic factors. *Journal of Pediatrics, 89*, 4-6.

Mortara, I. (2006). *Childhood cancer: Rising to the challenge*. Retreived from the World Wide Web on the 23 January 2008 at: http://www.uicc.org

National Cancer Institute. (2006). *Biological therapies for cancer*. Retrieved from the World Wide Web on the 30 march 2008 at: http://www.cancer.gov

Ness,K.K., Mertens, A.C., Hudson, M.M. & Wall, M.M. (2005). Limitations of physical performance and daily activities among long term survivors of childhood cancer. *Annals of Internal Medicine, 143*, 639-648. Retrieved from the World Wide Web on the 4 July 2006 at: http://0-proquest.umi.com.raulib.rau.ac.za.

Orbuch, T.L., Parry, C., Chesler, M., Fritz, J. & Repetto, P. (2005). Parent-child relationships and quality of life: Resilience among childhood cancer survivors. *Family Relations 54*, 171-184.

Park, N.& Peterson, C. (2006). Moral competence and character strengths among adolescents: The development and validation of the values in action inventory of strengths for youth. *Journal of Adolescence,29*, 891-909.

Park, N., Peterson, C. & Seligman, M.E.P. (2004). Strengths of character and well being. *Journal of Social and Clinical Psychology, 23*, 603-619.

Parry, C. (2003). Embracing uncertainty: an exploration of the experiences of childhood cancer survivors. *Journal of Qualitative Health Research, 13*, 227-246.

Parry,C. & Chesler, M.A. (2005). Thematic evidence of psychosocial thriving in childhood cancer survivors. *Journal of Qualitative Health Research, 15*, 1055.

UNIVERSITY OF JOHANNESBURG

Peacock, R. & Theron, A. (2007). Identity development of the incarcerated adolescent with particular reference to prison gang membership. *Acta Criminologica, 20,* 61-74.

Peterson, C., Park, N. & Seligman,M.E.P. (2006). Greater strengths of character and recovery from illness. *Journal of Positive Psychology, 1*, 17-26.

Peterson, C. & Seligman, M.E.P. (2004). *Character strengths and virtues. A handbook and classification*. New York: Oxford University Press.

Peterson, C. & Seligman, M.E.P. (2003). *Values in action (VIA) classification of strengths*. Retrieved from the World Wide Web on the 6 January 2008 at: http://www.psych.upenn.edu/seligman/viamanualintro.pdf.

Prothtrow-Stith, D. (1991). *Deadly consequences.* New York: HarperCollins.

Reis, L.A.G., Smith, M.A.,Gurney, J.G.,Linet,M.,Tamra,T.,Young,J.L. & Bunin,G.R. (1999).*Cancer Incidence and survival among children and adolescents:United States SEER program 1975-1995.* Retrieved from the World Wide Web on 24 March 2008 at: http://seer.cancer.gov/publications/childhood/index.html

Rice, P.L. (1998). *Health psychology*. Pacific Grove: Brookes/Cole.

Rocha, T. L. (2001). *Coping when someone in your family has cancer*. New York: The Rosen Publishing Group.

Roehlkepartain, E.C. (2004). Exploring the scientific and theological perspectives on children's' spirituality. In D. Ratcliff (Ed.), *Children's spirituality: Christian perspectives, research and applications* (pp.205-213).Eugene: Cascades Books.

Rogers, J.E. (1990). *The encyclopedia of health, medical disorders and their treatment: cancer*. New York: Chelsea House Publishers.

Schroevers, M., Ranchor, A.V. & Sanderman, R. (2006). Adjustment to cancer in the 8 years following the diagnosis: a longitudinal study comparing cancer survivors with healthy individuals. *Journal of Psychosocial Oncology, 21*, 1-26.

Seligman, M.E.P. (2002). Positive psychology, positive prevention, and positive therapy. In C.R. Snyder, & S.J. Lopez (eds.), *Handbook of positive psychology* (pp.3-9). New York: Oxford University Press.

Seligman, M. E. P & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist,55*,5-14.

Shaffer, D.R. (2002). *Child and adolescent developmental psychology (6th ed)*. USA: Wadsworth-Thompson Learning.

Spilka, M.G., Zwartjies, W.J. & Zwartjies, G.M. (1991). The role of religion in coping with childhood cancer. *Pastoral Psychology, 39*,295-304.

Stam, H., Grootenhuis, M.A., & Last, B.F. (2005). The course of life of survivors of childhood cancer. *Journal of Psycho-Oncology, 14*, 227-238.

Steen, T.A., Kachorek, L.V. & Peterson, C. (2003). Character strengths among youth. *Journal of Youth and Adolescence, 32*, 5-16.

Stewart, J.L. (2003). "Getting used to it": Children finding the ordinary and routine in the uncertain context of cancer. *Journal of Qualitative Health Research, 13*(3), 394-407.

Stringer, S.A. (1994). *The psychological changes in adolescence: A test of character*. Retrieved from the World Wide Web on 14 November 2007 at: http://scholar.lib.vt.edu/ejournals/ALAN/fall94/Stringer.html

UNIVERSITY OF JOHANNESBURG

Strumpfer, D.J.W. (1995). The origins of health and strength: From ‘salutogenesis’ to ‘fortigenesis’. *South African Journal of Psychology*, *25*, 81-89.

Strumpfer, D.J.W. (1990). Salutogenisis: A new paradigm. *South African Journal of psychology*,*20*, 81-99.

Susman, E.J., Feagans,L.V. &Ray, W.J. (1992).*Emotion, cognition, heath and development in children and adolescence*. New Jersey: Lawrence Erlbaum.

Valle, M.F., Huebner, E.S. & Suldo, S.M. (2006). An analysis of hope as a psychological strength. *Journal of School Psychology, 44,393*-406.

Wilkinson-Carr, K. (2000). Psychological impact of treatment. In H. Langton (ed.), *The child with cancer. Family- centered care in practice* (pp. 303-326). Toronto: Harcourt.

Wissing, M.P. & Van Eeden, C. (2002). Empirical clarification of the nature of psychological well-being. *South African Journal of Psychology, 32*, 32-44.

Wolman, B.B.(1998). *Adolescence: Biological and psychosocial perspectives*. USA: Greenwood Press.

Yarcheski,A., Scoloveno, M.A. & Mahon, N.E. (1994). Social support and well-being in adolescents. The mediating role of hopefulness. *Journal of Nursing Research, 43*, 288-292.

UNIVERSITY OF JOHANNESBURG

UNIVERSITY OF JOHANNESBURG