RELATIONSHIP BETWEEN ADVERSITY QUOTIENT AND RECOVERY OUTCOMES AMONG CANCER PATIENTS ATTENDING PALLIATIVE CARE IN NYERI AND NAIROBI COUNTIES, KENYA

JOYCE MUTHONI WANG’OMBE
C50/CE/20374/2012

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF HUMANITIES AND SOCIAL SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN COUNSELLING PSYCHOLOGY OF KENYATTA UNIVERSITY

NOVEMBER, 2018
DECLARATION
This research is my original work and has not been presented for a degree in any other
university or for any other award.

____________________                               Date      ____________________
JoyceMuthoniWang’ombe,
C50/CE/20374/2012

This research has been submitted for review with my approval as university supervisor.

____________________                               Date      ____________________
Dr. Beatrice Kathungu
Department of Psychology
Kenyatta University
ACKNOWLEDGEMENT
I wish to thank the almighty God for giving me the grace, strength and opportunity to study this program which has greatly impacted my life.

I wish to express my sincere thanks to my supervisor Dr. Beatrice Kathungu for the invaluable time she created to supervise my work and guide me throughout the duration of the study. I have learnt immensely from you during the process of developing this project and your continued patience with me is overwhelming. Your constructive criticisms made the project improve in quality a great deal. May the almighty God bless you.

I sincerely thank the administration and staffs of Nyeri County Referral Hospital, Nairobi Hospice and Nyeri Hospice for the immense support that was accorded to me during the research period. I cannot forget to mention the cancer patients who contributed information in this study and gave me an opportunity to see life through their eyes, to all of you I am greatly humbled by this experience.

To my parents, your support and prayers during this journey deserves my heartfelt gratitude. To my spouse Josh and children Crystal, Bill and Natasha, I am forever indebted to you.
DEDICATION
I wish to dedicate this research to my friend Purity who inspired me to undertake this study. Though you may not be with me physically you may rest assured that in every step of this journey your thoughts gave me the courage to forge ahead. My friend, the journey that you encouraged me to start the Lord has brought it to completion. Sleep well my friend.
TABLE OF CONTENT

DECLARATION ........................................................................................................... ii

ACKNOWLEDGEMENT ............................................................................................... iii

DEDICATION ................................................................................................................ iv

TABLE OF CONTENT ............................................................................................... v

ABSTRACT .................................................................................................................... x

LIST OF TABLES .......................................................................................................... x

LIST OF FIGURES ........................................................................................................ xiii

ABBREVIATIONS AND ACRONYMNS ........................................................................ xiv

OPERATIONAL DEFINITION OF TERMS ................................................................... xv

CHAPTER ONE: INTRODUCTION .............................................................................. 1

1.1 Background of the Study ...................................................................................... 1

1.2 Statement of the Problem ..................................................................................... 7

1.3 Purpose of the Study ........................................................................................... 8

1.4 Objectives of the Study ....................................................................................... 8

The study was guided by the following objectives: ................................................. 8

1.5 Research Questions ............................................................................................ 8

The study sought to answer the following research questions: ............................. 8

1.6 Hypothesis of the Study ..................................................................................... 9

1.7 Justification and Significance .............................................................................. 9

1.8 Scope and Limitations ......................................................................................... 10

1.9 Assumptions ........................................................................................................ 11

CHAPTER TWO: LITERATURE REVIEW ................................................................... 13

2.1 Introduction ........................................................................................................ 13

2.2 Theoretical Framework ....................................................................................... 13
CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.1 Introduction

4.2 Demographic Characteristics of Respondents

4.2.1 Gender of the Respondents

4.2.2 Respondents Age

4.2.3 Respondents Period of Treatment

4.2.4 Respondents Period since Diagnosis

4.3 Levels of Adversity Quotient among Cancer Patients

4.3.1 Levels of Adversity Quotient among cancer patients

4.3.2 Levels of Adversity Quotient by Dimensions

4.4 Nature of Recovery Outcomes among Patients in Palliative Care

4.4.1 Recovery Outcomes in general

4.4.2 Levels of Recovery Outcomes by Dimensions

4.4.2.1 Dimension of Pain as an Indicator of Recovery outcome

4.4.2.2 Weight as an Indicator of Recovery Outcomes

4.4.2.3 Sleep as an Indicator of Recovery Outcomes

4.4.2.4 Quality of Life as an Indicator of Recovery Outcomes

4.5 Relationship between Adversity Quotient and Recovery Outcomes

4.6 Challenges encountered in Palliative Care

4.7 Strategies that can be used to enhance Adversity Quotient and Recovery Outcomes

4.5 Summary of key findings

CHAPTER FIVE: DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
5.2 Discussion of the Findings

5.2.1 Levels of Adversity Quotient among Cancer Patients

5.2.2 Nature of Recovery Outcomes among Patients in Palliative Care

5.2.3 Relationship between Adversity Quotient and Recovery Outcomes

5.2.4 Challenges Encountered in Palliative Care

5.2.5 Strategies that can be used to enhance Adversity Quotient and Recovery Outcomes

5.3 Conclusions

5.4 Recommendations

5.4.1 Recommendation for policy makers and implementers

5.4.2 Recommendation for further research

REFERENCES

APPENDICES

Appendix I: Introduction Letter and Consent Form for The Respondent

Appendix II: Consent Form for The Respondent

Appendix III: Research Authorization Letter From County Health Services (Nairobi City County)

Appendix IV: Research Authorization Letter From Ministry Of Education

Appendix V: Research Authorization Letter From Department Of Health Services County Government Of Nyeri

Appendix VI: Research Application Letter From Ethics Review Committee Kenyatta University

Appendix VII: Research Authorization Letter from Graduate School- Kenyatta University
Appendix VIII: Research Permit from National Commission for Science, Technology and Innovation.................................................................94
Appendix IX: Research Authorization Letter from National Commission for Science, Technology And Innovation.................................................................95
Appendix X: Approval of Research Project Proposal Letter from Graduate School – Kenyatta University.................................................................96
Appendix XI: Research Plan.................................................................................................................................97
Appendix XII: Research Budget...........................................................................................................................98
Appendix XIII: Questionnaire .............................................................................................................................99
ABSTRACT

Diagnosis of cancer profoundly affects every aspect of an individual’s life. These include the psychological, physical, spiritual, interpersonal, and economic aspects of the patients’ functioning. This may negatively interfere with the cancer recovery outcomes. Adversity Quotient (AQ) is a person’s resilience when faced with obstacles, the ability to bounce back to his/her normal functioning. It has been suggested that AQ could be an important aspect of recovery and promoting it may be a critical element in management of cancer. However, there is a dearth of literature on the relationship between AQ and recovery outcomes among cancer patients. The purpose of this study was to investigate the relationship between Adversity Quotient and recovery outcomes among cancer patients attending palliative care in Nyeri and Nairobi Counties, Kenya. The study was guided by the Restorative Well-Being Model and Adversity Quotient Theory. The study adopted a correlation research design. The target population were the cancer patients, attending treatment at the three palliative care units in Nairobi and Nyeri Counties. Systematic random sampling technique was used to obtain a sample of 96 participants. Semi structured questionnaires were used to collect data. Data was analyzed using both descriptive and inferential statistics, specifically Pearson Moment Correlation Coefficient (r). The findings revealed a weak positive between adversity quotient and recovery outcomes suggesting that investing in promoting AQ could be associated with improved recovery outcomes \(r_{(82)} = 0.078, p > 0.05\). The study recommended the need to engage families for support of patients, provision of financial support and increasing the number of counseling sessions as possible strategies for enhancing adversity quotient and recovery outcomes.
## LIST OF TABLES

Table 3.1 Confidence Interval and Standard Errors (Z) ........................................36

Table 3.1 Sample Size ..................................................................................................37
Table 4.1 Distribution of Respondents by Age Category ........................................42
Table 4.2 Respondents Treatment Period .................................................................42
Table 4.3 Respondents Duration since Diagnosis ....................................................43
Table 4.4 Levels of Adversity Quotient in General ..................................................44
Table 4.5 Descriptive Statistics for Levels of Adversity Quotient .........................45
Table 4.6 Frequencies for Levels of Adversity Quotient by County .......................45
Table 4.7 Descriptive Statistics for Adversity Quotient by County .........................45
Table 4.8 Frequencies on the Levels of Adversity Quotient by Dimensions ..........46
Table 4.9 Descriptive statistics for Levels of Adversity Quotient by Dimensions ......47
Table 4.10 Descriptive Statistics for Dimensions of Adversity Quotient by County ....49
Table 4.4.2 Recovery Outcomes in general ..............................................................49
Table 4.12 Descriptive Statistics for Levels of Recovery Outcomes .......................49
Table 4.13 Comparison between Levels of Recovery Outcomes by County ..........50
Table 4.14 Frequency level for Pain as an Indicator of Recovery Outcomes ..........50
Table 4.15 Descriptive Statistics for Pain levels as an Indicator of Recovery Outcome 51
Table 4.16 Frequency for Weight as an Indicator of Recovery Outcomes ..............51
Table 4.17 Descriptive Statistics for Weight as an Indicator of Recovery Outcomes ...52
Table 4.18 Frequency for Sleep as an Indicator of Recovery Outcomes ...............53
Table 4.19 Descriptive Statistics for Sleep as an Indicator of Recovery Outcomes ....53
Table 4.20 Frequency for Quality of Life as an Indicator of Recovery Outcomes .......54
Table 4.21 Descriptive Statistics Quality of Life as an Indicator of Recovery Outcomes 54
Table 4.22 Correlation between Adversity Quotient and Recovery Outcomes ........56
Table 4.23 Correlation between Adversity Quotient and Pain as an Indicator of Recovery Outcomes

Table 4.24 Correlation between Adversity Quotient and Weight as an Indicator of Recovery Outcomes

Table 4.25 Correlation between Adversity Quotient and Sleep as an Indicator of Recovery Outcomes

Table 4.26 Correlation between Adversity Quotient and Quality of Life as an Indicator of Recovery Outcomes

Table 4.27 Correlation between Recovery Outcomes and Dimensions of Control

Table 4.28 Correlation between Recovery Outcomes and Dimensions of Ownership

Table 4.29 Correlation between Recovery Outcomes and Dimensions of Reach

Table 4.30 Correlation between Recovery Outcomes and Endurance Dimension

Table 4.31 Correlation between Dimensions of Adversity Quotient and Dimensions of Recovery Outcomes

Table 4.32 Respondents Participation in different Palliative Care Programs

Table 4.33 Respondents Perceived Challenges in Palliative Care Programs

Table 4.34 Strategies to Enhance Adversity Quotient and Recovery Outcomes
LIST OF FIGURES

Figure 2.1: Conceptual framework ......................................................32

Figure 4.1 .....................................................................................41

Figure 4.2 Scatter of the Relationship between Adversity Quotient and Recovery outcomes ........................................55
# Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune deficiency syndrome</td>
</tr>
<tr>
<td>AQ</td>
<td>Adversity Quotient</td>
</tr>
<tr>
<td>ARP</td>
<td>Adversity Response Profile</td>
</tr>
<tr>
<td>CORE</td>
<td>Control, Ownership, Reach and Endurance Dimensions</td>
</tr>
<tr>
<td>CRH</td>
<td>County Referral Hospital</td>
</tr>
<tr>
<td>HIV</td>
<td>Human immunodeficiency Virus</td>
</tr>
<tr>
<td>KEMRI</td>
<td>Kenya Medical Research Institute</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National Council for Science Technology and Innovation</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
OPERATIONAL DEFINITION OF TERMS

**Adversity quotient** : A person’s resilience when faced with obstacles, to bounce back to his/her normal functioning. It comprises of four components, namely; control, ownership, reach and endurance.

**Adversity quotient profile** : A measure of how a person responds to adversity. It is a self-rating questionnaire designed to measure an individual’s style of responding to unfavorable situations and consists of four dimensions.

**Adversity** : Any difficulty or hardship that individual encounters arising from a condition of suffering, or affliction such as cancer.

**Control** : A component of adversity quotient that refers to the extent to which one can influence the situation in the face of adversity.

**Endurance** : A component of adversity quotient that refers to how long the adversity will continue.

**Ownership** : A component of adversity quotient that refers to the extent to which one holds him/herself responsible for improving the situation when faced with adversity.

**Quality of Life** : A person’s physical, emotional, social, and spiritual well-being.

**Reach** : A component of adversity quotient that refers to the extent to which one prevents adversity to extend
beyond the situation at hand or spill over to other domains of life.

**Palliative care** : Specialized care given to people to minimize progression of life-limiting illness.

**Palliative care units** : Specialized departments in hospitals that provide psychosocial support and medical treatment to patients faced with terminal illnesses.

**Performance** : Ability of an individual to perform activities of daily living such as bathing without help or using minimal assistance.

**Recovery outcomes** : Process of regaining health by the patient, and is indicated by; quality of sleep, experience of pain, changes in weight and quality of life after the cancer diagnosis as in this study.

**Resilience** : Ability to recover quickly when faced with an adversity such as a cancer diagnosis and return back to normal functioning and former health.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study
Accommodating a long-term illness not only involves physical discomfort but also creates many psychological problems for the patients. Such psychological problems may include depression, anxiety, sleep disturbance and low self-concept which can affect the patients’ recovery process (Nadeane, 2006).

This is mainly because there is a close relationship between psychological processes, biological disease processes and their outcomes. Numerous studies (Yurek, Farrar & Andersen, 2000; Turner-Cobb, 2000) have shown that emotional distress and stress are closely related to increased output of the stress-related hormones and to the suppression of the immune function. Further, Lent (2004) explains that the psychological processes which help people to maintain their sense of well-being may be destabilized when confronted by problematic external events such as health threats.

One such long term health threat that has a major negative psychological impact on the patient is cancer. Very few experiences in life can be a source of more fear and anguish than receiving a cancer diagnosis, because of the potential threats that it entails and the countless decisions, treatments, and challenges that it sets in motion (Hoffman & Lent, 2013). This is confirmed by a study by Carpenter (2006) in Ohio USA which utilized a cross-sectional design in a sample of 260 participants, which established that cancer-related health was linked with increased levels of psychological anguish and social support moderated these effects. Cancer which causes 1 in 8 deaths worldwide (World Cancer Report, 2011) refers to the fast formation of abnormal cells that grow beyond their usual limitations. They can then attack adjacent parts of the body and spread to other organs. This ability to spread to other body organs is referred to as metastasis and is attributed to most deaths among cancer patients. According to the International Agency for Research on Cancer (2014) the changing
lifestyles among other factors have resulted in a rapid increase in new cases of cancer. Globally 14 million new cases were reported in 2012, while in Africa 715,000 new cancer cases were reported the same year. In Kenya an average of 39,000 cases of cancer are diagnosed annually (KEMRI, 2014).

A cancer diagnosis has the potential to affect almost every aspect of an individual’s life, including the psychological, physical, spiritual, interpersonal, and economic aspects (Aziz, 2007). In a survey conducted by Wolff (2007) on cancer patients, it was revealed that over 70% of respondents reported experiencing depression due to cancer, 60% experienced relationship problems, while 83% experienced decreased income. This is so particularly for patients diagnosed with a cancer with a poorer prognosis such as lung, pancreatic, head or neck cancer and who tend to report higher levels of suffering (Zabora, Brintzenhofe, Szoc, Curbow, Hooker & Piantados, 2001).

According to World Cancer Report (2014), the cost of cancer is estimated at $1.16 trillion US dollars per year as of 2010. The report indicates that in the United States alone the average five year survival rate is 66% (National Cancer Institute, 2011). The report further indicates that cancer treatment facilities and life-saving therapies are not universally available due to economic reasons. Cancer and other chronic diseases such as high blood pressure and diabetes have become more common. These can cause devastating damage to entire families when the head of household and frequently the only source of income for an extended family, succumbs to cancer. The overall cancer burden represents a crisis for public health and health systems worldwide that require urgent attention.

According to KEMRI (2014), cancer is a major cause of death in Kenya. It is ranked third after cardiovascular and infectious diseases, higher than HIV/AIDS related deaths, malaria and even road carnage. Waruingi and Gacheche (2011) estimates that 27,000 Kenyans die annually from cancer; that is about 74 human beings dying per day in one small
country. However, despite potential adverse impacts associated with cancer, many patients may demonstrate considerable resilience. Stoltz (1997) notes that people with high levels of Adversity Quotients (AQ) are more likely to go on well despite disadvantages or obstacles. They exhibit resilient behavior compared to people with low AQ who have a tendency to quit easily and allow hard times to wear down their energy, performance and spirit.

In a survey conducted by Wolff (2007) on cancer patients, 62% of the respondents indicated that they were currently experiencing good health, while 47% of them indicated that their experience with cancer had improved their lives through the ability to maintain a stable balance and a reasonably good psychological health, even in the face of the highly traumatic diagnosis. This may be explained by factors such as AQ and coping mechanisms that help restore comfort under unfavorable life events. Lent (2004) explains that factors such as how people evaluate life events, recognize their coping effectiveness, and handle coping strategies contribute significantly to people’s reactions towards negative events and trauma, such as a cancer diagnosis. These variables influence responses to diagnosis and treatment which include managing physical outcomes perceptions of pain. (Porter et al., 2002).

The notion of Adversity Quotient (AQ) was postulated by Stoltz (2000), who defines AQ as the ability of the individual to deal with and respond to the adversities of life such as stress, and problems. Adversity quotient is the ability to deal with the adversities of one’s life; it is the art of human resilience. It is about how well one endures adversity and his/her ability to triumph over it (www.peaklearning.com, 2015). The term Adversity Quotient in this study will be used interchangeably with Resilience. Adversity Quotient encompasses four dimensions which are control, ownership, reach and endurance embodied in the acronym CORE.
Stoltz (2000) states that “control” is the degree to which a person believes that he/she can influence what happens next in their life. It determines resilience, wellbeing, and persistence. It helps the individual to determine how much control they have over an adverse event. It is nearly impossible to measure actual control in a given situation. From the beginning, nothing happens without perception of control. Perceived control is therefore deemed to be much more important.

