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The Relationship Among Career Thoughts, Optimism, and Spirituality in Women diagnosed with Breast Cancer

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The Relationship Among Career Thoughts, Optimism, and Spirituality in Women Diagnosed with Breast Cancer

by

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of the requirements for the degree of
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Dedication

"Trust in the Lord with all your heart, and lean not on your own understanding; In all your ways acknowledge Him, And He shall direct your paths" (Proverbs 3: 4-6). In my ultimate dedication, I dedicate this achievement back to my Lord and Saviour Jesus Christ. He has directed my path while the Holy Spirit was my comforter when my path appeared dim. Thank you Lord Jesus!

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Table of Contents

List of Tables v

List of Figures vi

Abstract vii

Chapter One: Introduction 1
- Definition of Breast Cancer and Stages 4
- Treatment for Breast Cancer 5
- History of Breast Cancer 6
- Breast Cancer Survival Rates 8
- Breast Cancer and Employment 9
  - Career Decision Making 11
- Cognitive Mediators 12
  - Optimism 12
  - Spirituality 15
- Statement of the Problem 18
- Significance of the Problem 19
- Purpose of the Study 20
- Conceptual Framework 21
  - Cognitive Information Processing (CIP) 22
  - Positive Psychology (PP) 22
  - Existential Therapy (ET) 23
- Research Questions 23
- Definition of Major Terms 24
- Scope and Delineation of Study 27
- Summary 28
- About the Author 29
- Overview of Dissertation Chapters 30

Chapter Two: Literature Review 32
- Breast Cancer in the Caribbean 32
- Impact of Breast Cancer 34
  - Individual Impact 34
    - Psychological 34
    - Physical 35
    - Financial 36
  - Societal Impact 37
    - Financial 37

Social....37
Breast Cancer and Employment....40
Dysfunctional Career Thoughts....40
Career Thoughts and Other Variables....44
Career and Medical/Psychiatric or Traumatic Disorders....45
Traumatic Disorders....46
Depression....46
Cognitive Mediating Variables....48
Early Breast Cancer Optimism Research....49
Current Breast Cancer Optimism Research....49
Optimism and Breast Cancer....50
Optimism and Career Decision Making....53
Spirituality....54
Spirituality and Career Decision Making....55
Spirituality and Other Chronic Diseases....57
Spirituality and Breast Cancer....59
Summary....60

Chapter Three: Methods....62
Research Questions and Hypotheses....62
Research Design....64
Sample....64
Instruments....71
Demographic information....72
Career Thought Inventory (CTI)....72
Life Orientation Test—Revised (LOT-R)....75
The Functional Assessment of Chronic Illness Therapy—
Spiritual Well-Being Scale (FACIT-Sp)....76
Procedures....76
Recruitment....76
Paper/Pencil....78
Online....81
Pilot Testing....82
Online....82
Paper/Pencil....83
Data Analysis Plan for Pilot Test....84
Results for Pilot Test....85
Constructive Feedback....88
Amendments....89
Data Analysis....90

Chapter Four: Results....96
Descriptive Statistics....96
Survey Questionnaire....98
The Functional Assessment of Chronic Illness Therapy (FACIT)....98

Life Orientation Test-Revised (LOT-R) 99
Career Thoughts Inventory (CTI) 101
Test of Hypotheses 102
Hypothesis 1 102
Age 102
Marital Status 103
Education 103
Ethnicity 104
Hypothesis 2 104
Pre-Diagnosis Variables 104
Post-Diagnosis Variables 105
Hypothesis 3 106
Stage of Breast Cancer 108
Hypothesis 4 108
Optimism 109
Spirituality 109
Optimism Mediation 110

Chapter Five: Discussion 111
Summary of Study 111
Findings Related to the Literature 114
Discussion 114
Hypothesis 1 115
Age 115
Age Dysfunctional Career and Intrusive Thoughts 117
Education 118
Marital Status 121
Ethnicity 122
Dysfunctional Career Thoughts 124
Hypothesis 2 125
Pre/Post Employment 125
Pre/Post Occupation 129
Pre/Post Salary 131
Hypothesis 3 135
Dysfunctional Career Thoughts Studies 135
Hypothesis 4 137
Optimism 137
Spirituality 138
Dysfunctional Career Thoughts 139
Optimism as a Mediating Variable 140
Conclusion, Limitations, and Implication for Future Research 142
Limitations 143
Implication for Future Research 145