People who respond to adversity as external, temporary and limited have positive helpful styles and are more likely to enjoy life’s benefits. With perceived control, hope and action can be actualized while learned vulnerability can be overcome (Canivel, 2010). The differences between higher AQ and lower responses under this element are consequently diverse. Those with higher AQ’s merely perceive greater control over life’s events than those with lower AQ’s do. Consequently, they take action which may include finding benefit in an adverse situation such as cancer, which may actually enhance recovery itself.

Aquino (2013) conducted a correlational research using a sample of 62 respondents in Tarlac Province of the Philippines on the relationship between the control dimension of AQ and the respondents influence in adverse situations. Findings showed that the respondents who scored low in the control dimension of AQ had significantly little control and influence in adverse situations.

Ownership dimension of AQ is the possibility that somebody will in fact do something to improve their circumstances, in spite of their formal responsibilities (Stoltz, 2000). It determines action, responsibility, accountability and commitment. It determines the extent to which the individual owns the outcome of the adversity. A high ownership score reflects increased ownership by the individual for outcomes, regardless of their cause. A lower the ownership score on the other hand reflects less ownership the outcomes, regardless of their cause. Canivel (2010) observes that people with high AQ have the ability to enhance their
accountability to control, empower and motivate action; while those with low AQ disown the problem causing failure to act, point fingers, give-up, they tend to suffer reduced performance and produce many more negative actions. Owning the outcome is important because it reflects accountability for achieving a specific result in response to a problem (Stoltz, 2000). This to a cancer patient may cause him/her to act with greater responsibility such as compliance in taking medication, observing prescribed diet and lifestyle which may ultimately enhance the recovery outcome.

The reach dimension is the extent to which an individual perceives that an adversity will “reach into” and affect other aspects of the condition or beyond (Stoltz, 2000). It determines effort, energy and burden, stress and tends to have a cumulative effect. It shows how far the adversity will reach into other areas of the individual’s life. Low reach dimension allows the adversity to negatively impact other aspects of one’s life leading to bitterness, lack of sleep, isolation, self-stigmatization and poor decision making. The lower the reach, the more likely you are to attract bad events, allowing them to spread. On the other hand, the higher the AQ, the more likely you are to limit the reach of the problem to the event (Stoltz, 2000).

Endurance dimension is the time-span the individual perceives the condition/adversity will last, or endure (Stoltz, 2000). It determines optimism, hope, and willingness to continue. It asks two related questions: “How long will the adversity last?” and, “How long will the cause of adversity last?” A low Endurance score indicates that the individual is more likely to perceive that the adversity and/or its causes will last a long time (Stoltz, 2000). Individuals who believe in their ability to overcome a situation have a higher AQ than people who don’t believe in their ability to overcome a situation whose cause may be temporary (Stoltz, 2000).

A study by De Silva (2007), which examined the resilience scores in a cohort of cancer patients undergoing chemotherapy, it was established that patients with high levels of resilience identified early in the treatment of cancer had more positive psychological and
recovery outcomes. As Henselmans, Helgeson, Seltman, Vries, Sanderman, Ranchor (2010) report that during the first year of treatment for cancer, patients who reported no significant clinical distress exhibited higher levels of resilience compared to women who reported significant levels of distress. This suggests that cancer patients who have a higher level of resilience report less clinical distress which may indicate favorable recovery outcomes.

According to Hoffman, Lent and Raque-Bogdan (2013) there are several psychological intervention strategies that can be used to help the cancer patient in coping with a cancer diagnosis. The authors observed that environmental support and resources are important factors in psychological and physical wellbeing. They are diverse and serve different functions that include cognitive guidance, emotional support, learning new coping strategies, access to coping models and social persuasion regarding one’s coping efficacy. Valenti (2012) research in Dayton, Ohio on the experience of resilience by cancer survivors’ in the face of adversity established that participants identified AQ protective factors and barriers within the biological, social, psychological, and spiritual domains that assisted them to cope with the impact of cancer. In the Kenyan context limited studies have been conducted to provide empirical evidence that can inform cancer survivors, caretakers and the medical community regarding holistically meeting the needs of people diagnosed with cancer.

Fawzy (1999) observe that majority of interventions for cancer patients fall into four categories, namely education, coping, emotional support and psychotherapy. Consequently this study considers that counseling and information giving may be particularly important where alternative support systems such as religion, family and friends lack capacity which can be the case when faced by a highly challenging stressor such as a cancer diagnosis. By establishing the relationship between AQ and the recovery outcomes the findings of the proposed helped in providing valuable information on the need to enhance AQ among cancer patients so as to promote recovery outcomes.
1.2 Statement of the Problem
In Kenya cancer is ranked as the third leading cause of death (KEMRI, 2014). In the 47 counties, Nairobi and Nyeri Counties have recorded one of the highest incidences of cancer in the country. According to Muriu (2013) data on clinical characteristics of cancer cases at Nyeri Hospice between the years 2011 to 2012 indicated that of the 598 cancer patients that sought treatment in the facility, only 21% were alive by December 2012. Statistics indicating the survival rate of cancer patients in Kenya is less than 30% (Kenya Network of Cancer Organizations, 2013)

The researcher sought to investigate the relationship between adversity quotient and recovery outcomes among cancer patients attending palliative care in Nyeri and Nairobi counties, Kenya. The researcher focused on levels of Adversity Quotient, nature of recovery outcomes, the relationship between Adversity Quotient and recovery outcomes among cancer patients attending palliative care, challenges faced by cancer patients that may influence recovery outcomes in palliative care and strategies that can be used to enhance Adversity Quotient to improve recovery outcomes among cancer patients attending palliative care.

In a study carried out in America (Osowiecki & Compas, 1999; Carver et al., 1993; Epping-Jordan et al., 1999) on the relationship between AQ and the recovery outcomes of cancer patients, the researchers studied the control dimension of AQ. While studies on the role of AQ on recovery outcomes have been carried out, the general tendency have been to focus on chronic illnesses which is life threatening, such as diabetes, heart diseases, asthma and arthritis. Limited studies have been carried out on cancer in relation to AQ and recovery outcomes.

Additionally, in Kenya there is a scarcity of literature on AQ and its relationship to recovery outcomes. Consequently, this prompted the need to investigate the role that AQ might play in cancer recovery outcomes among patients in Kenya and particularly in Nairobi and Nyeri
Counties where reports suggested that the named counties were among the regions identified by the Ministry of Health with the highest prevalence of cancer in the country (Mulemi, 2010)

1.3 Purpose of the Study
The purpose of the study is to investigate the relationship between Adversity Quotient and recovery outcomes among cancer patients attending palliative care in Nairobi and Nyeri Counties, Kenya.

1.4 Objectives of the Study
The study was guided by the following objectives:

i. To find out the levels of Adversity Quotient among cancer patients attending palliative care in Nairobi and Nyeri Counties.

ii. To find out the nature of recovery outcomes among cancer patients attending palliative care in Nairobi and Nyeri Counties.

iii. To establish the relationship between Adversity Quotient and recovery outcomes among cancer patients attending palliative care in Nairobi and Nyeri Counties.

iv. To establish challenges faced by cancer patients that may influence recovery outcomes in palliative care in Nairobi and Nyeri Counties.

v. To find out strategies that can be used to enhance Adversity Quotient to improve recovery outcomes among cancer patients attending palliative care in Nairobi and Nyeri Counties.

1.5 Research Questions
The study sought to answer the following research questions;

i. What are the levels of Adversity Quotient among cancer patients attending palliative care in Nairobi and Nyeri Counties?

ii. What is the nature of recovery outcomes among cancer patients attending palliative care in Nairobi and Nyeri Counties?
iii. What is the relationship between adversity Quotient and recovery outcomes among cancer patients attending palliative care in Nairobi and Nyeri Counties?

iv. What challenges faced by cancer patients may influence recovery outcomes in palliative care in Nairobi and Nyeri Counties?

v. What strategies can be used to enhance Adversity Quotient to improve recovery outcomes among cancer patients attending palliative care in Nairobi and Nyeri Counties?

1.6 Hypothesis of the Study

H$_0$. There is no statistically significant relationship between Adversity Quotient and recovery outcomes among cancer patients in palliative care in Nairobi and Nyeri Counties.

1.7 Justification and Significance

The study sought to establish the relationship between the AQ and cancer patients’ recovery outcomes. According to (WHO, 2014) an estimated 29 million people in the world died from diseases such as cancer that require palliative care and this number continues to rise by the day. Few studies have been done on the relationship between the AQ and cancer patients’ recovery outcomes; therefore more research is needed across the continuum of cancer recovery outcomes in order to provide the basis for continuous improvement. A coordinated agenda for cancer research is necessary in the effective management of cancer. The study was necessitated by evidence of an apparent high incidence of cancer and low recovery outcomes in Nyeri and Nairobi Counties. According to the cancer registry (2014) Nairobi hospice handles patients referred from Kenyatta National Hospital and other health care facilities within and outside Nairobi. In 2006, among data on more than 3000 cases of cancer in Kenya, 60% were from Nairobi. Kinyua and Murimi (2016) reported that the government of Kenya planned to decentralize cancer treatment and care centers from Kenyatta National Hospital to four regions, so that cancer patients will be able to access treatment services at the regional level instead of traveling to Nairobi. Nairobi, Central, Mombasa and Eastern were
identified by the Ministry of Health as the regions with the highest prevalence of cancer. In addition, data on AQ which can inform policy on cancer patients’ quality of life is limited. There are limited studies which focus on adversity quotient and recovery outcomes among cancer patients in Kenya; therefore this study was important as it may add to the body of knowledge by providing important information related to adversity quotient and recovery outcomes with a view of enhancing AQ as a means to boost recovery outcomes among cancer patients. The findings of the study included data on the relationship between AQ and recovery outcomes and may be of benefit to cancer survivors, palliative care units, and the medical fraternity in assessing the psychological readiness of the cancer patients in regard to meeting the needs of individuals diagnosed with cancer.

1.8 Scope and Limitations
The study was carried out in palliative care units in Nairobi and Nyeri Counties, Kenya. It focused on the relationship between the AQ among cancer patients and recovery outcomes. It was guided by Adversity Quotient Theory and Restorative Model of Well-Being. The study used a correlational research design which sought to establish the relationship between AQ and recovery outcomes. The researcher could therefore make conclusions on the relationship of the two variables rather than cause-effect relationship.

The study was limited due to the fact that it covered two counties, Nyeri and Nairobi Counties, thus the findings could only be generalized to other populations with caution due to the specific population characteristics of Nyeri and Nairobi Counties that may be different from other counties. The AQ profile items could have been conceived by the participants as intruding in their privacy. Thus, the participants were informed on the purpose of the study and anonymity assured.
The study was limited by poor record keeping in most cancer registries in the counties due to challenges that were faced by decentralization from the main Government and thus information of the number of cancer patients had to be sourced from the health facilities. Data was collected by means of self-scoring questionnaires; there was a likelihood of respondent bias as they were tempted to over-report on their AQ. The use of self-report instruments may have prompted the participants to feel the pressure to respond in a desirable way. To reduce this, the researcher assured the participants of anonymity and confidentiality. However it may not have been possible to completely eliminate this bias, therefore the researcher emphasized to the participants on the need to truthfully answer the questionnaire so that only honest responses were collected.

The instruments were administered and completed at the palliative care units. This may have limited the generalization of the results due to possible contamination from the conditions of the palliative care unit and a hostile environment such as doctors’ reviews, chemotherapy, and adverse effects and patients being uncomfortable due to the on-going treatment and privacy. This was mitigated by giving questionnaires to patients who had already completed their review and treatment and also going to the palliative care units on days that the patients were not receiving treatment.

1.9 Assumptions
As this study sought to investigate the relationship between AQ and recovery outcome among cancer patients attending services at palliative care units in Nyeri and Nairobi Counties, the researcher assumed that:

i. There were different levels of adversity quotient and recovery outcomes among cancer patients.

ii. AQ may influence recovery outcomes among cancer patients.

iii. There were strategies that could be used to enhance AQ.
iv. There would be cancer patients available in the palliative care units who would be willing to participate in the study and provide honest responses.

v. The palliative care units would cooperate and consent the study to be carried out in their facilities.

vi. The palliative care unit’s staff would honestly explore the strategies that could be used in enhancing AQ among cancer patients in their various facilities.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
This chapter contained a review of various scholarly works related to the study on the relationship between adversity quotient and recovery outcomes among cancer patients. It has been divided into four sections, namely; theoretical framework, review of related studies, summary of the literature review and a conceptual framework. A critique of the related studies was discussed with the aim of establishing the research gap.

2.2 Theoretical Framework
The study was informed by two theories; the Adversity Quotient Theory by Paul Stoltz (1997) and the Restorative Well-Being Model by Robert W. Lent (2004).

2.2.1 Adversity Quotient Theory
The Adversity Quotient Theory was proposed by Paul Stoltz in 1997; it is a model of how a person responds to harsh conditions and his/her ability to overcome it. Adversity Quotient (AQ) is the science of human resilience (Stoltz, 2000). The AQ theory is broadly grounded in three areas of psychology, which include: the science of the mind and body interaction (psychoneuroimmunology), cognitive psychology (the science of the mind and performance interaction) and the science of the brain (neurophysiology). These three aspects are deemed to equally influence the development of AQ. A persons AQ is seen as inborn and is therefore assumed to have a hereditary predisposition. However according to Stoltz a person can enhance their AQ through systematic training procedures, which are likely to facilitate the long-term consolidation of the acquired skills.

According to Stoltz (2000), the AQ theory has four CORE dimensions that make up the tenets of the theory, namely; control, ownership, reach and endurance. Stoltz (2000) states that “control” is the degree to which a person believes that he/she can have influence what happens next in their life. It determines resilience, wellbeing, and persistence. It helps the
individual to determine how much control they have over an adverse event. It is nearly impossible to measure actual control in a given situation. From the beginning, nothing happens without perception of control. Perceived control is therefore deemed to be much more important. People who respond to adversity as external, temporary and limited have positive helpful styles and are more likely to enjoy life’s benefits. With perceived control, hope and action can be actualized while learned vulnerability can be overcome (Canivel, 2010). The differences between higher AQ and lower responses under this element are consequently diverse. Those with higher AQ’s merely perceive greater control over life’s events than those with lower AQ’s do. Consequently, they take action which may include finding benefit in an adverse situation such as cancer, which may actually enhance recovery itself.

Ownership dimension of AQ is the possibility that somebody will in fact do something to improve their circumstances, in spite of their prescribed responsibilities (Stoltz, 2000). It determines action, responsibility, accountability and commitment. It determines the extent to which the individual owns the outcome of the adversity. A high ownership score reflects increased ownership by the individual for outcomes, regardless of their cause. A lower the ownership score on the other hand reflects less ownership the outcomes, regardless of their cause. Canivel (2010) observes that people with high AQ have the ability to enhance their accountability to control, empower and motivate action; while those with low AQ disown the problem causing failure to act, point fingers, give up, they tend to suffer reduced performance and produce many more negative actions. Owning the outcome is important because it reflects accountability for achieving a specific result in response to a problem (Stoltz, 2000). This to a cancer patient may cause him/her to act with greater responsibility such as compliance in taking medication, observing prescribed diet and lifestyle which may ultimately enhance the recovery outcome.
The reach dimension is the extent to which an individual perceives that an adversity will “reach into” and affect other aspects of the condition or beyond (Stoltz, 2000). It determines effort, energy and burden, stress and tends to have a cumulative effect. It shows how far the adversity will reach into other areas of the individual’s life. Low reach dimension allows the adversity to negatively impact other aspects of one’s life leading to bitterness, lack of sleep, isolation, self-stigmatization and poor decision making. The lower the reach, the more likely you are to attract bad events, allowing them to spread. On the other hand, the higher the AQ, the more likely you are to limit the reach of the problem to the event (Stoltz, 2000).

Endurance dimension is the time-span the individual perceives the condition/adversity will last, or endure (Stoltz, 2000). It determines optimism, hope, and willingness to continue. It asks two related questions: “How long will the adversity last?” and, “How long will the cause of adversity last?” A low Endurance score indicates that the individual is more likely to perceive that the adversity and/or its causes will last a long time (Stoltz, 2000). Individuals who believe in their ability to overcome a situation have a higher AQ than people who don’t believe in their ability to overcome a situation whose cause may be temporary (Stoltz, 2000). People who have a high endurance dimension will always be optimistic about their recovery outcomes as opposed to the latter (Canivel, 2010).

This theory of AQ was found to be relevant in relation to this study because cancer recovery outcome is based on the assumption that the thought and emotional processes determine the potency of body chemistry up to the cellular level. Individuals with high levels of AQ are superlatively prepared to integrate habits of thought and behavior and are not likely to give up or fall half way when confronted by challenges in life. Additionally, accommodating cancer which is a long-term illness not only involves physical discomfort but also creates many psychological problems for the patients. Such psychological problems may include low self-concept, depression, anxiety, and sleep disturbance which can affect the patients’
recovery outcomes. This is mainly because there is a close relationship between psychological processes, biological disease processes and outcomes.

Through AQ the study sought to find out how the cancer patients perceived how they could, manipulate whatever happens next, the possibility that somebody would actually do something to improve their situation, the duration the individual perceived the situation/adversity would last and how eventually adversity would affect other aspects of the person’s life.

Stoltz (2000) stated that people who productively apply AQ perform optimally when faced by adversity. They learn from these challenges and also take action in a healthier and faster way. Rutter (2006) states that AQ is a key factor in the promotion of health and a major construct that deals with the human being’s ability to respond positively to the adverse situations an individual faces, even when these cause a possible risk to his/her health or development.

Research has shown that the process of resilience has three main aspects to the individual which are that individuals at risk showed better results than one expected positive adaptation in spite of the experience of stress and lastly a good recovery from the trauma (Zautra, 2010). Davis (2010) suggested that AQ impacts on the treatment of diverse chronic diseases, such as systemic lupus erythematosus, diabetes, rheumatoid arthritis, juvenile idiopathic arthritis, Chagas disease, cancer.

Chida and Steptoe (2008) adds that protective factors involved in AQ, such as self-esteem, self-care, optimism and positive mood, reduced anxiety independence and social support are related to the influence on health, including biological processes such as neuroendocrine and immune function. Furthermore, some meta-analyses point out the relationship of these factors with symptoms, disease progression and mortality. According to Sutanto (2013) the relationship between low AQ and health indicate deterioration, in regard to the psychological
2.2.2 Restorative Model of Well-Being
The Restorative Model of Well-Being was postulated by Robert Lent in 2004. In relation to this Lent proposed two integrated models that describe how behavioral, social, cognitive and personality factors promote well-being. The basic tenets of the first model deals with well-being under normal life conditions, while the second model deals with coping mechanisms that help restore well-being under adverse conditions (Lent, 2004). Both models are viewed as interconnected and can assist recovery and growth hence they complimentary. In the normative model of wellness, global life satisfaction is conceptualized as being influenced by personality traits and affective disposition, as well as participation in, progress toward, or satisfaction with goals in various life domains.

These variables are mediated further by perceived environmental resources and supports, self-efficacy and outcome expectations. The restorative well-being model is the second and describes how well-being can be restored resulting in positive growth which can be made possible through the normative model. The second model examines the problematic internal states or external variables, which affect one’s emotional state. Consequently, cognitive and behavioral coping strategies, personality variables, coping self-efficacy, and social support and resources determine the resolution of the problem and recovery of life satisfaction (Lent, 2004). This model integrates several theoretical and research findings and thus was found to be a suitable framework for reviewing psychosocial adaptation among cancer patients. In relation to well-being of cancer patients this model was relevant in that the recovery outcomes is characterized by a desire for relief of symptoms such as pain, sleep disturbance and restoration of life satisfaction (Lent, 2004). Despite these two approaches, the goals and focus of cancer treatment can comprise of both the promotion of well-being and the
restoration of well-being (Lent, 2004). Positive interventions significantly enhance well-being by decreasing symptoms of depression, improved sleeping patterns, thinking about positive experiences, increase happiness and reduction of pain.

The restorative model of well-being was found to be relevant in relation to this study because surviving cancer involves not only recovering one’s physical health and adding theoretical years back to one’s life expectancy, but also entails coping with several extra-physical issues such as emotional, social, occupational, financial that in most cases accompany and extend far beyond the delicate experience of cancer identification and management. Additionally, coping with cancer requires the combined effect of the (a) support of the family, palliative care centers, friends, religious organization, hospices, among others (b) the patient’s actions indicated by new ways of living and reactions to situations, (c), new ways of thinking, interpretation of information in the light of the diagnosis as indicated in the patients cognition factors, and lastly (d) the patient’s own personality factors.

All these attributes as Lent’s modelsuggests will generally restore a sense of well-being in the life of a patient after it has been disrupted by the traumatic event of cancer diagnosis. Further, cancer survivorship involves psychological wellbeing and adjustment and includes how people deal with adversity.

2.3 Review of Related Studies

2.3.1 Adversity Quotient among Cancer Patients
The concept of adversity quotient has only recently captured the interest of people studying psychological adjustment in cancer patients (Coughlin, 2008). Stoltz, (1997) explains that AQ is the measure of one’s resilience or an indicator of how one responds to adversity. Bonanno (2004) adds by saying that resilience is the capacity to continue with one’s normal function following stress or loss. Akhtar and Wrenn (2008) argues that resilience does not state that following trauma a person must become exactly as he or she was before, rather, resilience
involves the person adequately adjusting to the psychological consequences of trauma. Collectively, positive emotions have been identified as a common characteristic in individuals who exhibit resilience. Examples of positive emotions include optimism, humor, and hope, which have been demonstrated to help reduce psychological stress and medical care usage following stressful life events (Haglund, Nestadt, Cooper, Southwick & Charney, 2007).

Russell (2013) conducted a longitudinal study on predictors of quality of life in survivors of cancer in Virginia, USA. This study assessed the psychological and physical symptoms, functional status, and health perceptions in six domains: achievement, resilience, satisfaction, discomfort, disorders, and risk, using a sample of 305 respondents. The findings of the study suggest that psychological and physical symptoms, functional status and health perceptions should be assessed and targeted in interventions for cancer survivors to promote recovery outcomes. Future studies need to continue identifying factors related to positive long-term functioning in diverse samples of cancer survivors.

Becker and Newsom (2005) conducted a 10-year longitudinal investigation in Hawaii on the experiences of individuals with chronic illness. Using a sample of was 60 respondents between the ages of 49 and 91. The criterion for inclusion in the studies was the presence of one or more chronic illnesses. The studies mainly focused diabetes mellitus, heart disease/hypertension, asthma, and arthritis. They conducted five (5) in-depth interviews with several open-ended questions, over a period of 10 years. The items focused on the respondent’s health, illnesses, their experiences, health practices, and access to health care. The study established that the AQ displayed in the event of severe illnesses, the respondents reported being initially overwhelmed by their illnesses, however they ultimately demonstrated resolve, perseverance, and resilience regardless of how serious their illnesses were. This study did not look at AQ among cancer patients which the proposed study has investigated.
There has developed great interest in studying AQ in the way patients adjust to cancer, in order to promote well-being and also to minimize the risk of poor adjustment (Aspinwall & MacNamara, 2005). Foster and Fenlon (2011) conducted a study on 105 cancer survivors who were recruited through outpatient clinics in seven cancer centers in different parts of the UK. The study investigated cancer patients’ priorities and AQ in the subsequent year of primary cancer treatment. The study found out that there is likelihood that AQ may be low after treatment and that recovery may include rebuilding lost AQ. The priority in this case was support to control the impact of cancer on everyday life. Self-management support included health professionals, family, peers, friends, employers and online resources. The researchers concluded that low resilience may be a significant barrier to recovery outcomes and that resilience is an important aspect of recovery alongside physical and psychosocial problems in the context of changing health care and cancer follow-up.

A study by Dweck (1997) of 158 ninth grade students in Northern California, established that parents, teachers, peers, and other key people during childhood influence the formation of an individual’s response to adversity. The study further reveals that response to adversity is dynamic. It can be interrupted permanently meaning, it is possible to alter an individual’s brain to achieve success. Molina (2014) reviewed extensive literature on studies assessing AQ among cancer patients during several stages of the adult cancer series in South Africa. The review established that AQ may enable palliative care givers to promote more positive psychosocial outcomes in the process of the cancer experience. For all phases of the cancer continuum, resilience descriptions included preexisting characteristics which included demographics and individual attributes. Others include mechanisms of adaptation, such as coping and medical experiences. Psychosocial outcomes, such as growth and quality of life are also part of the cycle. Promoting resilience is a critical element of patient psychosocial care. The review concluded that palliative care providers may facilitate AQ by recognizing and promoting certain baseline characteristics and optimizing mechanisms of adaptation.
Schmidt-Ehmcke (2008) investigated the relation between resilience and post traumatic growth in a sample of 272 respondents in South Africans who have been exposed to a range of traumatic events. The data yielded a significant relation between the resilience component of and the post traumatic growth index. This study highlights the importance of AQ and recovery outcomes for individuals who have a traumatic event in their lives. As such, interventions that attend to individuals’ expectations for positive experiences and the expansion of social support should be the focus of future clinical and research endeavors of patients with cancer.

The reviewed studies indicate that AQ not only effects recovery outcomes among cancer patients, but is also is associated with long-term increase of quality of life in these patients. Thus measuring AQ is an important attribute in formulating effective interventions to improve the quality of life for cancer patients. It is therefore clear there is an important and positive association between AQ and recovery outcomes. The above studies suggest that AQ may protect cancer patients from the adverse effects of cancer and cancer diagnosis. However, in the Kenya context and particularly in the study area there have been limited studies on relationship between AQ and recovery outcomes among cancer patients. This presented a gap and thus the need for this study.

2.3.2 Recovery Outcomes among Cancer Patients
Studies have shown that while majority of cancer survivors lead healthy, active lives, cancer can sometimes have long-term effects on the body, such as chronic pain, interrupted sleep patterns, weight loss and diminished quality of life. Pain dramatically affects the quality of life while disturbances in sleep patterns can lead to significant daytime tiredness (Berger, 2009). Disrupted sleep patterns are usually associated with aging, illness, situational stress and drug treatment (National Sleep Foundation, 2014). Research has shown that
approximately one-third to one-half of people with cancer experience sleep disturbance (Savard & Morin, 2001).

Other factors that may disrupt the sleep patterns of cancer patients include physical illness, hospitalization, pain, drugs, the psychological impact of a malignant disease and other treatments for cancer (Berger, 2009). Poor sleep negatively affects performance and daytime mood.

Estimates by the National Cancer Institute (2010) indicate that nearly 45% of cancer patients’ experiences sleep disturbances. While there exists psychological and physiological sources of sleep pattern disruption, research has shown that cancer patients are at a greater risk for physiologic disturbances (Berger, 2009). The most commonly reported symptoms of sleep disruption by cancer patients include: insomnia, excessive fatigue, excessive sleepiness, and leg restlessness (Parish, 2009).

According to the NCI, alteration in system function, such as the gastrointestinal and genitourinary system, treatment side effects, tumor progression, thermoregulation disruption are among some of the sources of physiological sources of sleep disruption (National Cancer Institute). Identification and treatment of sleep disorders is a key factor in cancer patients, because it is likely to influence other factors such as perception of tolerance of treatment measures, physical symptoms and quality of life (Stepanski, Walker, Schwartzberg, Blakely, Ong, & Houts, 2008). Consequently it is important to identify the potential cause of the sleep disturbance in order to determine the best means of treatment for cancer patients.

In a study conducted at the University of California San Diego, which evaluated the presence of sleep disturbances in cancer patients undergoing chemotherapy before onset of treatment and thereafter (Liu, Fiorentino, Natarajan, Parker, Mills, Sadler, et al, 2009) the study established that patients who had sleep disturbance before starting treatment had clinically worse symptoms during treatment, which negatively impacted the quality of life (Liu, et al,
In conclusion, the study concluded that early identification and treatment of the sleep disturbance would lead to a decrease in the severity of symptoms and help improve patients' overall quality of life (Liu, et al, 2009).

Studies have shown that a good survival rate for a cancer patient can be significantly affected by a weight loss greater than 6% of normal weight at the time of cancer diagnosis (Wolff, 2007). According to Carver (2006) weight loss is a common phenomenon among people with cancer and is usually the first noticeable sign of the disease. National Cancer Institute (2010) reports that up to 40% of people diagnosed with cancer report unexplained weight loss at the time of diagnosis, and up to 80% of people with advanced cancer experience weight loss and cachexia (muscle loss).

Most people with cancer experience weight changes, muscle loss and fatigue at some point during their illness. In an effort to fight the cancer, the body produces substances called cytokines which can lead to weight loss, muscle loss and decrease in appetite. Chemotherapy and radiation, often causes reduced appetite this is due to the treatment side effects such as nausea, vomiting, leading to inability to feed well and further contributing to muscle loss and loss of weight. Patients experiencing cachexia often cannot manage treatments well and may experience more intense symptoms (Bethesda, 2011).

Throughout the cancer continuum, individuals should strive to maintain a healthy weight as defined by a body mass index. Weight loss can impair a patient’s quality of life, interfere with the completion of treatment, delay healing, and increase the risk of complications (Bethesda, 2011). Quality of life is a broad multidimensional concept that considers a person’s physical, emotional, social, and spiritual well-being (Ferrell & Dow, 1997). According to a survey in USA approximately one in four cancer survivors has a
diminished quality of life due to physical problems and one in ten due to emotional problems (Forsythe, 2012).

Physical well-being is the degree to which symptoms and side effects, such as pain, fatigue, and poor sleep quality, affect the ability to perform normal daily activities. Emotional, or psychological, well-being refers to the ability to maintain control over anxiety, depression, fear of cancer recurrence, and problems with memory and concentration. Social well-being primarily addresses relationships with family members and friends, including intimacy and sexuality. Other factors that affect social wellbeing include employment, insurance, and financial concerns. Finally, spiritual well-being draws its meaning from the cancer experience, either in the context of religion, keeping hope alive and resilience in the face of uncertainty about one’s future health (Toles & Demark-Wahnefried, 2008).

Korstjens (2006) conducted a longitudinal study (n = 658) to address problems in a 12-week rehabilitation group program for cancer patients in the Netherlands. The study combined physical exercise and psycho-education. At baseline, participants reported a low quality of life, measured by sleep disturbances and high experience of pain. At the end of the 12 week rehabilitation, participants reported significant improvements on both variables: in experience of pain and sleep patterns. The findings of this study clearly indicate that the recovery outcomes among cancer patients is multifaceted, a situation the proposed research intends to investigate bearing in mind the different population characteristics.

Pain in cancer can be caused by the disease itself or by the treatments and is common in patients with cancer. Approximately 30% to 50% of people with cancer experience pain while undergoing treatment, and 70% to 90% of people with advanced cancer experience pain. (Lesarge and Portenoy, 1999)
A study by Adriaan (2013) at the University of Stellenbosch, South Africa to compare the experience of pain on cancer survivors’ quality of life in a rehabilitation Programme employing behavioral, cognitive and self-management therapies, established that participants showed significant, clinically relevant reduction of pain. In physical functioning, he found vitality and health change. The researcher concluded that behavioral interventions did have beneficial effects on cancer survivors’ quality of life.

Hollingshaus and Rebecca (2015) observe that although diagnosis with a major chronic illness tends to weigh heavily on the patient’s well-being. Little attention is paid to gender variations in mental health following diagnosis. To test how diagnosis with cancer affected the AQ over time, a sample of 12,271 older adults was utilized in the European Union. The study explored AQ variation and whether sex differences were accounted for. Results showed that while male patients reported higher AQ scores than female patients. Females generally reported more depressive symptoms than males, but the increase following diagnosis was smaller for females.

Andrade, Muniz, Lange, Schwart, Echevarria and Guanilo (2010) conducted a descriptive cross-sectional study, with 264 Brazilian cancer survivors under medical assessment, data was collected through interviews. It was ascertained that the characterization of this population is relevant, because it will contribute to identifying factors which promote high resilience. The results indicated a higher level of resilience among the males (49.1%), while majority of women showed moderate resilience (45.9%). This finding with a study conducted in America in the Oncosinos/Hospital Regina in Novo Hamburgo-RS in 2007. In the study the researchers examined the degree of resilience of 418 oncology patients who were undertaking chemotherapy treatment. The study showed that female patients had lower resilience scores compared to their male counter parts.(De Silva, 2007).
Cohen et al (2014) conducted an exploratory cross sectional study of 92 individuals aged between 27-87 years, diagnosed with colorectal cancer stage ii-iii, 1-5 years prior to enrollment in the study. Results found that older age men had less cancer related problems and this was associated with higher resilience and lower emotional distress. Findings were that there is better adjustment of older patients with cancer and increased professional support should be provided for patients with low resilience.

Mulemi (2010) study on cancer ethnography in Kenya highlights inadequate attention to cancer in Kenya. Cancer is and has been relatively neglected, a consequence of the complexity of the health problems cancer causes. This is a policy concern for Kenya, as limited literature exists that can inform policy formulation process. Social scientists and medical practitioners need to be aware of the comprehensive issues that shape patients’ experiences of disease and treatment outcomes. Unfortunately, many of the problems that medical practitioners may perceive as non-technical attract the least attention. Comprehensive cancer management requires holistic assessment of sufferers’ needs inside and outside the hospital.

2.3.3 Relationship between Adversity Quotient and Recovery Outcomes
Following diagnosis of cancer, many people experience serious psychological distress, which can adversely affect their cancer care and recovery outcomes (Fox et al, 2013). Survival after cancer diagnosis involves an intricate web of psychological predispositions. Carver and Scheier (1985) state that adversity quotient is key in the recovery process, coping with challenges posed by the cancer experience, treatment-related side effects and obtaining support to manage cancer treatment and recovery (Merluzzi & Sanchez, 1997).

AQ has been shown to play an influential role in a number of behavioral and psychological outcomes that result when people are confronted with difficult situations, including cancer (Scheier & Carver, 1985). A study by Carver and Scheier (1985) on the relationship between
AQ on recovery for breast cancer patients after surgery in Mexico, collected data at 1 day and 10 days and then at 3, 6, and 12 months after surgery. The findings of the study established that AQ was positively related to recovery outcomes as measured by reduced pain, increased sleep and reduced stress at each time point during the study.

A similar study by Gotay, Isaacs and Pagano (2004) on cancer survivors found out that AQ was associated with better quality of life, lower levels of depression, increased sleep and reduced pain. Rosenberg (2012) argues that cancer patients who manage their stress and derive strength from their experience with cancer recorded better recovery and an overall quality of life. Strauss et al. (2007) study of cancer patients undergoing radiation therapy, found out that AQ was an important psychological predictor of lack of psychological distress or a positive outcome such as post-traumatic growth, or finding meaning from traumatic experiences.

Fox et al (2013) conducted a study to examine the association between AQ and recovery outcomes among cancer patients; using representative data from patient’s aged 18 years and above. A regression analysis of the data established that high AQ was associated with better recovery outcomes and quality of life among the cancer patients. The above studies show that AQ has been associated not just with a reduction in distress, but also an increase in well-being. The benefits of AQ may at least be partially attributed to the utilization of adaptive coping mechanisms including active rather than passive coping.

Research on cancer-related coping strategies, gender, age, personality traits, and environmental support; have indicated that recovery outcomes may be informed by psychosocial interventions (WHO, 2014). The literature further shows that the construct of AQ significantly influences recovery outcomes in persons with terminal illnesses. Consequently, it is important to study AQ because it is an important contributor to health outcomes in cancer.
patients in specific contextual setting because AQ is partly influenced by the personality and environmental conjugates of the cancer patients.

2.3.4 Strategies that can be used to Enhance AQ among Cancer Patients

There are several interventions that can be used to enhance AQ among cancer survivors. The benefits of group psychotherapy interventions with cancer survivors cannot be gainsaid (Lepore & Coyne, 2006). The majority of these interventions fall into four distinct categories: education, coping, emotional support, and psychotherapy (Fawzy, 1999). There are many studies on each of these types of psychotherapeutic group intervention encompassing various populations, settings, treatments, and modalities.

(a) Psycho education intervention - Ferlic, Goldman, and Kennedy (1979) proposed that going beyond the traditional support group was necessary to examine the patient’s adjustment to illness, communication, cancer-related knowledge, psychological adjustment to illness, and self-concept (Ferlic, Goldman, & Kennedy, 1979).