References 147

Appendices 167
Appendix A: Demographic Information Survey 168
Appendix B: Life Orientation Test—Revised (LOT-R) 174
Appendix C: The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale (FACIT-Sp) 175
Appendix D: Recruitment Flyers 176
Appendix E: Online Introduction and Informed Consent 178
Appendix F: Feedback Questions for Pilot Testing 180
Appendix G: Paper/Pencil Introduction Script 181
Appendix H: Thank You 182
Appendix I: Incentive Slip 184
Appendix J: Approval Letters 185
Appendix K: Amendment Letter 190
Appendix L: Par License Agreement 193
Appendix M: Pilot Test Results 194

About the Author ..... End Page

List of Tables

Table 1 Stages of Breast Cancer 5

Table 2 Studies with Optimism and Different Outcomes 14

Table 3 Demographic of Participants 66

Table 4 Breast Cancer History of Participants 68

Table 5 Employment History of Participants.....70

Table 6 Level of Interpretation and Intervention Based on CTI Score 74

Table 7 Descriptive Statistics for Variables 97

Table 8 Reported Means and Standard Deviation of FACIT-Sp (spirituality) 98

Table 9 Reported Means and Standard Deviation of LOT-R (optimism) Questions 100

Table 10 Reported Highest and Lowest Means and Standard Deviation of CTI subscales (Career Thoughts) questions 101

Table 11 Question 1– One-Way ANOVA.....103

Table 12 Question 2 – T-test for Employment Pre Post Diagnosis.....105

Table 13 Question 2 – T-test for Employment Post Diagnosis.....106

Table 14 Question 4 – One Way ANOVA with stage.....107

Table 15 Question 5 – Mediating Factors (Optimism and Spirituality) 109

List of Figures

Figure 1.1: Percentages of different cancers and their 3, 5, and 10-yr survival rates.....9

Figure 1.2: Potential Cognitive Behavioral Theory Conceptualization.....22

Figure 2.1: Pyramid of Information Processing Domains in Career Decision Making: Counselor Version.....41

Figure 2.2: The Five Stages of the CASVE Cycle of Information Processing: Counselor Version.....42

Figure 3.1: Pilot Test: Path analysis showing how optimism can mediate the relationship between spirituality and career thoughts……..…….88

Figure 3.2: Potential Path Analysis Showing How Optimism Mediates the Relationship Between Spirituality and Career Thoughts 93

Figure 4.1: Path Analysis Showing How Optimism Mediates the Relationship between Spirituality and Career Thoughts 110

Figure 5.1: Ethnicity of Bahamian Women Diagnosed with Breast Cancer 123

Figure 5.2: Employment Pre/Post Diagnosis of Breast Cancer 126

Figure 5.3: Occupation Pre/Post Diagnosis of Breast Cancer 130

Figure 5.4: Salary Pre/Post Diagnosis of Breast Cancer 132

Abstract

This study investigated the relationship of dysfunctional career thoughts, optimism, and spirituality on Bahamian women (n=212) diagnosed with breast cancer. Also, it examined how optimism mediates the relationship between spirituality and dysfunctional career thoughts. The diagnosis of breast cancer impacts women physically, psychologically, socially, spiritually, financially, and in their career development. Career developmental plans and decisions are continuously being made. However, plans may become altered and decisions more difficult to make when a woman is diagnosed with breast cancer as she considers returning to work. The high survival rate of breast cancer patients indicates women may continue to work after their treatment. Limited information is known about possible changes in their dysfunctional career thoughts. This research investigated the degree to which optimism mediates the relationship between spirituality and dysfunctional career thoughts among a sample of Bahamian women diagnosed with breast cancer.