(b) Coping skills intervention - Psychotherapy groups with a focus on coping skills and strategies are another avenue for enhancing AQ to cancer survivors. Researchers have stated that about one-third to one-half of cancer survivors will experience clinically significant levels of distress during the course of their illness, and coping skills groups are an effective means of treatment (Blake-Mortimer, et al, 2010). A particularly stressful component of cancer care is chemotherapy treatment and coping skills such as relaxation and stress management training have proven useful in managing anticipatory nausea (Faul, Jim, Williams, Loftus, & Jacobsen, 2010). Researchers hypothesized that pre-treatment coping skill level would reduce distress and increase AQ (Faul, Jim, Williams, Loftus, & Jacobsen, 2010).

(c) Emotional Support intervention - It has been studied is the use of emotional support groups for cancer survivors and co-survivors (Goodwin, Leszcz, Ennis, & Koopmans, 2001). These groups can be professionally administered or led by a peer survivor;
they can be closed and structured or open and unstructured; they can also be focused on informational support as opposed to emotional support. This can be done in a comprehensive review of discussion, education, and combining group interventions.

(d) Psychotherapy intervention-Multiple reviews have shown that group psychotherapy, including cognitive-behavioral, informational, non-behavioral, social support, and using unusual treatments such as music and art therapy which are useful and beneficial in supporting cancer survivors throughout the trajectory of the illness (Uitterhoeve, et al., 2004).

Wide arrays of strategies to enhance AQ may not be taken into consideration at the Nairobi Hospice, Nyeri Hospice and Nyeri County Referral Hospital. The interventions that are commonly used during the therapy session in most public health facilities and hospices include psychotherapy and psycho education. It would be of immense benefit if other intervention measures could be included in order to enhance AQ of cancer patients and promote higher recovery outcomes.

2.5 Summary of Literature

Results from several studies show that cases of cancer patients with similar diseases and treatment status yield significantly different recovery outcomes. Adversity quotient has been touted as the main reason why patients with similar conditions have different recovery processes. AQ can be viewed as a defense mechanism that makes it possible for an individual to triumph in the midst of pain. Personality differences in AQ cause patients to have different recovery outcomes; therefore, it may be essential to introduce the concept of AQ into studies of the recovery of patients diagnosed with cancer. It is worth noting that most of the studies reviewed have concentrated on one dimension of AQ namely Control whereas the other dimensions of AQ have not been factored in. It is also noted that there are very few studies that have been done in the medical and psychology fields on AQ thus the researcher found it essential to research on AQ in relation to cancer recovery outcomes.
Another gap established was that there was a dearth of information on AQ and cancer recovery outcomes in Africa and even less in Kenya. This has necessitated the researcher to focus the study in Nairobi and Nyeri Counties, Kenya in order to add to the body of literature. Therefore, improving AQ may be a crucial dimension for treatment and recovery. There were no recorded cases of cancer patients AQ in palliative care units in both Nairobi and Nyeri Counties this prompted the need for the study. In the study on pain, the researcher concluded that behavioral interventions did have positive effects on quality of life of cancer survivors’. This observation is relevant to this study but the researcher concentrated on behavioral interventions at the expense of other interventions such as cognitive therapies.

Recovery among cancer patients must encompass relieve of distressing experiences, it includes clinical reduction of pain, appropriate physical functioning, vitality and health change. Cancer survivors can sometimes have long-term effects on the body that range from constant pain, interrupted sleep patterns, weight loss and diminished quality of life. The combined effects of these situations can dramatically affect the quality of life. Due to high cancer incidences and an increase in survival rates of persons diagnosed with cancer, there is need for provision of more information to deal with their cancer as a chronic disease.

The relationship between adversity quotient may be crucial in the cancer recovery outcomes, coping with challenges posed by the cancer experience, treatment-related side effects and gathering support to handle cancer treatment and recovery. It may relate to recovery outcomes. The literature further shows that AQ may significantly influence recovery outcomes in persons with terminal illnesses. Consequently, it was important to study AQ because it is an important contributor to health outcomes among cancer patients in specific contextual setting. AQ may be partly influenced by the personality and environmental conjugates of the cancer patients. There are several interventions that can be used to enhance
AQ among cancer survivors, these include; education, coping, emotional support and psychotherapy.
2.6 Conceptual Framework on relationship between AQ and RO
Given the theoretical framework and objective of the study levels of Adversity Quotient, nature of recovery outcomes, the relationship between Adversity Quotient and recovery outcomes among cancer patients attending palliative care, challenges faced by cancer patients that may influence recovery outcomes in palliative care and strategies that can be used to enhance Adversity Quotient to improve recovery outcomes among cancer patients attending palliative care as the independent variables while the recovery outcome as the dependent variable and age, gender and Years after diagnosis as intervening variable as shown in figure 2.1 below.

Figure 2.1 Conceptual framework

![Conceptual framework diagram]

Source, (Wang’ombe, 2016)
Figure 2.1 shows the relationship between the study variables and how they interact with each other. The independent variable (Adversity Quotient) is indicated by; control, ownership, reach and endurance. The study assumed that appropriate AQ, has direct relationship with the recovery outcomes (dependent variable) which was indicated by quality of sleep, experience of pain, weight change and quality of life. However, age of the patient and years after diagnoses, can also influence recovery outcomes and are classified as intervening variables.

The independent variables constitute the scope of Adversity quotients namely control, ownership, reach and endurance. The higher the score of these four dimension the higher the Adversity quotient of an individual. However, each dimension matters in one’s ability to deal with challenges. Recovery outcomes constitutes of four measurements (sleep, pain, quality of life and weight) which are used as recovery indicators. This indicators can be influenced by the individuals AQ and there is a possibility of a relationship as indicated in the conceptual framework. A high level of AQ affects the recovery process indicators either in a negative or positive way.

The researcher also included a subjective indicator to the study which was directly affected by the level of AQ. This was the quality of life. Therefore, the study sought to evaluate each dimension vis-à-vis the recovery outcomes which was the dependent variable.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This chapter discusses the research methodology for the study on the relationship between adversity quotient and recovery outcome among cancer patients attending Nairobi and Nyeri County Palliative care units. The chapter was organized into the following sub-sections: research design, location of the study, population of the study, sampling procedure and sample size, instrumentation and data analysis and ethical considerations.

3.2 Research Design
This study adopted a correlational research design to examine the relationship between Adversity Quotient and recovery outcomes among cancer patients. Cohen, Manion and Morrison (2000) holds that correlational research designs are generally intended to find out three aspects in relation to the two variables under study; first, examines the extent to which two or more variables (or sets of data) relate to one another and secondly if a relationship exists, then, what is the direction and magnitude of the relationship. Correlational design was appropriate for this study because the researcher sought to establish if there was a relationship between two variables namely adversity quotient and recovery outcomes, as well as nature of the relationship in terms of direction and magnitude.

3.3 Study Variables
The study variables were Adversity Quotient (AQ), recovery outcomes and the intervening variables. Adversity Quotient which was the independent variables comprised of four dimensions; control, endurance, reach and the ownership while the dependent variable was the recovery outcomes which comprised of quality of sleep, experience of pain, weight changes and quality of life after the cancer diagnosis. Positive recovery outcomes included increased sleep, decreased pain, increasing weight and high quality of life, while negative recovery outcomes included decreased sleep, increased pain, decreasing weight, and low
quality of life. The intervening variables of the study were age, gender and years after diagnosis.

3.4 Site of the Study
The research was carried out at the three palliative care units in Nyeri and Nairobi Counties which are: Nyeri County Referral Hospital (CRH), Nairobi Hospice and Nyeri Hospice. The areas were chosen as a research site because the government of Kenya plans to decentralize essential cancer management activities from Kenyatta National Hospital in Nairobi to Nyeri, Mombasa and Kisumu County referral hospitals so as to ease the cost of the disease for low income families. These regions were been identified by the Ministry of Health as the regions with the highest prevalence of cancer (Mulemi, 2010).

Records at the cancer registry (2014) indicate that Nairobi hospice handles patients referred from Kenyatta National Hospital and other health care facilities within and outside Nairobi. In 2006, among data on more than 3000 cases of cancer in Kenya, 60% were from Nairobi. Additionally, statistics at Nyeri CRH showed that in 2013 out of the 2,800 persons that were screened for cancer, 250 tested positive to having different types of cancer (Githinji, 2013). Additionally, records at Nyeri Hospice (2011-2012) on clinical characteristics of cancer cases indicated that of the 598 cancer patients that sort treatment in the facility, only 100 patients, a paltry 21% were alive by December 2012 (Muriu, 2013). Therefore due to high cancer incidences and apparent low recovery outcome there was a need to investigate the role that AQ might play in cancer recovery outcome among patients in the counties.

3.5 Target Population
The target population consisted of cancer patients, attending cancer palliative care treatment at Nyeri County Referral Hospital, Nairobi Hospice and Nyeri Hospice who would be able to answer the questionnaire and consent to be study participants. The total target population for one month as per the data below was an estimated 637 patient’s. According to the information
available from the records department at the centres, Nyeri palliative care unit and Nyeri hospice handled between 27-33 cancer related cases daily in the year 2014 (Nyeri County Referral Hospital, 2015). Nyeri Hospice handled a total of 452 patients in the year 2014 (Nyeri Hospice, 2015). According to the Nairobi cancer registry, in 2006 Nairobi palliative care centres handled a total of 2000 cases (both old and new cases) in a period of 10 years.

3.6 Sampling Techniques and Sample size
In order to determine the number of participants to be included in the study the health surveys sampling formula by Aday and Cornelius (2006) was used. This sampling formula was found to be best suited for sample size determination because the target population was an estimate and the population under study had a cancer diagnosis.

\[ N = \frac{Z^2 \alpha}{2} \frac{P(1-P)}{e^2} \]

Where:
\( n \) = sample size,
\( \alpha = 0.05 \)
\( Z \) = Z statistic for a level of confidence (95% level of confidence used, therefore \( Z \) value is 1.96).
\( P \) = expected prevalence of proportion
\( e \) = precision (in this case, \( e = .05 \)).

Use of .50 as the estimate is because a .50/.50 split in the proportion that did/did not attend the cancer unit tends to yield the largest sample size requirements. Table 3.1 presents confidence interval and standard errors (Z)

<table>
<thead>
<tr>
<th>Confidence Interval</th>
<th>Standard Errors (Z)</th>
</tr>
</thead>
<tbody>
<tr>
<td>68 %</td>
<td>1.00</td>
</tr>
<tr>
<td>90 %</td>
<td>1.645</td>
</tr>
<tr>
<td>95 %</td>
<td>1.96</td>
</tr>
<tr>
<td>99 %</td>
<td>2.58</td>
</tr>
</tbody>
</table>

\[ N = 1.96^2 \times 0.05(1-P)/e^2 \]
n = \frac{Z^2 \cdot P(1-P) \cdot e^2}{(1.96)^2 \cdot (0.05 \times 0.5)^2} = 96

Therefore the study drew a sample total of 96 participants.

The study adopted a systematic random sampling technique. Systematic random sampling is a method that involves selecting subjects from a sampling frame in a systematic way rather than a random manner. Based on this every third person was selected from a list until the required number is attained. The initial point for the selection is chosen at random (Kothari, 2004). From each palliative care unit in the county every third patient was selected and included in the study. This was likely to enhance accuracy of the findings as it has captured population characteristics in the three palliative care units.

<table>
<thead>
<tr>
<th>Palliative Care Centre</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi Hospice</td>
<td>32</td>
</tr>
<tr>
<td>Nyeri County Referral Hospital</td>
<td>32</td>
</tr>
<tr>
<td>Nyeri Hospice</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96</strong></td>
</tr>
</tbody>
</table>

(Source Wang’ombe, 2016)

3.7 **Research Instruments**

The study utilized a self-scoring questionnaire administered to the participants to collect data on AQ, recovery outcomes and strategies that can be used to enhance Adversity Quotient among the participants. The first section collected data on the participants AQ and it was modified to adapt to the local setting from the Adversity Response Profile (ARP) questionnaire. This was adapted from Stoltz (2000) Adversity Response Profile (ARP) the tool consisted of 20 structured items in a five-point Likert scale. The second section contained structured items on patient’s recovery outcomes. The third section consisted of open ended items that were used to collect data on strategies that could be used to measure enhanced Adversity Quotient among the participants. There was also a social demographic section at the beginning to gather background data on the respondents. The choice of the questionnaire
was made considering the variables under investigation, that is, adversity quotient and recovery outcomes. The questionnaire was an appropriate tool for data collection because it allowed the participants to respond individually or with assistance.

3.8 Validity and Reliability

3.8.1 Validity

The validity of a research instrument is its ability to measure what it is supposed to measure (Mugenda&Mugenda, 2003). It addresses the concern of whether one is measuring suitable indicators of the concept, accuracy of the results to the extent of what is supposed to be measured. To enhance construct validity the researcher ensured that the constructs under study, namely adversity quotient and the recovery outcomes were operationalized in line with the definitions in existing theory and literature. Additionally, the researcher ensured that the items in the questionnaires were relevant to the construct as defined in the study.

Content validity was enhanced by ensuring that the items in the instrument comprehensively covered the dimensions of the constructs in the study. Lastly, face validity of the instrument was ascertained by presenting the instrument to the supervisor for expert opinion as supported by Fraenkel and Warren (2000), to judge appropriateness of the content of the instrument in line with the study objectives.

3.8.2 Reliability

Test-retest technique was used to check the reliability of the instrument. The instrument was administered to 10 cancer patients who were not included in the final study. The subjects were obtained by getting 10% of the sample (96 participants) as a representative population of the study (Mugenda&Mugenda, 2003). The tool was administered to the same group after two weeks so as to reduce recall effects and chances of behavior change in the patients. Pearson product moment correlation was computed for the two sets of scores. And an index
of 0.93 was obtained which was above 0.7 and was considered appropriate for the study as suggested by Rosner (1995).

3.9 Pilot Study
A pilot study was conducted to establish whether the questionnaires measure what they were intended to measure. A pilot study was important since it provided the researcher with approaches that were unforeseen before conducting the pilot study. It also reduced the number of unforeseen problems since the researcher had an opportunity to review some sections of the questionnaire and include new areas. According to Mugenda and Mugenda (2003) the number of participants to be included in the pilot study should be 1 to 10% of the study sample. Accordingly, 10 participants were obtained from a location that had similar characteristics to the main study sample, namely Nanyuki palliative care unit. Information obtained during the pilot study was used to revise the questionnaire and eliminated vague questions. The pilot study was conducted in Nanyuki palliative care unit since it had similar characteristics with the main study sample. The pilot sample obtained was not included in the final sample to avoid results contamination.

3.10 Data Collection Procedures
The researcher obtained a letter of approval from the graduate school and Ethics Review Committee of Kenyatta University and then proceeded to the National Council for Science Technology and Innovation (NACOSTI) and obtained a research permit. Further permission was sought from the individual managements of palliative care units in Nyeri and Nairobi Counties, after which she proceeded to the field to collect data. In addition, the rationale for the study was explained as the instrument was administered. The questionnaires were presented to individuals and collected on the same day. The questionnaires were researcher–assisted for most of the respondents. The researcher used research assistants to assist the participants who were illiterate or who may have wanted further explanation in order to
answer the questions. The researcher needed these research assistants since some of the data was being collected in areas that the researcher was not familiar with.

3.11 Data Analysis and Presentation
The completed questionnaires were coded and the participants’ responses scored and keyed into a computer data file. Descriptive statistics, namely; means, percentages and frequencies were used in the analysis. In addition inferential statistics, namely Pearson Moment Correlation Coefficient was applied to calculate the nature, power, and direction of the association between two continuous variables, namely the recovery outcomes and AQ. This is owing to the fact that the data collected was on interval scale. Linear regression was then used to examine how each of the dimensions of the independent variables in the study impact on the dependent variable. The extraneous variables such as age, gender, years after diagnoses and availability of support system were controlled using Partial correlation.

3.12 Data Management and Ethical Considerations
Permission was sought from the Kenyatta University Ethical Review Committee and Ethical approval was granted. A research permit was sought for and granted by NACOSTI prior to conducting the study. Consent was also obtained from The County Directors of Health Services Nairobi and Nyeri, the Directors of Nairobi Hospice and Nyeri Hospice; consent from participating respondents was also sought. Informed consent presupposes that the participant is fully informed about participation rights and use of data collected during the study (Saunders et al 2007). Participants were assured of confidentiality. They were also informed that data collected would be used for academic purposes only. Privacy and confidentiality was maintained while handling the data throughout the study process. Thus, names of the participants were not revealed in the instruments. The findings of the study will not be used for any other purposes other than that which pertains to this research and all questionnaires are to be destroyed upon presentation and defence of the study findings.
CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.1 Introduction
This chapter presents findings of the study on the relationship between Adversity Quotient and recovery outcomes among cancer patients attending palliative care units in Nairobi and Nyeri Counties, Kenya. Demographic characteristics are presented first followed by the findings of the study guided by the specific study objectives.

4.2 Demographic Characteristics of Respondents
The sample size was composed of 96 participants; however, the response rate was 88% which consisted of 84 respondents. Data was collected on the following sociodemographic characteristics: gender, age, period of treatment and period since diagnosis. The results are presented in the subsections that follow.

4.2.1 Gender of the Respondents
Data was collected on the gender of the respondents. The findings are as summarized in Figure 4.1:

The gender of the respondents are summarized in figure 4.1

![Gender Pie Chart]

- 55% Male
- 41% Female
- 4% No response
Figure 4.1: Distribution of Respondents by Gender

As indicated in figure 4.1, 55% of the respondents were females while 41% were males. 4% of the respondents did not respond to the query on their gender.

4.2.2 Respondents Age

The respondents were drawn from different age groups. The findings are presented in the table 4.1.

Table 4.1 Distribution of Respondents by Age Category

<table>
<thead>
<tr>
<th>Age category</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>Below 25 years</td>
<td>7</td>
<td>8.3</td>
</tr>
<tr>
<td>25-35 years</td>
<td>21</td>
<td>25.0</td>
</tr>
<tr>
<td>36-45 years</td>
<td>12</td>
<td>14.3</td>
</tr>
<tr>
<td>46-55 years</td>
<td>22</td>
<td>26.2</td>
</tr>
<tr>
<td>56-65 years</td>
<td>8</td>
<td>9.5</td>
</tr>
<tr>
<td>Above 65 years</td>
<td>11</td>
<td>13.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

From the findings in table 4.1, majority of the respondents (26.2%) were aged between 46 to 55 years old, followed closely at 25% by those of ages 25-35 years old. 8.3% of the respondents indicated being younger than 25 years old.

4.2.3 Respondents Period of Treatment

The researcher sought to establish how long the respondents had been receiving palliative care. The findings are shown in the table 4.2.

Table 4.2 Respondents Treatment Period

<table>
<thead>
<tr>
<th>Period of Treatment</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>0-6 months</td>
<td>32</td>
<td>38.0</td>
</tr>
<tr>
<td>7-11 months</td>
<td>4</td>
<td>4.8</td>
</tr>
<tr>
<td>1-5 years</td>
<td>42</td>
<td>50.0</td>
</tr>
<tr>
<td>6-10 years</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
As shown in table 4.2, majority of the respondents (50%) had been receiving treatment for between 1 to 5 years, whereas 38 % had been receiving treatment for about 0 to 6 months.

4.2.4 Respondents Period since Diagnosis
The researcher also sought to establish the duration that had passed since the respondents had been diagnosed with cancer. The findings are as shown in table 4.3.

Table 4.3 Respondents Duration since Diagnosis

<table>
<thead>
<tr>
<th>Duration since Diagnosis</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>4</td>
<td>4.7</td>
</tr>
<tr>
<td>17 years and above</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>14-16 years</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>11-13 years</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>7-10 years</td>
<td>7</td>
<td>8.3</td>
</tr>
<tr>
<td>3-6 years</td>
<td>23</td>
<td>27.4</td>
</tr>
<tr>
<td>1-2 years</td>
<td>41</td>
<td>48.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

From table 4.3, majority of the respondents (48.8%) receiving palliative care had been diagnosed between 1-2 years earlier, while 27.4% had been diagnosed between 3 - 6 years earlier.

4.3 Levels of Adversity Quotient among Cancer Patients
This section provides the findings on objective one which sought to establish the levels of adversity quotient (AQ) among cancer patients receiving palliative care. To measure the AQ, respondents were presented with 20 items that assessed how different situations in their life affected them, on a five point like scale. Since there were 20 items, the highest possible score was 100 (20x5) and the lowest possible score was 20 (20x1). An individual’s total score was derived from the addition of the total 20 items. The scores were then categorized into 3 levels, where scores of between 20-50 represented low adversity quotient level, scores between 51-
69 represented moderate adversity quotient and scores between 70-100 represented high adversity quotient. The findings are presented in the subsections that follow beginning with the general findings for the AQ, followed by the findings on each of the four dimensions of AQ namely: control, ownership reach, and endurance.

4.3.1 Levels of Adversity Quotient among cancer patients

In this subsection data is presented on the levels of adversity quotient in general, beginning with frequencies followed by descriptive statistics.

Table 4.4 Levels of Adversity Quotient among cancer patients

<table>
<thead>
<tr>
<th>Level of AQ</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low adversity quotient level</td>
<td>10</td>
<td>11.9</td>
</tr>
<tr>
<td>Moderate adversity quotient level</td>
<td>26</td>
<td>31.0</td>
</tr>
<tr>
<td>High adversity quotient level</td>
<td>48</td>
<td>57.1</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Findings from table 4.4 indicate that majority of the respondents (57.1%) had a high adversity quotient level, while 11.9% of the respondents had a low adversity quotient level.

Data on adversity quotient level was further analyzed descriptively in terms of means and standard deviation. The findings are presented on table 4.5

Table 4.5 Descriptive Statistics for Levels of Adversity Quotient

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum AQ</td>
<td>84</td>
<td>32</td>
<td>93</td>
<td>68.98</td>
<td>13.540</td>
</tr>
<tr>
<td>Valid N</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in table 4.5, the lowest adversity quotient level score attained by the respondents was 32, while the highest score was 93. The adversity quotient mean score was 68.98±13.54, signifying that the adversity quotient for the respondents was in the moderate level.
Data was then further analyzed separately for the two counties. The findings are as shown in table 4.6 and 4.7.

Table 4.6 Frequencies for Levels of Adversity Quotient by County

<table>
<thead>
<tr>
<th>Levels of Adversity quotient</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low adversity quotient level</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td>Moderate adversity quotient level</td>
<td>11</td>
<td>55.0</td>
</tr>
<tr>
<td>High adversity quotient level</td>
<td>6</td>
<td>30.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td>Nyeri</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low adversity quotient level</td>
<td>7</td>
<td>10.9</td>
</tr>
<tr>
<td>Moderate adversity quotient level</td>
<td>15</td>
<td>23.4</td>
</tr>
<tr>
<td>High adversity quotient level</td>
<td>42</td>
<td>65.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

As shown in table 4.6, majority of the respondents from Nairobi (55%) had a moderate adversity quotient level, while majority of the respondents from Nyeri (65.6%) had a high adversity quotient level.

Table 4.7 Descriptive Statistics for Adversity Quotient by County

<table>
<thead>
<tr>
<th>County</th>
<th>Sum adversity</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi</td>
<td></td>
<td>20</td>
<td>37</td>
<td>93</td>
<td>63.55</td>
<td>12.972</td>
</tr>
<tr>
<td></td>
<td>Valid N</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nyeri</td>
<td></td>
<td>64</td>
<td>32</td>
<td>92</td>
<td>70.67</td>
<td>13.361</td>
</tr>
<tr>
<td></td>
<td>Valid N</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From table 4.7, the lowest adversity quotient score attained by the respondents in Nairobi was 37 while that attained by respondents in Nyeri was 32. The highest score attained was 93 and 92 for Nairobi and Nyeri respectively. The adversity quotient mean score for respondents in Nairobi was 63.55±12.97, indicating a moderate level
of adversity quotient, whereas the adversity quotient means score for the respondents in Nyeri was 70.67±13.36, indicating a high level of adversity quotient.

4.3.2 Levels of Adversity Quotient by Dimensions
Data on Adversity quotient (AQ) was further analyzed for each of the four dimensions of AQ namely; control, ownership, reach and endurance. The results are presented in table 4.8 and 4.9.

Table 4.8 Levels of Adversity Quotient among cancer patients

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Levels of Adversity quotient</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>means</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>Low adversity quotient level</td>
<td>9</td>
<td>10.7</td>
</tr>
<tr>
<td></td>
<td>Moderate adversity quotient level</td>
<td>29</td>
<td>34.5</td>
</tr>
<tr>
<td></td>
<td>High adversity quotient level</td>
<td>46</td>
<td>54.8</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td>Ownership</td>
<td>Low adversity quotient level</td>
<td>11</td>
<td>13.1</td>
</tr>
<tr>
<td></td>
<td>Moderate adversity quotient level</td>
<td>30</td>
<td>35.7</td>
</tr>
<tr>
<td></td>
<td>High adversity quotient level</td>
<td>43</td>
<td>51.2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td>Reach</td>
<td>Low adversity quotient level</td>
<td>12</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>Moderate adversity quotient level</td>
<td>23</td>
<td>27.4</td>
</tr>
<tr>
<td></td>
<td>High adversity quotient level</td>
<td>49</td>
<td>58.3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td>Endurance</td>
<td>Low adversity quotient level</td>
<td>11</td>
<td>13.1</td>
</tr>
<tr>
<td></td>
<td>Moderate adversity quotient level</td>
<td>28</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>High adversity quotient level</td>
<td>45</td>
<td>53.6</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

As shown in table 4.8, majority of the respondents had a high adversity quotient level in all the 4 dimensions of AQ. The findings are as follows:- control (54.8%), ownership (51.2%), reach (58.3%) and endurance (53.6%) respectively.

Data was further analyzed descriptively for the four dimensions. The findings are summarized in table 4.9.
Table 4.9 Descriptive statistics for Levels of Adversity Quotient by Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>84</td>
<td>9</td>
<td>23</td>
<td>17.50</td>
<td>3.217</td>
</tr>
<tr>
<td>Ownership</td>
<td>84</td>
<td>8</td>
<td>23</td>
<td>17.01</td>
<td>3.558</td>
</tr>
<tr>
<td>Reach</td>
<td>84</td>
<td>6</td>
<td>24</td>
<td>17.19</td>
<td>3.835</td>
</tr>
<tr>
<td>Endurance</td>
<td>84</td>
<td>6</td>
<td>25</td>
<td>17.27</td>
<td>4.022</td>
</tr>
<tr>
<td>Valid N</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in table 4.9, for the control dimension, the minimum score was 9, while the maximum score was 23, and the mean score was 17.50±3.217, indicating a moderate level of adversity quotient. For the endurance dimension, the minimum score was 6, while the maximum score was 25, and the mean score for endurance was 17.27±4.022, which also indicates that it was in the moderate level. For ownership dimension, the minimum score was 8, while the maximum score was 23, and the mean score was 17.01±3.558, indicating a moderate level as well. For the reach dimension the minimum score was 6, while the maximum score was 24, the mean score was 17.19±3.835, again indicating a moderate level.

Data was then further analyzed separately for the two counties. The findings are as shown in table 4.10.

Table 4.10 Descriptive Statistics for Dimensions of Adversity Quotient by County

<table>
<thead>
<tr>
<th>County</th>
<th>Dimension</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi</td>
<td>Control</td>
<td>20</td>
<td>9</td>
<td>23</td>
<td>16.25</td>
<td>3.552</td>
</tr>
<tr>
<td></td>
<td>Ownership</td>
<td>20</td>
<td>9</td>
<td>23</td>
<td>15.65</td>
<td>3.345</td>
</tr>
<tr>
<td></td>
<td>Reach</td>
<td>20</td>
<td>9</td>
<td>22</td>
<td>15.95</td>
<td>3.734</td>
</tr>
<tr>
<td></td>
<td>Endurance</td>
<td>20</td>
<td>10</td>
<td>25</td>
<td>15.70</td>
<td>3.541</td>
</tr>
<tr>
<td></td>
<td>Valid N</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nyeri</td>
<td>Control</td>
<td>64</td>
<td>11.0</td>
<td>23</td>
<td>17.89</td>
<td>3.030</td>
</tr>
<tr>
<td></td>
<td>Ownership</td>
<td>64</td>
<td>8</td>
<td>23</td>
<td>17.44</td>
<td>3.541</td>
</tr>
<tr>
<td></td>
<td>Reach</td>
<td>64</td>
<td>6</td>
<td>24</td>
<td>17.58</td>
<td>3.812</td>
</tr>
<tr>
<td></td>
<td>Endurance</td>
<td>64</td>
<td>6</td>
<td>24</td>
<td>17.77</td>
<td>4.062</td>
</tr>
<tr>
<td></td>
<td>Valid N</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As shown in table 4.10, for Nairobi the minimum scores were 9, 9, 9 and 10 for control, ownership, reach and endurance dimensions respectively, while the maximum scores were 23, 23, 22 and 25 respectively. For Nyeri, the minimum scores were 11, 8, 6 and 6 for control, ownership, reach and endurance dimensions respectively, while the maximum scores were 23, 23, 24 and 24 respectively. In terms of the mean score for the different dimensions, for Nairobi, were 16.25±3.552, 15.65±3.345, 15.95±3.734 and 15.70±3.541 for control, ownership, reach and endurance respectively. These scores for each of the dimensions fall within the moderate level. For Nyeri, mean scores were 17.89±3.03, 17.44±3.3541, 17.58±3.812 and 17.77±4.062 for control, ownership, reach and endurance respectively. These scores for each of the dimensions fall within the moderate level but are slightly higher than for the respondents in Nairobi.

4.4 Nature of Recovery Outcomes among Patients in Palliative Care

This section presents the findings on objective two which sought to establish the nature of recovery outcomes among patients in palliative care. Recovery outcomes were assessed using a scale with four dimensions namely level of pain experienced, weight change, quality of sleep and quality of life. Each of these dimensions was tested using items that assessed changes in the sub variables. The respondents rated their changes on a four point likert items (1-not at all, 2-to a lesser extent, 3- to a moderate extent, and 4- to a great extent). Since the total number of items on the entire scale was 20, the minimum possible score for an individual in the scale was 20 (1x20) and the maximum possible score was 80 (4x20). The scores were then categorized into two levels where scores ranging from 20 to 50 (level 1 and 2 of the likert scale) represented low recovery outcomes and scores ranging from 51 to 80 (level 3 and 4 of the likert scale) represented high recovery outcomes. The findings
are presented in the subsections that follow beginning with the nature of recovery outcome in general followed by the various dimensions of recovery outcomes.

4.4.1 Recovery Outcomes in general
In this section data is presented on recovery outcomes in general using frequencies and percentages as well as means or descriptive statistics.

Table 4.4.2 Nature of Recovery Outcomes

<table>
<thead>
<tr>
<th>Levels of Recovery Outcomes</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low recovery outcomes</td>
<td>55</td>
<td>65.5</td>
</tr>
<tr>
<td>High recovery outcomes</td>
<td>27</td>
<td>32.1</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the results in table 4.11, majority of the respondents (65.5%) had a low level of recovery outcomes, while 32.1% had a high level of recovery outcomes.

Data on recovery outcomes was further analyzed descriptively in terms of means and standard deviation. The findings are presented in table 4.12.

Table 4.12 Descriptive Statistics for Levels of Recovery Outcomes

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery outcomes</td>
<td>82</td>
<td>31</td>
<td>74</td>
<td>47.00</td>
<td>9.465</td>
</tr>
<tr>
<td>Valid N</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in table 4.12, results indicate that the lowest score on recovery outcomes was 31, while the highest score was 74. The mean score was 47.0±9.465, which indicates that the recovery outcomes fell in the low range.

Data was further analyzed to compare recovery outcomes by county. The findings are in table 4.13.
Table 4.13 Comparison between Levels of Recovery Outcomes by County

<table>
<thead>
<tr>
<th>County</th>
<th>Recovery outcomes</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nairobi</td>
<td></td>
<td>20</td>
<td>31</td>
<td>70</td>
<td>46.80</td>
<td>10.165</td>
</tr>
<tr>
<td></td>
<td>Valid N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nyeri</td>
<td>Recovery outcomes</td>
<td>62</td>
<td>31</td>
<td>74</td>
<td>47.06</td>
<td>9.314</td>
</tr>
<tr>
<td></td>
<td>Valid N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results in table 4.13, the lowest recovery outcomes score in Nairobi was 31 while that for Nyeri was also 31. The highest score was 70 for Nairobi and 74 for Nyeri. The recovery outcomes mean score for Nairobi was 46.80\(\pm\)10.165, whereas for Nyeri was 47.06\(\pm\)9.314. Both means fell within the low level range of recovery outcomes.

4.4.2 Levels of Recovery Outcomes by Dimensions

The researcher further sought to find out the nature of the recovery outcome as per the four dimensions or indicators of recovery outcome, namely level of pain experienced, weight change, quality of sleep and quality of life.

4.4.2.1 Dimension of Pain as an Indicator of Recovery outcome

The dimension of level of pain experienced had four items and hence the lowest possible score was 4 (4x1) and the highest possible score 16 (4x4). Scores ranging from 4 to 11 represented high levels of pain and hence low recovery outcome and 12 to 16 represented low levels of pain and hence high recovery outcome. The frequencies for levels of recovery outcomes for dimension of pain are shown in table 4.14.

Table 4.14 Frequency level for Pain as an Indicator of Recovery Outcomes

<table>
<thead>
<tr>
<th>Level of recovery outcomes</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low recovery outcomes (High pain)</td>
<td>27</td>
<td>32.9</td>
</tr>
<tr>
<td>High recovery outcomes (Low pain)</td>
<td>55</td>
<td>67.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>82</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
As shown in table 4.14, 67.1% of the respondents had high recovery outcomes, while 32.9% had low recovery outcomes for dimension of pain.

Table 4.15 presents the descriptive statistics for the dimension of pain.

**Table 4.15 Descriptive Statistics for Pain levels as an Indicator of Recovery Outcome**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>82</td>
<td>5</td>
<td>16</td>
<td>10.90</td>
<td>2.909</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results in table 4.14, the minimum recovery outcomes score was 5, while the maximum score was 16. The mean score was 10.90 (SD=2.909) indicating that on average there was high level of pain and hence low recovery outcomes.

**4.4.2.2 Weight as an Indicator of Recovery Outcomes**

The dimension of weight change had three items and thus the lowest possible score was 3 (3x1) and the highest possible score 12 (3x4). Higher scores indicated weight gain thus high recovery outcomes, while lower scores indicated decreased weight thus low recovery outcomes.

Scores ranging from 3 to 7 represented weight loss and hence low recovery outcomes and 8 to 12 represented weight gain and hence high recovery outcomes in terms of weight. The frequency level for weight as an indicator of recovery outcomes are shown in table 4.16.

**Table 4.16 Frequency for Weight as an Indicator of Recovery Outcomes**

<table>
<thead>
<tr>
<th>Level of Recovery Outcomes</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low recovery outcomes (Weight loss)</td>
<td>66</td>
<td>80.5</td>
</tr>
<tr>
<td>High recovery outcomes (weight gain)</td>
<td>16</td>
<td>19.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>82</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
As shown in table 4.16, 80.5% of the respondents had low recovery outcomes, while 19.5% had high recovery outcomes for dimension of weight change.

Table 4.17 presents the descriptive statistics for dimension of weight.

**Table 4.17 Descriptive Statistics for Weight as an Indicator of Recovery Outcomes**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>82</td>
<td>3</td>
<td>12</td>
<td>4.80</td>
<td>2.848</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results in table 4.17, the minimum recovery outcomes score was 3, while the maximum score was 12. The mean score was 4.8 (SD=2.848) indicating that on average recovering patients experienced loss in weight and therefore had low recovery outcomes.

### 4.4.2.3 Sleep as an Indicator of Recovery Outcomes

The dimension of quality of sleep had three items and thus the lowest possible score was 3 (3x1) and the highest possible score 12 (3x4). Higher scores represented good sleep thus a high recovery outcome, and lower scores represented poor sleep thus low recovery outcome. Scores ranging from 3 to 7 represented poor sleep and hence indicated low recovery outcomes and 8 to 12 represented good sleep and hence indicated high recovery outcomes. The frequencies for dimension of sleep as an indicator of recovery outcomes are shown in table 4.18.