Negative thoughts formed in career content are called dysfunctional career thoughts (Lenz, Sampson, Peterson, & Reardon, 2012). Career thoughts are "…outcomes of one's thinking about assumptions, attitudes, behaviors, beliefs, feelings, plan and/or strategies related to career problem solving and decision making" (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996, p. 2). The dysfunctional thinking causes one to block

informing processing, reduces options, and distorts perception of options. The purpose of this study is to explore the relationship among career thoughts, optimism, and spirituality. The goal is to identify low or high dysfunctional career thoughts. In addition, studies suggest that being optimistic (Matthew & Cook, 2009) and spiritual (Hackney & Sanders, 2003) are two positive coping strategies for women diagnosed with breast cancer. This study seeks to explore these two potential mediating factors on dysfunctional career thoughts of women with this diagnosis.

This study is important because of the high incidence rate of breast cancer in the Bahamas. Bahamian women have the highest recorded percentage of the recorded BRCA1 gene (**BR**east **CA**ncer 1; a primary genetic marker for breast cancer) in the world (Donenberg et al., 2011). Breast cancer remains a public health issue that may affect the life and productivity of Bahamian women.

The relationship of dysfunctional career thoughts, optimism and spirituality of Bahamian women diagnosed with breast cancer was explored. Younger Bahamian women were noted to have experienced higher levels of dysfunctional career thoughts. While, marital status was statistically related with dysfunctional career thoughts, no pair wise differences were noted among the variables after a Tukey test. This means the level of dysfunctional career thoughts was not affected by women's marital status (married, not married, & divorced). Ethnicity and education did not play a role in their dysfunctional career thoughts but with employment pre-diagnosed of breast cancer. Results revealed women who were not employed pre diagnosis experienced higher dysfunctional career thoughts than women who were employed pre diagnosis. Other pre-diagnosis variables such as salary and occupation pre diagnosis show no statistically significant difference in

terms of dysfunctional career thoughts. These variables did not affect the Bahamian women's dysfunctional career thoughts. In addition to pre-diagnosis variables being examined in this study post diagnosis variables such as employment, occupation, and salary were also explored. Final analyses indicate post diagnosis employment, occupation, and salary show no statistically significant difference in terms of dysfunctional career thoughts. These post diagnosis variables did not affect the Bahamian women's dysfunctional career thoughts. Although, post diagnosis employment was not statistical significant to dysfunctional career thoughts, some significance was noted. Women diagnosed with breast cancer 2007 or earlier accounted for 58% of the participants in this present study. We need to highlight that there was an 11% decrease in post-diagnosis employment which was higher than the unemployment rate (7.9%) in the Bahamas at that time (Central Intelligence Agency, 2013). Therefore, this present study shows a significant effect rather than a statistical significant effect with Bahamian women's employment plans post diagnosis that indirectly affect their dysfunctional career thoughts.

The stages of breast cancer show no statistically significant difference in terms of the subscales of dysfunctional career thoughts such as Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC). This means the stages of breast cancer did not influence the different subscales of dysfunctional career thoughts. Spirituality had a positive moderate relationship with the level of optimism. As women's spirituality level increases their optimism level also increased. Although optimism did not show a statistical difference with dysfunctional career thoughts, spirituality demonstrated a negative weak relationship with dysfunctional career thoughts. This inverse relationship

indicates as their spirituality level decreases their dysfunctional career thoughts increases. Path analysis results explored the mediation among optimism, spirituality and dysfunctional career thoughts. Optimism was not noted to be a mediating variable that works together to positively affect spirituality and dysfunctional career thoughts. The impact of these results may be significant not only to the Bahamian population because of the first time study, but also in helping breast cancer survivors examine further career decisions even after being diagnosed with breast cancer.

Chapter One

Introduction

Life threatening chronic diseases like breast cancer can be viewed as disruptive life circumstances and can affect the general well-being of individuals (White & Macleod, 2002). General well-being in the areas of social, psychological, financial, spiritual as well as career may affect the lives of individuals diagnosed with a chronic illness. A chronic illness that has been a focus in the Bahamas and the world alike is the diagnosis of cancer and more specifically breast cancer (Donenberg et al., 2011). Shakin, Rowland, and Holland (1989) stated breast cancer is viewed as the most common and feared type of cancer among women today. This may be due in part to the maternal and sexual roles women play that alter their quality of life (Shakin et al., 1989).