**Table 4.18 Frequency for Sleep as an Indicator of Recovery Outcomes**

<table>
<thead>
<tr>
<th>Level of Recovery Outcomes</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low recovery outcomes (Poor sleep)</td>
<td>47</td>
<td>57.3</td>
</tr>
<tr>
<td>High recovery outcomes (Good sleep)</td>
<td>35</td>
<td>42.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>82</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
From table 4.18, 57.3% of the respondents had low recovery outcomes, while 42.7% had high recovery outcomes for dimension of sleep change.

Table 4.19 presents the descriptive statistics for dimension of sleep as an indicator of recovery outcomes.

Table 4.19 Descriptive Statistics for Sleep as an Indicator of Recovery Outcomes

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep</td>
<td>82</td>
<td>3</td>
<td>11</td>
<td>6.90</td>
<td>1.584</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results in table 4.19, the minimum recovery outcomes score was 3, while the maximum score was 11. The mean score was 6.9 (SD=1.584) indicating that on average the recovering patients had poor sleep and hence indicating low recovery outcome.

4.4.2.4 Quality of Life as an Indicator of Recovery Outcomes

The dimension of quality of life had ten items and thus the lowest possible score was 10 (10x1) and the highest possible score 40 (10x4). Scores ranging from 10 to 24 represented poor quality of life and hence indicating low recovery outcomes and 25 to 40 represented good quality of life and hence indicating high recovery outcomes. In quality of life as an indicator of recovery outcomes, higher scores represented good quality of life thus a high recovery outcome, and lower scores represented poor quality of life thus low recovery outcome.

The frequency for quality of life as an indicator of recovery outcomes are shown in table 4.20.
As shown in Table 4.20, 56.1% of the respondents had low recovery outcomes, while 43.9% had high recovery outcomes.

Table 4.21 presents the descriptive statistics for quality of life as an indicator of dimension of recovery outcomes.

Table 4.21 Descriptive Statistics Quality of Life as an Indicator of Recovery Outcomes

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of life</td>
<td>82</td>
<td>18</td>
<td>35</td>
<td>24.39</td>
<td>4.388</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results in Table 4.21, the minimum recovery outcomes score was 18, while the maximum score was 35. The mean score was 24.39 (SD=4.388) indicating that on average, recovering patients had poor quality of life and hence indicating low recovery outcomes.

4.5 Relationship between Adversity Quotient and Recovery Outcomes

This section presents data on objective three which sought to establish the relationship between Adversity Quotient and Recovery Outcomes. To achieve this relationship, the following null hypothesis was tested:

H₀: There is no statistically significant relationship between adversity Quotient and recovery outcomes among cancer patients in palliative care units in Nairobi and Nyeri Counties.

To test this hypothesis, the researcher conducted a Pearson Product Moment Correlation Coefficient (r). Pearson Product Moment Correlation Coefficient (r) was chosen because the
two variables met four critical assumptions (Kothari 2006). These are; the variables are measured either in the interval or ratio scale (continuous), outliers are either kept to a minimum or removed entirely and variables are approximately normally distributed as indicated by linear relationship between the two variables. The first critical assumption was met since the variables were measured using the interval scale. In assessing whether there was a linear relationship between the two variables, a scatter plot of the relationship between adversity quotient and recovery outcomes was plotted before the Pearson Product Moment Correlation Coefficient (r) could be run. The scatter plot is shown in figure 4.2.

![Figure 4.2 Scatter of the Relationship between Adversity Quotient and Recovery outcomes](image)

As shown in the scatter plot in figure 4.2, there was evidence of a weak linear relationship between adversity quotient and recovery outcomes. Higher scores of adversity quotient tended to go with higher scores of recovery outcomes and lower scores of adversity quotient tended to go with lower scores of recovery outcomes. It was therefore concluded that a Pearson product Moment Coefficient Correlation (r) could be run and its significance tested. From the scatterplot, two variables were also identified as outliers that would then be
removed before proceeding with the Pearson Correlation test. Table 4.15 shows the result of the Pearson product Moment Correlation Coefficient between adversity quotient and recovery outcomes and its significance tested at 0.05 level.

**Table 4.22 Correlation between Adversity Quotient and Recovery Outcomes**

<table>
<thead>
<tr>
<th>Recovery outcomes</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adversity quotient</td>
<td>.078</td>
<td>.488</td>
<td>82</td>
</tr>
</tbody>
</table>

From table 4.22, there was a weak positive correlation between adversity quotient and recovery outcomes, $r_s(82) = 0.078$, $p = 0.488$. This implies that the higher the adversity quotient, the higher the recovery outcomes. However these findings were not statistically significant at the 0.05 level. Based on these findings, the null hypothesis stating that there is no statistically significant relationship between adversity quotient and recovery outcomes was thus accepted.

Data was further analyzed to assess the relationship between adversity quotient and dimensions of recovery outcomes. The findings are presented in the subsequent tables.

**Table 4.23 Correlation between Adversity Quotient and Pain as an Indicator of Recovery Outcomes**

<table>
<thead>
<tr>
<th>Pain</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adversity Quotient</td>
<td>.184</td>
<td>.098</td>
<td>82</td>
</tr>
</tbody>
</table>

As shown in table 4.23, a Pearson product-moment correlation coefficient was run to assess the relationship between adversity quotient and dimension of pain. There was a weak positive relationship between adversity quotient and recovery outcomes for pain (low pain), $r(82) = 0.184$, $p = 0.098$. This implies that, increase in adversity quotient was correlated to decrease
in levels of pain (high recovery outcomes). However these findings were not statistically significant at 0.05 level.

Table 4.24 presents correlation between adversity quotient and weight as an indicator of recovery outcomes.

**Table 4.24 Correlation between Adversity Quotient and Weight as an Indicator of Recovery Outcomes**

<table>
<thead>
<tr>
<th>Adversity Quotient</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-.005</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.963</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
</tr>
</tbody>
</table>

As shown in table 4.24, a Pearson product-moment correlation coefficient was run to assess the relationship between adversity quotient and dimension of weight. There was a weak negative relationship between adversity quotient and change in weight, $r (82) = -.005$, $p=0.963$. This implies that, increase in adversity quotient was correlated with loss in weight (low recovery outcomes). However these findings were not statistically significant at 0.05 level.

Table 4.25 presents correlation between adversity quotient and sleep as an indicator of recovery outcomes.

**Table 4.25 Correlation between Adversity Quotient and Sleep as an Indicator of Recovery Outcomes**

<table>
<thead>
<tr>
<th>Adversity Quotient</th>
<th>Sleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.045</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.690</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
</tr>
</tbody>
</table>

As shown in table 4.25, a Pearson product-moment correlation coefficient was run to assess the relationship between adversity quotient and dimension of sleep. There was a weak positive relationship between adversity quotient and change in sleep, $r (82) = 0.045$, $p=0.69$. 

57
This implies that, an increase in adversity quotient is correlated with an increase in the quality of sleep. However these findings were not statistically significant at 0.05 level.

Table 4.26 presents correlation between adversity quotient and quality of life as an indicator of recovery outcomes

**Table 4.26 Correlation between Adversity Quotient and Quality of Life as an Indicator of Recovery Outcomes**

<table>
<thead>
<tr>
<th>Adversity Quotient</th>
<th>Quality of life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

As shown in table 4.26, a Pearson product-moment correlation coefficient was run to assess the relationship between adversity quotient and dimension of quality of life. There was a weak positive relationship between adversity quotient and change in quality of life, $r (82) = 0.033$, $p = 0.768$. This implies that, an increase in adversity quotient was correlated to a positive change in the quality of life. However these findings were not statistically significant as the significance level was tested at 0.05 level.

The researcher further sought to find out whether there was a relationship between recovery outcomes and the various dimensions of adversity quotient. The findings are as shown in the subsequent tables.

**Table 4.27 Correlation between Recovery Outcomes and Dimensions of Control**

<table>
<thead>
<tr>
<th>Recovery outcomes</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

From table 4.27, a Pearson product-moment correlation coefficient was run to assess the relationship between recovery outcomes and control dimension. There was a weak positive
relationship between recovery outcomes and change in control, \( r (82) = 0.08, p=0.475 \). This implies that, an increase in recovery outcomes was correlated to an increase in control dimension of adversity quotient. However, these findings were not statistically significant at 0.05 level.

Table 4.28 presents correlation between recovery outcomes and ownership as an indicator of adversity quotient.

**Table 4.28 Correlation between Recovery Outcomes and Dimensions of Ownership**

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Recovery outcomes</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td></td>
<td>.060</td>
<td>.591</td>
<td>82</td>
</tr>
</tbody>
</table>

From table 4.28, a Pearson product-moment correlation coefficient was run to assess the relationship between recovery outcomes and ownership dimension. There was a weak positive relationship between recovery outcomes and change in ownership dimension, \( r (82) = 0.06, p=0.591 \). This implies that, an increase in recovery outcomes was correlated with an increase in the ownership dimension as an indicator of adversity quotient. However these findings were not statistically significant as the significance at 0.05 level.

Table 4.29 presents correlation between recovery outcomes and reach as an indicator of adversity quotient.

**Table 4.29 Correlation between Recovery Outcomes and Dimensions of Reach**

<table>
<thead>
<tr>
<th>Reach</th>
<th>Recovery outcomes</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach</td>
<td></td>
<td>.053</td>
<td>.633</td>
<td>82</td>
</tr>
</tbody>
</table>

From table 4.29, a Pearson product-moment correlation coefficient was run to assess the relationship between recovery outcomes and reach dimension. There was a weak positive
relationship between recovery outcomes and change in reach dimension, \( r (82) = 0.053, p=0.633 \). This implies that, an increase in recovery outcomes was correlated to an increase in the reach dimension of adversity quotient. However these findings were not statistically significant at 0.05 level.

Table 4.30 presents correlation between recovery outcomes and endurance as indicator of adversity quotient.

**Table 4.30 Correlation between Recovery Outcomes and Endurance Dimension**

<table>
<thead>
<tr>
<th>Recovery outcomes</th>
<th>Endurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.094</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.403</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
</tr>
</tbody>
</table>

From table 4.30, a Pearson product-moment correlation coefficient was run to assess the relationship between recovery outcomes and endurance dimension. There was a weak positive relationship between recovery outcomes and change in endurance dimension, \( r (82) = 0.094, p=0.403 \). This implies that, an increase in recovery outcomes was correlated to an increase in endurance dimension of adversity quotient. However these findings were not statistically significant at 0.05 level.

The researcher further sought to establish whether there was a relationship between the various dimensions of recovery outcomes and dimensions of adversity quotient. The findings are as shown in table 4.31.
Table 4.31 Correlation between Dimensions of Adversity Quotient and Dimensions of Recovery Outcomes

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Control Pearson Correlation</th>
<th>Ownership Pearson Correlation</th>
<th>Reach Pearson Correlation</th>
<th>Endurance Pearson Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>.197</td>
<td>.137</td>
<td>.166</td>
<td>.182</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.077</td>
<td>.218</td>
<td>.137</td>
<td>.101</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Weight</td>
<td>.045</td>
<td>-.047</td>
<td>-.019</td>
<td>.007</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.691</td>
<td>.675</td>
<td>.863</td>
<td>.952</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Sleep</td>
<td>.024</td>
<td>0.54</td>
<td>.031</td>
<td>.054</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.827</td>
<td>.632</td>
<td>.783</td>
<td>.629</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Quality of life</td>
<td>.005</td>
<td>.050</td>
<td>.007</td>
<td>.057</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.968</td>
<td>.655</td>
<td>.951</td>
<td>.610</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

As shown in table 4.31, there was no statistically significant relationship between any of the dimensions of recovery outcomes and dimensions of adversity quotient, as the significance levels were not significant at 0.05 level.

4.6 Challenges encountered in Palliative Care

This section presents data on objective four which sought to identify the challenges that the respondents encountered in palliative care. To answer this objective, the researcher asked the respondents to indicate their participation in the different programs in palliative care that ranged from group psychotherapy, social support groups, spiritual support and coping skills and the challenges they faced while participating in the programs. In addition, the respondents were asked to give challenges they experienced while participating in these programs. The findings are presented in tables 4.3.2 and 4.3.3

Table 4.3.2 presents frequency of respondents’ participation into different palliative care programs.
Table 4.3.2 Respondents Participation in different Palliative Care Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group psychotherapy</td>
<td>77</td>
<td>91.7</td>
</tr>
<tr>
<td>Social support groups</td>
<td>64</td>
<td>76.2</td>
</tr>
<tr>
<td>Spiritual support</td>
<td>77</td>
<td>91.7</td>
</tr>
<tr>
<td>Coping skills</td>
<td>77</td>
<td>91.7</td>
</tr>
<tr>
<td>Others</td>
<td>19</td>
<td>22.6</td>
</tr>
</tbody>
</table>

From table 4.32, majority of the respondents indicated participating in the programs available at the palliative care institutions, which included; group psychotherapy (91.7%), spiritual support (91.7%) and programs on coping skills (91.7). Others (22.6%) participated in programs such as performing corals, knitting and board games. The challenges were identified by providing a column in the questionnaire for the respondents to fill in their challenges in regard to the palliative care programs.

Table 4.33 presents perceived challenges that the respondents experienced.

Table 4.33 Respondents Perceived Challenges in Palliative care Programs

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping with Cancer Illness</td>
<td>42</td>
<td>50.0</td>
</tr>
<tr>
<td>Financial support</td>
<td>66</td>
<td>78.6</td>
</tr>
<tr>
<td>Social Support</td>
<td>69</td>
<td>82.1</td>
</tr>
<tr>
<td>Spiritual support</td>
<td>63</td>
<td>75.0</td>
</tr>
<tr>
<td>Drug adherence</td>
<td>2</td>
<td>2.4</td>
</tr>
</tbody>
</table>
From table 4.33, 82.1% of the respondents said they experienced challenges of being isolated and lacking finances respectively. 50% of the respondents had a challenge in coping with the condition, while 2.4% experienced challenges in adhering to drugs.

4.7 Strategies that can be used to enhance Adversity Quotient and Recovery Outcomes
This section presents data on objective five, which sought to establish the strategies that can be put in place to enhance adversity quotient and recovery outcomes. Respondents were asked to give strategies that they thought could be used to enhance their recovery outcomes. The findings are as shown in table 4.34

Table 4.34 Strategies to Enhance Adversity Quotient and Recovery Outcomes

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruiting more members to palliative Care</td>
<td>53</td>
<td>63.1</td>
</tr>
<tr>
<td>Increasing Counseling sessions</td>
<td>69</td>
<td>82.1</td>
</tr>
<tr>
<td>Encouraging people to visit them</td>
<td>63</td>
<td>75.0</td>
</tr>
<tr>
<td>Financial support</td>
<td>70</td>
<td>83.3</td>
</tr>
<tr>
<td>Transport provision</td>
<td>66</td>
<td>78.6</td>
</tr>
<tr>
<td>Spiritual support from church leaders</td>
<td>22</td>
<td>26.2</td>
</tr>
</tbody>
</table>

From table 4.34, majority of the respondents (83.3%) suggested that the cancer patients should be provided with financial support to cater for the treatment. Drugs and diet, 82.1% indicated that counseling sessions and group activities be increased so as to enhance their adversity quotient and recovery outcomes. A further 78.6% suggested that they be facilitated with transport while coming for group sessions. 75% of the respondents also indicated that
community members be encouraged to visit them and offer social support to deter them from feeling isolated and lonely.

Qualitative findings on strategies suggested by respondents to enhance adversity quotient and recovery outcomes by the respondents in the palliative care programs are as presented below:

1. More members who have been living with cancer for a longer period of time or those whose cancer is at the remission stage and had undergone chemotherapy and radiotherapy should be recruited to join the palliative care programs to encourage the members especially the newly diagnosed cancer patients.

2. More group sessions should be added in the palliative care units were cited by the respondents. The Nairobi and Nyeri hospice have group sessions once a week and same applies to Nyeri Referral Hospital. The respondents noted that additional group meetings and sessions may play an important role in enhancing their adversity quotients and thus boosting their recovery outcomes.

3. Most of the respondents indicated that community members should be encouraged to visit them in their homes and offer social support to deter them from feeling isolated and lonely.

4. Financial support factored as one of the major challenges facing the respondents. Cancer patients incur a lot of expenses due to their illness. The respondents indicated that they would highly appreciate if financial support by well-wishers in the community and in the palliative care units could be provided so as to cater for their treatment, food and other living expenses.

5. Transport costs to the palliative care units posed as a challenge to most of the respondents especially in Nairobi County. The site of the facility is in a high-income suburb where accessibility is not easy and the cost of transport is relatively high due to its location. Most of the cancer patients that were attended
in these facilities had a meagre income and their economic background was quite low. Transport to the palliative care units attracts a cost and the respondents whom are benefitting due to the programs in the units would appreciate if they were provided with transport during the clinic and group therapy days. They also would like to have their money for transport reimbursed after attending a session.

6. Spiritual support from church leaders was another strategy that was cited by the respondents to enhance adversity quotient and recovery outcomes. The respondents cited that they would appreciate if their spiritual leaders were to visit them once in a while in order to talk and pray with them. This may enhance their adversity quotient and boost their recovery outcomes.

4.5 Summary of key findings
This section presents the summary of the research findings.

In terms of demographics, more than half of the respondents were females, with the males accounting for the rest of the respondents. Majority of participants were aged between 46 to 55 years old, and had been receiving treatment for between 1 to 5 years.

On the levels of AQ, descriptive findings indicated that on average, the respondents had a moderate level of adversity quotient.

Findings on the nature of recovery outcomes among patients in palliative care established that the majority of the respondents had low levels of recovery outcomes.

Findings on the relationship between Adversity Quotient and Recovery Outcomes established a weak positive relationship. Further analysis established that the relationship between adversity quotient and dimensions of recovery outcomes, recovery outcomes and dimensions of adversity quotient and dimensions of recovery outcomes were also not statistically significant.
Findings on the challenges encountered by patients in palliative care found out that majority of the respondents experienced challenges of being isolated and lacking finances respectively.

Findings on the strategies that can be put in place to enhance adversity quotient and recovery outcomes, established that most of the participants would like cancer patients be provided with financial support to cater for their treatment, drugs and diet, while others suggested that counseling sessions and group activities be increased so as to enhance their adversity quotient levels and boost their recovery outcomes.
CHAPTER FIVE
DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
This chapter presents the discussion of the findings, conclusions and recommendations of the study on the relationship between adversity quotient and recovery outcomes of patients undergoing palliative care in Nairobi and Nyeri Counties. The chapter begins with the discussion, followed by the conclusions drawn from the discussions and finally the recommendations arising from the study.

5.2 Discussion of the Findings
In this section, the researcher discusses the findings of the study in accordance to the four research study objectives.

5.2.1 Levels of Adversity Quotient among Cancer Patients
The first objective was to find out the levels of Adversity Quotient among cancer patients in palliative care units, the descriptive findings indicated that on average, the respondents had a moderate level of adversity quotient. Findings indicated that majority of the respondents (57.1%) had a high adversity quotient level, while 11.9% of the respondents had a low adversity quotient level.

Data on adversity quotient level was further analyzed descriptively in terms of means and standard deviation. The finding also indicates that the AQ level amongst the respondents was not at a high level as expected, considering the influence by the period since the majority of participants had been diagnosed with cancer between 1 to 2 years earlier. The lowest adversity quotient level score attained by the respondents was 32, while the highest score was 93. The adversity quotient means score was 68.98±13.54, this signified that the adversity quotient for the respondents was in the moderate level.
The findings can be compared to findings by Becker and Newton (2004) which established that AQ displayed in the event of severe illnesses, found patients overwhelmed at first but would then demonstrate resolve, perseverance and resilience.

The initial period after a cancer diagnosis, may cause a negative psychological impact among the affected patient. It is likely that the emotive state of the patient may be highly compromised due to the shock which a Cancer diagnosis may cause. The patient may have to use all their internal resources to overcome this first phase of shock in order to boost their AQ, so as to start their recovery. The findings are also in tandem with those of Arber & Spencer (2013), which established that all the cancer patient’s participants in that study reported high levels of uncertainty and lack of control that lead to psychosocial distress especially in the first three months of diagnosis. This distress could contribute to lower AQ levels among the affected patients.

Similarly, the AQ levels not being high may have been associated with the financial impact associated with cost of treatment, diet and other decisions that have to be made in relation to the illness. In this study, the researcher found that many of the respondents were from a low-income bracket which was indicated by the findings of finances as a challenge amongst the respondents. This finding is consistent with study findings by Hoffman & Lent (2013), that a cancer diagnosis entails countless decisions, treatments, and challenges across the cancer care continuum. The above-mentioned variables were identified during the findings as a contributory factor among the respondents and they may have played a part in the findings of moderate level of AQ by the researcher.

From the findings the researcher established that majority of the respondents from Nairobi had moderate AQ level compared to respondents from Nyeri who had high AQ level. This difference may be explained by the fact that respondents in Nyeri County were more likely to experience social and emotional support from their environmental setup which is more rural
compared to the respondents in Nairobi where the set-up is perceived to be more urban hence less availability of social and emotional support.

5.2.2 Nature of Recovery Outcomes among Patients in Palliative Care

Nature of Recovery Outcomes among Patients in Palliative Care was established that majority of the respondents had low levels of recovery outcomes. These findings were not unusual considering that most of the patients were newly diagnosed with cancer and for some respondent’s metastasis had set in. This is when the cancer cells spread from the target organ to other parts of the body. According to the findings majority of the respondents (65.5%) had a low level of recovery outcomes, while 32.1% had a high level of recovery outcomes. The findings also supported by previous findings by Berger (2009) which have shown that while majority of cancer survivors lead healthy and active lives, cancer can have a significant and long-term effect on their body through experience of chronic pain, sleep interruption, weight loss and diminished quality of life. This finding that the study respondents had low recovery outcomes could also be explained by the fact that most of the respondents had been receiving palliative care for a period of between 0 to 5 years and majority had been diagnosed with cancer between 1 to 2 years earlier. During the initial period after cancer diagnosis and embarking on palliative care, patients are more likely to be disturbed by pain, changes in sleep patterns and loss of weight (Becker and Newton 2004).

Further descriptive analysis of recovery outcomes established that on average, the dimension of pain was in the low level of recovery outcome. In the initial stages after a cancer diagnosis, patients may complain of experiencing high levels of pain especially those whose cancer has spread to adjacent organs. Some of the respondents may have been experiencing high level of pains due to metastasis of their cancer and they were at the initial stages of drug and psychotherapy interventions. This finding is supported by those of Lesarge and Portenoy (1999), who found out that pain, was common among people with cancer, with 30%
to 50% of people with cancer experiencing pain and 90% of those with advanced cancer experiencing pain.

The outcome could also be due to majority of the cancer patients being newly diagnosed with cancer may have reduced coping threshold which may make them have symptoms such as loss of appetite or refusal to eat due to their belief that they may die soon. (Becker and Newton 2004). These findings are consistent with studies by Vigano, Watanabe & Bruera (1994) where weight loss has been used as an indicator of poor prognosis in cancer patients.

The researcher found out that majority of the respondents came from a financially challenged background where most of the cancer patients especially in Nairobi County were struggling to get a proper nutritional diet in line with their cancer disease which requires nutritious and adequate diet. This may have contributed to their weight dimension falling in the low range of recovery outcome. The findings are also consistent with study findings by Carver (2006) where weight loss is a common phenomenon among people with cancer and is usually the first noticeable sign of the disease.

This study finding was in tandem with a study by National Cancer Institute (2010) that reported that up to 40% of people diagnosed with cancer report unexplained weight loss at the time of diagnosis, and up to 80% of people with advanced cancer experience weight loss and cachexia (muscle loss). Many patients experience unintentional weight loss leading to a diagnosis of cancer. Studies have reported weight loss attributed to poor feeding in 30% to 85% of patients with cancer (Martin, Birdsell, Macdonald, 2013).

The findings are also consistent with the findings by Bethesda (2011) who established that chemotherapy and radiation used in cancer treatments often caused reduced appetite due to their side effects such as nausea, vomiting, leading to inability to feed well contributing to muscle loss and loss of weight. From the current findings, it is apparent that progression in
cancer illness, side effects from medication and deficiency in food nutrition value have a significant impact on weight. In a study by Macasa (2016) the findings deduced were: cancer associated weight loss has a considerable social, psychological and physical impact on the patient experience and can affect the quality of life.

The dimension of sleep had an average recovery outcome in the low level. This finding was in line with study findings by the National Cancer Institute (2010) which indicates that nearly 45% of cancer patients’ experiences sleep disturbances. Previous studies as indicated above have shown that during the initial periods after a cancer diagnosis, major negative psychological impact may develop among the affected patients and may cause sleep disturbance.

The findings of this study also concur with study findings by Savard& Morin, (2001) that cancer being a long-term illness that impacts on the psychological aspect of the patient may cause sleep disturbances. Researchers have shown that approximately one-third to one-half of people with cancer experience sleep disturbance. Up to half of cancer patients don’t sleep well at some point. Insomnia is most common, with up to 80 percent of cancer patients having difficulty falling and/or staying asleep. Cancer patients are twice as likely to experience insomnia as people without cancer. (National Cancer Institute, 2010). The current study findings are in tandem with the findings above; since the researcher found out that the respondents were facing challenges such as lack of social and financial support which may have negatively influenced sleeping duration and quality.

The findings further established that the quality of life dimension was in the low level. These findings were expected since some of the cancer patients were in the advanced stages of cancer and were experiencing increased dependence on others for physical and emotional support which may have negatively influenced their quality of life. Otherwise the study finding concurs with a survey conducted in USA by Forsythe, (2012) which established that
approximately one in four cancer survivors had a diminished quality of life due to physical problems.

Descriptive analysis of data on levels of recovery outcomes by County established that the mean recovery outcomes in both Counties were in the low range. Thus, the mean for Nyeri County was slightly higher than that of Nairobi County. The slight difference between the two Counties can be possibly explained by the level of psychosocial support available to patients in each County. Patients in Nyeri were more likely to experience social and emotional support compared to their counterparts in Nairobi due to the availability of extended families and more communal tendencies.

5.2.3 Relationship between Adversity Quotient and Recovery Outcomes
Findings on the relationship between Adversity Quotient and Recovery Outcomes established a weak positive correlation between the two. Such that, as adversity quotient scores increased the recovery outcomes scores tended to increase in the same direction. This finding was expected since Stoltz (2000) proposed that the higher the AQ level the more the individual is able to overcome adversities in life, thus in this study the higher the AQ level amongst the cancer patients the more likely the recovery outcomes will be high.

According to the findings there was a weak positive correlation between adversity quotient and recovery outcomes, $r,(82) = 0.078, p = 0.488$. This implies that the higher the adversity quotient, the higher the recovery outcomes.

This finding was in agreement with previous studies by Carver and Scheier (1985) on the relationship between AQ and recovery for breast cancer patients after surgery in Mexico which established that AQ was positively related to recovery outcomes as measured by reduced pain, increased sleep and reduced stress at each point during the study.
Findings on the relationship between adversity quotient and dimensions of recovery outcomes established a weak positive relationship between adversity quotient and dimension of pain experienced a relationship that was not statistically significant. A weak negative relationship was also established between adversity quotient and dimension in weight. There was also a weak positive relationship between adversity quotient and dimension in sleep, a relationship that was not statistically significant. The findings also established a weak positive relationship between adversity quotient and dimension in quality of life, a relationship that was not statistically significant.

Findings on correlation between dimensions of adversity quotient and dimensions of recovery outcomes established a positive relationship between the dimensions except the relationship between endurance, ownership and reach where there was a negative correlation. These findings are consistent with findings by Carver and Scheier (1985) on the relationship between adversity quotient and recovery outcomes for breast cancer patients after surgery in Mexico. The finding established that adversity quotient was positively related to recovery outcomes as measured by reduced pain, increased sleep and reduced stress. This was confirmed earlier by Gotay, Isaacs and Pagano (2004) on cancer survivors, which found out that high AQ levels was associated with better quality of life, lower levels of depression, increased sleep and reduced pain.

5.2.4 Challenges Encountered in Palliative Care

Findings on the challenges that the respondents encountered in palliative care units was done in relation to the programs that was offered at the palliative care facilities established that majority of the respondents experienced challenges of being isolated and lacking finances respectively. The finding of this study indicated that majority of the respondents participating in the programs available at the palliative care institutions, which included; group psychotherapy (91.7%), spiritual support (91.7%) and programs on coping skills (91.7). Others (22.6%) participated in programs such as performing corals, knitting and board
The findings draw a similarity with the findings by Yeolekar & Mehta, (2008) which was conducted on challenges in a palliative care unit and identified pain and symptom control, psychological and spiritual support and identification of alternative sites as key challenges.

The study findings also agreed with Robert Lent (2004) Restorative Model of Well-Being theory which informed the study, that cognitive and behavioral coping strategies, personality variables, coping self-efficacy, and social support and resources determine the resolution of the problem and recovery of life satisfaction. The findings of the study are in agreement with Ferlic, Goldman, and Kennedy (1979) who proposed that going beyond the traditional support group was necessary to examine the patient’s adjustment to illness, communication, cancer-related knowledge, psychological adjustment to illness, and self-concept.

In the current study the respondents were appreciative of the counselling strategy of psychotherapy offered at the palliative units. The study findings revealed that cancer patients’ indicated that they benefited immensely during group therapy which caused them to find universality in response to cancer illness amongst themselves. The findings also concur with the findings by Blake-Mortimer, et al, (2010) which stated that about one-third to one-half of cancer survivors will experience clinically significant levels of distress during the course of their illness, and coping skills in the groups are an effective means of treatment.

In the study by Faul, Jim, Williams, Loftus, & Jacobsen, (2010)it was found that, a particularly stressful component of cancer care is chemotherapy treatment and coping skills such as relaxation and stress management training have proven useful in managing anticipatory nausea. This finding is consistent with the current study findings where respondents found coping skills to be important in managing the cancer disease since they go a long way in enhancing AQ and promoting higher levels of recovery outcomes.
Findings by Elsie (2017) also concluded that in Kenya, one of the major issues facing cancer patients is access to finances. Cancer diagnosis and treatment is quite expensive, therefore most patients in the lower earning class struggle to access medical and palliative care especially in Kenyatta National Hospital due to high costs. According to the findings most families have to change their lifestyles in order to redirect some of their finances to the patient’s treatment. The findings are also consistent with the findings by David C. Currow, Marie Fallon, Nathan Cherny, Russell K. Portenoy, and Stein KaasaIn (2015) that found that in the United States, many hospices are small and are forced to limit access or deny treatment with accepted palliative interventions because of the high cost factor which is a major challenge encountered in palliative care unit.

5.2.5 Strategies that can be used to enhance Adversity Quotient and Recovery Outcomes
Findings on the strategies to enhance adversity quotient and recovery outcomes concluded that majority of the respondent’s required financial support towards catering for treatment, drugs and diet. The evidence is consistent with earlier findings by Uitterhoeve, Vernoy, Litjens, Potting, Bensing, DeMulder, VanAchterberg (2004) who established that psychotherapy intervention-Multiple reviews have shown that group psychotherapy, including cognitive-behavioral, informational, non-behavioral, social support, and using unusual treatments such as music and art therapy may be beneficial in supporting cancer survivors throughout the trajectory of the illness. The researcher also found that, the strategies used to enhance recovery outcomes in the palliative care were beneficial to the cancer patients, but more emphasis was placed on group psychotherapy.

This was concluded by that majority of the respondents (83.3%) suggested that the cancer patients should be provided with financial support to cater for the treatment. Drugs and diet, 82.1% indicated that counseling sessions and group activities be increased so as to enhance their adversity quotient and recovery outcomes. A further 78.6% suggested that they be
facilitated with transport while coming for group sessions. 75% of the respondents also indicated that community members be encouraged to visit them and offer social support to deter them from feeling isolated and lonely.

The findings confirm earlier works by Robert Lent (2004) who argues according to the Restorative Model of Well-Being theory that cognitive and behavioral coping strategies, personality variables, coping self-efficacy, and social support and resources determine the resolution of the problem and recovery of life satisfaction. The findings of the study are consistently with Goldman, and Kennedy (1979) who concluded that going beyond the traditional support group was necessary to examine the patient’s adjustment to illness, communication, cancer-related knowledge, psychological adjustment to illness, and self-concept.

5.3 Conclusions
This study was undertaken to examine the relationship between adversity quotient and recovery outcomes of patients undergoing palliative care in Nairobi and Nyeri Counties. This section provides the conclusions of the study in relation with the objectives.

On the levels of Adversity Quotient, the participants had moderate levels of AQ possibly because majority of them had been diagnosed with cancer between 1 to 2 years earlier hence may have still been overwhelmed by their illnesses and the subsequent cost in initiation of treatment and diet thus lowering their AQ to moderate levels.

On the Nature of Recovery Outcomes among Patients in Palliative Care, majority had low recovery outcomes possibly because most had been receiving palliative care for a period of between 0 to 5 years.
The study findings established a weak positive relationship between adversity quotient and recovery outcomes. This finding was significant and may be attributed to the support the respondents were receiving in the palliative care units, communities and families.

The study findings established that the main challenges facing patients receiving palliative care were related to their economic background because the services and treatment are quite expensive and thus the patients feel isolated due to lack of finance.

Among the strategies that could be used to enhance adversity quotient and recovery outcomes in the palliative care were psychotherapy.

5.4 Recommendations
The following recommendations were made based on the findings of the study for policy makers and implementers including further research. The recommendations are given as per the study objectives.

5.4.1 Recommendation for policy makers and implementers
To enhance adversity quotient among patients undergoing palliative care in order to improve recovery outcomes the following measures should be instituted in Palliative Care Units:

1. More cancer related programs enhancing patients AQ should be put in place by the counsellors in order to increase the patients AQ in the palliative care units from moderate level to high level of AQ in order to boost recovery outcomes.

2. The researcher recommends that counselors in palliative care units should use counselling strategies such as spiritual and financial support to address the cancer patients’ fears since initially, a cancer diagnosis is daunting and it may cause a decrease in AQ and thus low recovery outcomes. This will improve the low level of recovery outcomes.
3. The researcher recommends that the palliative care units staff should encourage participation of family members, friends and significant others in the cancer continuum, so as to provide psychological and social support to patients. This inclusion will help the patient’s family members and friends understand the challenges faced by the client and such collaboration may enhance AQ and boost recovery outcomes among the patients as well as reduce isolation which emerged as one of the challenges.

4. The researcher recommends that the counsellor in collaboration with the administrators and medical staff in the palliative care units should create awareness and encourage the attending patients to source for a health insurance cover e.g. National Health Insurance Fund (NHIF) to cater for the cancer disease both outpatient and incase of hospitalization. This will ease the financial burden of cancer on the patient, family and community which was identified as a challenge.

5. The study also recommends enhancing the effectiveness of the available counseling strategies used in palliative care units such as increasing the counseling sessions and group activities as well introducing a variety of therapeutic activities such as music and art therapy to boost recovery outcomes in the palliative care units

5.4.2 Recommendation for further research.
This study recommends further study on the following areas to address its limitations:

i. A comparative study should be conducted to assess whether there is a difference between adversity quotient and recovery outcomes between male and female cancer patients, which was not addressed in the current study.

ii. A similar study should be replicated with a larger sample size.

iii. A study to examine the nature of recovery outcomes among patients who do not have access to palliative care.
iv. Further study to explore more on the relationship between recovery outcomes dimensions of pain and weight with adversity quotient.

v. A study to examine the nature of recovery outcomes among patients who do not have access to palliative care.
REFERENCES


Arber A., Spencer L. (2013). <i>It's all bad news': the first 3 months following a diagnosis of malignant pleural mesothelioma</i>. Psychooncology 22, 1528–1533. 10.1002/pon.3162


Borgogno F. (2014). <i>Making the best of what has been done to you and of what you yourself have done: commentary on papers by Joan Sarnat and Emanuel Berman</i>. <i>Psychoanal. Dialogues</i> 24, 549–557. 10.1080/10481885.2014.949489 [cross ref]


David C. Currow, Marie Fallon, Nathan Cherny, Russell K. Portenoy, and Stein Kaasa Facing the challenges of palliative care:evolution: *Journal of Australian Research in Education.*


Kinyua J. & Murimi J. (February 5th, 2016). *Cancer deaths outstrip Aids’ during the eighties People Daily*. @PeopleDailyKe


National Cancer Registry(2014)
Nyeri County Referral Hospital, (2015).