In addition Li, Chung, and Chiu (2010) have found the diagnosis of cancer is a stressful and threatening experience. Therefore, the thought of being diagnosed with breast cancer may illuminate more negative thoughts that often may result in an adverse reaction. Information from Facts for life (2013) states, "learning you have metastatic breast cancer can be devastating" (n. p.). A Bahamian woman has agreed with this statement and has expressed that the diagnosis of breast cancer is considered a death sentence (Nassau Guardian, October 9, 2012). This thought process may be considered potent and can produce fears and concerns for women being diagnosed with this chronic illness. Bradley, Neumark, Luo, and Schenk (2007) also stated between breast cancer and

prostate cancer, the treatment of breast cancer is more aggressive with surgery, radiation, and chemotherapy. This potential avenue of aggressive treatment may also cause some dysfunctional thoughts of being diagnosed with breast cancer. This negative thought process may be seen in their academic, personal, social, and career development and more specifically can affect one's career thoughts.

Negative thoughts have been examined with the development of a Cognitive-Existential Group model for women in the primary stages of breast cancer (Kissane et al., 1997). Cognitive reframing in this model has been used to help women in a group setting deal with their negative thoughts. Negative thoughts formed in career content are called dysfunctional career thoughts (Lenz et al., 2012). Career thoughts are defined as the assumption plans, strategies, feelings, and behavior associated with career choice (Lenz, Sampson et al., 2012). The dysfunctional thinking causes one to block informing processing, reduces options, and distorts perception of options. Many studies have noted the effect of emotions and different behaviors associated with dysfunctional career thoughts (Bertoch, 2010; Chason, 2010; McLennan & Arthur, 1999; Reardon, Lenz, Sampson, & Peterson, 2011). Dysfunctional career thoughts and career thoughts will be used interchangeably in the present study. However, every Bahamian women diagnosed with breast cancer may experience some level of (low or high) dysfunctional career thoughts. Thus, the relationship with dysfunctional career thoughts, optimism and spirituality of women diagnosed with breast cancer in the Bahamas is explored.

The Commonwealth of the Bahamas is an archipelago of some 700 islands and 2,400 cays, stretching from 50 miles off the southeast coast of Florida, to 50 miles off the northwest coast of Cuba (Donenberg eta al., 2011). This chain of islands is located about

200 miles east of the Florida Keys and has a population of approximately 350,000 people of African descent (Donenberg et al., 2011). Although the Bahamas has flourished in its wealth due to tourism and banking industries over the years (Bahamas, 1998), the islands have also had public health concerns such as the high prevalence of breast cancer. The two reasons breast cancer has been considered a major public health issue are its high incidence per capita and the high rate of the **BR**east **CA**ncer 1, early onset gene (BRCA 1).

Malignant neoplasm of the female breast is the fourth leading cause of death in adults aged 24-44 years and the number one cause of death of all cancers in the Bahamas (Department of Statistics, Health Information and Research Unit, Ministry of Health, 2008). Breast cancer also accounts for the highest incident rate of all cancers in the Bahamas. Bahamian women with malignant neoplasm account for 55 per 100,000 in 1998 to 93 per 100,000 in 2011 per the total Bahamian population (Department of Statistics, Health Information and Research Unit, Ministry of Health, 2012). In addition, the onset of the diagnosis of breast cancer is at an age of 42 in the Bahamas compared to the United States of America which is at 62 years (Donenberg et al., 2011).

The second reason breast cancer is a public health issue is the high prevalence of the BRCA 1 gene observed in breast cancer survivors in the Bahamas. According to Donenberg et al. (2011), the BRCA is a mutation in one of two cancer susceptibility genes, BRCA1 and BRCA2. MedicineNet (2012) defines BRCA1 as "…a gene that normally acts to restrain the growth of cells in the breast but which, when mutated, predisposes to breast cancer. The gene's full name is breast cancer 1, early onset" (n.p.)