APPENDICES

Appendix I: Introduction Letter and Consent Form for the Respondent

My name is Joyce M. Wang’ombe. I am a Masters student at Kenyatta University; I am conducting a research study on “Relationship between Adversity Quotient and Recovery Outcomes among cancer patients attending Palliative care in Nairobi and Nyeri Counties”. The information you provide will only be used for the above-named study.

**Procedures to be followed**

Participation in this study will require you to respond to a questionnaire that will be provided. The information will only be used for the intended research purposes and will bear no identifying information. You have the right to refuse participation in this study. Please remember the participation in this study is voluntary. You may ask questions related to the study at any time.

You may refuse to respond to any questions and may stop responding at any time. You may also stop being in the study at any time without any consequences.

**Discomforts and Risks**

The study involves no known risk to you and contains no deception. However if any of the questions make you uncomfortable, you may refuse to answer these questions if you so choose.

**Benefits**

Participation in this study is voluntary and if you choose to participate, your information will help in understanding if there is a relationship in adversity quotient and recovery outcomes among cancer patients. In case of any counselling needs, the services will be offered.

**Confidentiality**
Privacy and confidentiality will be ensured. You are not required to write your names on the questionnaire to ensure anonymity. The questionnaires will be kept in a private office in order to ensure privacy.

Contact Information

If you have any questions you may contact Dr. Beatrice Kathungu on 0727893955 or the Kenyatta University Review Committee Secretariat on chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke or ercku2008@gmail.com.

Investigator’s Statement

I, the undersigned have explained to the volunteer in a language that he/she understands, the procedures to be followed in the study and the risks and benefits involved.

Name of the investigator………………………………………………………………………………

……………………………………..………………………………………………..

Investigator’s signature Date
Appendix II: Consent Form for the Respondent

The information regarding my participation in the study on Relationship between Adversity Quotient and Recovery Outcomes among cancer patients attending Palliative care units in Nairobi and Nyeri Counties is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my record will be kept private.

---------------------------------------
Signature

---------------------------------------
Date
Appendix III: Research Authorization Letter from County Health Services (Nairobi City County)

NAIROBI CITY COUNTY

COUNTY HEALTH SERVICES

2nd June, 2017

Joyce Muthoni Wang’ombe,
P.O. Box 1693-10100
NYERI

RE: RESEARCH AUTHORIZATION

This is to inform you that the Nairobi City County Operational Technical Working group reviewed the documents on the study titled, “Relationship between adversity quotient and recovery outcomes among cancer patients attending palliative care units in Nairobi County”.

I am pleased to inform you that you have been authorized to undertake the study in Nairobi County.

On completion of the study, you will submit one hard copy and one copy in PDF of the research findings to our operational research technical working group.

R. K. MULI
FOR: COUNTY DIRECTOR OF HEALTH SERVICES
NAIROBI COUNTY

FOR: COUNTY DIRECTOR
HEALTH SERVICES
NAIROBI COUNTY

CC:
All Sub County MOHs
All Medical Superintendents
Appendix IV: Research Authorization Letter from Ministry of Education

Ref: RCE/NRB/GEN/IV/VOL. 1

Joyce Muthoni Wangombe
Kenyatta University
P O Box 43844-00100
NAIROBI

DATE: 5th June, 2017

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on “Relationship between adversity quotient and recovery outcomes among cancer patients attending palliative care in Nyeri and Nairobi Counties, Kenya”

This office has no objection and authority is hereby granted for a period ending 28th October, 2017 as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

MAINAN GURU
FOR: REGIONAL COORDINATOR OF EDUCATION
NAIROBI

C.C
Director General/CEO
Nation Commission for Science, Technology and Innovation
NAIROBI
Appendix V: Research Authorization Letter from Department of Health Services County Government of Nyeri

COUNTY GOVERNMENT OF NYERI

DEPARTMENT OF HEALTH SERVICES

OUR REF: CP/CIRC/21/260

Date: 26th October 2016

The Medical Superintendent
Nyeri County Referral Hospital

RE: RESEARCH AUTHORIZATION

This is to inform you that the bearer of this letter Joyce Muthoni Wang’ombe is a student at Kenyatta University pursuing a Master of Arts Degree Counselling Psychology.

She is hence introduced to do research in your facility.

She will research on “Relationship between Adversity Quotient and Recovery Outcomes Among Cancer Patients Attending Palliative Care in Units in Nyeri and Nairobi Counties at the Nyeri County Referral Hospital.” The student must deposit a copy of the final report with the department following completion of the study.

Dr. Nelson Muriu
County Director of Health Services
NYERI COUNTY
Appendix VI: Research Application Letter from Ethics Review Committee Kenyatta University

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE
P. O. Box 43844,
Nairobi, 00100
Tel: 8710901/12

Our Ref: KU/R/COMM/51/832

Date: 19th October, 2016

Joyce Muthoni Wang’ombe
Kenyatta University
P. O. Box 43844 – 00100
NAIROBI

Dear Joyce

APPLICATION NUMBER PKU/S80/1668 – “RELATIONSHIP BETWEEN ADVERSITY QUOTIENT AND RECOVERY OUTCOMES AMONG CANCER PATIENTS ATTENDING PALLIATIVE CARE UNITS IN NYERI AND NAIROBI COUNTIES, KENYA”

1. IDENTIFICATION OF PROTOCOL
The application before the committee is with a research topic “Relationship Between Adversity Quotient and Recovery Outcomes among Cancer Patients attending Palliative Care Units in Nyeri and Nairobi Counties, Kenya” received on 19th September, 2016 and discussed on 11th October, 2016.

2. APPLICANT
Joyce Muthoni Wang’ombe

3. SITE
Nyeri and Nairobi Counties, Kenya

4. DECISION
The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 13th October, 2016.

5. ADVISE/CONDITIONS
i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

DR. TITUS KAHIGA
CHAIRMAN ETHICS REVIEW COMMITTEE


cc. Vice-Chancellor
DVC-Research Innovation and Outreach
Appendix VII: Research Authorization Letter from Graduate School- Kenyatta University

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P. O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 4150

Our Ref: C50/CE/20374/2012

DATE: 8th September, 2016

Director General,
National Commission for Science, Technology and Innovation
P. O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR JOYCE MUTHONI WANGOMBE—REG. NO. C50/CE/20374/2012

I write to introduce Ms. Joyce Muthoni Wangome who is a Postgraduate Student of this University. She is registered for M.A degree programme in the Department of Psychology.

Ms. Wangome intends to conduct research for a M.A Project Proposal entitled, “Relationship Between Adversity Quotient and Recovery Outcomes among Cancer Patients attending Palliative Care Units in Nyeri and Nairobi Counties, Kenya.”

Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

[Stamp: KENYATTA UNIVERSITY OFFICE OF DEAN]

19 SEP 2016
Appendix VIII: Research Permit from National Commission for Science, Technology and Innovation

THIS IS TO CERTIFY THAT:
MS. JOYCE MUTHONI WANGOMBE
of KENYATTA UNIVERSITY, 0-10100 NYERI, has been permitted to conduct research in NAIROBI, NYERI COUNTIES on the topic: RELATIONSHIP BETWEEN ADVERSITY QUOTIENT AND RECOVERY OUTCOMES AMONG CANCER PATIENTS ATTENDING PALLIATIVE CARE UNITS IN NYERI AND NAIROBI COUNTIES, KENYA

for the period ending:
28th October, 2017

Applicant’s Signature

Director General
National Commission for Science, Technology & Innovation
Appendix IX: Research Authorization Letter from National Commission for Science, Technology and Innovation

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471
2241349.310571,2219420
Fax:+254-20-318245,318240
Email: ap@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote
Ref. No. NACOSTI/P/16/86510/14029

1st November, 2016

Joyce Muthoni Wangombe
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Relationship between adversity quotient and recovery outcomes among cancer patients attending palliative care units in Nyeri and Nairobi Counties, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Nyeri and Nairobi Counties for the period ending 28th October, 2017.

You are advised to report to the County Commissioners, the County Directors of Education and the County Directors of Health Services, Nyeri and Nairobi Counties before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nyeri County.

The County Director of Education
Nyeri County.
Appendix X: Approval of Research Project Proposal Letter from Graduate School – Kenyatta University

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

FROM: Dean, Graduate School

INTERNAL MEMO

DATE: 7th September, 2016

TO: Joyce Muthoni Wang’ombe
C/o Psychology Dept.

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

We acknowledge receipt of your revised Research Project Proposal as per our recommendations raised by the Graduate School Board of 10th August, 2016.

You may now proceed with your Data Collection, subject to clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

Thank you.

JACKSON LVUSI

FOR: DEAN, GRADUATE SCHOOL

cc. Chairman, Department of Psychology Supervisors:

1. Dr. Beatrice Kathungu
C/o Department of Psychology
Kenyatta University

19 SEP 2016
## Appendix XI: Research Plan

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Proposal Writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proposal presentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proposal correction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Submission For defense</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Report Writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Report Submission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Report defense</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix XII: Research Budget

<table>
<thead>
<tr>
<th>Item(s)</th>
<th>Unit Price</th>
<th>Total cost (Ksh)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Printing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 copies of Research proposal</td>
<td>600.00</td>
<td>12,000.00</td>
</tr>
<tr>
<td>7 copies of research Project Report draft</td>
<td>1000.00</td>
<td>7,000.00</td>
</tr>
<tr>
<td>8 copies of Research project</td>
<td>1000.00</td>
<td>8,000.00</td>
</tr>
<tr>
<td><strong>Binding</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 copies of Research Proposal</td>
<td>50.00</td>
<td>1,000.00</td>
</tr>
<tr>
<td>8 copies of Research Project report</td>
<td>200.00</td>
<td>1,400.00</td>
</tr>
<tr>
<td>Cancer patients questionnaires</td>
<td>50</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Stationery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One note book</td>
<td>200.00</td>
<td>200.00</td>
</tr>
<tr>
<td>20 ball pens</td>
<td>10.00</td>
<td>200.00</td>
</tr>
<tr>
<td>20 Pencils</td>
<td>10.00</td>
<td>200.00</td>
</tr>
<tr>
<td>1 realm Foolscaps</td>
<td>400.00</td>
<td>400.00</td>
</tr>
<tr>
<td>1-piece eraser</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>10 Folders</td>
<td>30.00</td>
<td>300.00</td>
</tr>
<tr>
<td>1 scientific calculator</td>
<td>1200.00</td>
<td>1200.00</td>
</tr>
<tr>
<td>1 ruler</td>
<td>20.00</td>
<td>20.00</td>
</tr>
<tr>
<td>1 pencil sharpener</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>5 spring files</td>
<td>80.00</td>
<td>400.00</td>
</tr>
<tr>
<td>Researcher’s subsistence for 5 days</td>
<td>1000.00</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Transport to sampled hospital for 5 days by taxi</td>
<td>2000.00</td>
<td>10,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>48,442.00</strong></td>
</tr>
<tr>
<td>Contingencies(10% of total)</td>
<td></td>
<td>9,940.00</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td></td>
<td><strong>99,740.00</strong></td>
</tr>
</tbody>
</table>
Appendix XIII: Questionnaire

Cancer Patients’ Questionnaire

Section A: Demographic information

Tick (√) or answer what applies to you

1. Gender?
   Male [ ]
   Female [ ]

2. Age in years? …………………..

3. How long have you been receiving palliative care in this centre? …………………..

4. Which year were you diagnosed with cancer? …………………..

Section B: Adversity Response Profile

This section aims to measure adversity quotient dimensions, namely control, ownership, reach and endurance you possess. It has been adopted from Dr. Stoltz (2000) ARP questionnaire for the purpose of this study; it has 20 items in a 5 point likert scale. For each item you are required to tick (√) the response which suits you best. Please note that for question 1-20 please tick on the space provided that is from box 1-5 only. The information provided by you will be kept confidential and will be used for research purposes only. Please give genuine, prompt and honest answers. If any item/statements are unclear to you, ask the researcher to clarify your doubts. Please do not leave any question unanswered.

1. Assuming that you lose a lot of money due to a bad harvest.
   To what extent do you feel you can influence this situation?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Completely</th>
</tr>
</thead>
</table>

2. Imagine you are overlooked for treatment at the palliative care unit.
   To what extent do you feel responsible for improving the situation?

<table>
<thead>
<tr>
<th>Not responsible at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Completely responsible</th>
</tr>
</thead>
</table>

3. Suppose you are criticized for a big project that you just completed.
The consequences of this situation will:

<table>
<thead>
<tr>
<th>Affect all aspects of my life</th>
<th>Be limited to this situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

4. Suppose you accidentally destroy an important document such as a title deed. *The consequences of this situation will:*

<table>
<thead>
<tr>
<th>Last for ever</th>
<th>Quickly pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

5. The high-priority project you are working on e.g. buying land, gets canceled. *The consequences of this situation will:*

<table>
<thead>
<tr>
<th>Affect all aspects of my life</th>
<th>Be limited to this situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

6. Someone you respect ignores your attempt to discuss an important issue. *To what extent do you feel responsible for improving this situation?*

<table>
<thead>
<tr>
<th>Completely responsible</th>
<th>Not responsible at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

7. People criticize your latest ideas. *To what extent do you feel it will affect you?*

<table>
<thead>
<tr>
<th>Completely</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

8. You are unable to take a much-needed leave at work. *The consequences of this situation will:*

<table>
<thead>
<tr>
<th>Last long</th>
<th>Quickly pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

9. You encounter difficulties on your way to an important appointment. *The consequences of this situation will:*

<table>
<thead>
<tr>
<th>Affect all aspects of my life</th>
<th>Be limited to this situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>
10. After looking everywhere, you cannot find an important document.

*The consequences of this situation will:*  

<table>
<thead>
<tr>
<th>Last for ever</th>
<th>Quickly pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

11. You workplace has a big shortage of workers.

*To what extent do you feel responsible for improving this situation?*

<table>
<thead>
<tr>
<th>Completely responsible</th>
<th>Not responsible at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

12. You miss an important appointment.

*The consequences of this situation will:*  

<table>
<thead>
<tr>
<th>Affect all aspects of my life</th>
<th>Be limited to the situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

13. You are unable to work well due to pressure at home and work

*To what extent can you influence this situation?*

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

14. You don’t seem to have enough money.

*The consequences of this situation will:*  

<table>
<thead>
<tr>
<th>Last for ever</th>
<th>Quickly pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

15. You are not taking medication regularly though you know you should.

*To what extent can you influence this situation?*

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

16. You are unable to meet the goals you have set
To what extent do you feel responsible for improving this situation?

<table>
<thead>
<tr>
<th>Not responsible at all</th>
<th>Completely responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

17. Your work tools are not working well for the third time this week.

To what extent can you influence this situation?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Completely responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

18. The meeting you are in is a total waste of time.

To what extent do you feel responsible for improving this situation?

<table>
<thead>
<tr>
<th>Not responsible at all</th>
<th>Completely responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

19. You lost something that is important to you.

The consequences of this situation will:

<table>
<thead>
<tr>
<th>Last for ever</th>
<th>Quickly pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

20. Your boss/spouse completely disagrees with your decision.

The consequences of this situation will:

<table>
<thead>
<tr>
<th>Affect all aspects of my life</th>
<th>Be limited to the situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
Considering the various aspects listed below please tick (✓) the extent to which you agree or disagree with each of the statements in regard to your life for the past two weeks after treatment.

<table>
<thead>
<tr>
<th>A</th>
<th>Over the past two (2) weeks</th>
<th>Not all extent</th>
<th>To a lesser extent</th>
<th>To a moderate extent</th>
<th>To a great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>The level of pain experienced is less</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>My pain experience is constantly high</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>I am able to walk longer since the level of pain experienced is lower</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>I am able to enjoy my mornings due to decreased pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>My weight has steadily increased since I last weighed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>My friends tell me I have added some weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>I feel like my weight has increased</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>I have to be woken up by someone in the morning due to over sleeping.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>I’m restless throughout the night due to sleeping difficulties</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>I wake up refreshed in the morning due to adequate sleep.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D</th>
<th>Over the past two (2) weeks</th>
<th>Not all extent</th>
<th>To a lesser extent</th>
<th>To a moderate extent</th>
<th>To a great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>I have experienced increased appetite changes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td>I have experienced increased muscle weakness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii)</td>
<td>I have experienced increased levels of anxiety and worry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv)</td>
<td>I have experienced increased levels of feeling lonely/abandoned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v)</td>
<td>I have experienced increased difficulty in concentration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi)</td>
<td>I have experienced decreased dependence on others for physical support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vii)</td>
<td>I have experienced increased emotional support seeking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>viii)</td>
<td>I have experienced increased spiritual support seeking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ix)</td>
<td>I have experienced an increased sense of personal hygiene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>x)</td>
<td>I have experienced an increased urge for sexual activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(source: Wang’ombe, 2016)

Section D: Challenges and Strategies that can be used to enhance Adversity Quotient and Recovery outcomes (overcoming challenges of cancer disease)
Listed below are some activities that have been used to overcome challenges that come up as a result of cancer disease. Please indicate if you are involved in any of the listed activities, and if so explain whether the programs below have benefitted you in coping with your cancer diagnosis and indicate the possible challenges you have faced.

<table>
<thead>
<tr>
<th>Programme</th>
<th>D (i) Tick (✓) if involved in the programme</th>
<th>D (ii) Indicate if the programme is beneficial or not</th>
<th>D (iii) Give reason(s) for your answer in D(ii)</th>
<th>D (iv) Suggest what can be done to improve the specific programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group psychotherapy</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(self-help projects/groups)</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spiritual support</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping skills</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Wang’ombe, 2016)