In the 1980s, Bahamian families traveled to the United States to receive diagnosis and treatment for this disorder (Braithwaite, 1984). Nowadays, the Bahamas is well-equipped to diagnose and treat families affected with cancer. In order to advance the research of breast cancer, studies were done with Bahamian women in Miami, Florida, and the Bahamas. Some of these studies involved a gene called BRCA 1. Donenberg et al. (2011) stated breast cancer has many gene mutations that contribute to the diagnosis of the disease. Two of these genes are BRCA1 and BRCA2, commonly seen in 3-5% of breast cancer cases in Canada and the United States. In the Bahamas, the BRCA 1 gene has been observed in approximately 23% of women diagnosed with breast cancer. This percentage of BRCA1 is one of the highest in any country studied to date (Donenberg et al., 2011).The high proportion of the BRCA 1 gene indicates that this is a public health issue for the Bahamas, impacting the well-being and the career development of women. In order to explore the relationship of career thoughts, optimism, and spirituality of women diagnosed with breast cancer, the definition and the stages of breast cancer is explained.

Definition and Stages of Breast Cancer

Breast cancer is defined as abnormal cell growth that multiplies and expands in the breast (American Cancer Society, 2012). These abnormal reproductions of cells are formed from damaged deoxyribonucleic acid (DNA) cells (American Cancer Society, 2012). Breast cancer is diagnosed by a combination of many techniques including physical examination, mammogram, bone scan, computed tomography scan, magnetic resonance imaging (MRI), ultrasound, and position emission tomography (PET) scan (American Cancer Society, 2012). These diagnostic techniques are also used to determine

the different stages of breast cancer as defined by the American Cancer Society. Table 1 displays the different stages according to the American Cancer Society (2012). As women are diagnosed and their cancer categorized in the various stages then the

Table 1

Stages of Breast Cancer

Stage	Description
Stage 0	Earliest form of breast cancer . . . cancer cells are still within a duct and have not invaded deeper into the surrounding fatty breast tissue.
Stage I	The tumor is 2cm and has not spread to lymph nodes.
Stage II	The tumor is 2cm and has spread to auxiliary or mammary lymph nodes.
Stage III	The tumor is not more than 5 cm across or larger than 5 cm across but does or does not grow into the chest wall. The cancer hasn't spread to distant sites.
Stage IV	The cancer can be any size and may or may not have spread to nearby lymph nodes. It has spread to distant organs or to lymph nodes far from the breast. Common sites spread are the bone, liver, brain, or lung.

Note: (American Cancer Society, 2012)

treatment to remove or reduce the size of the cancer are also planned (American Cancer Society, 2012).

The Treatment of Breast Cancer

Although the present research will examine women's dysfunctional career thought processes in survivors of breast cancer, the treatment of this chronic illness will be reviewed briefly. Treatment is a major factor affecting the quality of life of the woman. These treatments are categorized based on their type and the time they are

applied (American Cancer Society, 2012). The treatment for breast cancer is divided into two types: local versus systemic therapy (primary) and adjuvant and neoadjunvant therapy (secondary). Primary treatment is local treatment that involves removal of the tumors in the breast or its surrounding affected tissues. Surgery and radiation are examples of local treatments (American Cancer Society, 2012). Systemic treatment is another primary treatment that involves some localization treatment of the tumor but it helps prevent the cancer cells from transferring to other parts of the body. Systemic treatment entails taking drugs orally and intravenously such as chemotherapy, hormone, and targeted therapy (American Cancer Society, 2012).

The secondary type of treatment is adjuvant and neoadjunvant therapy. Adjuvant therapy consists of administering chemotherapy and or radiation after primary treatment such as mastectomy, lumpectomy or removal of lymph nodes. This treatment helps kill cancer cells that have broken off from the primary site. Neoadjuvant therapy also helps to destroy or shrink cancer cells prior to having one of the primary treatments such as mastectomy or lumpectomy. In some cases, neoadjuvant treatment helps shrink the tumor for easier removal (American Cancer Society, 2012). These treatments help improve medical conditions while, at the same time, improving quality of life. As quality of life improves, career thoughts may improve. If the Bahamas is to make a difference in the treatment and intervention of breast cancer, it will be helpful to review the past of breast cancer in the Bahamas.

History of Breast Cancer in the Bahamas

The records of the prevalence of cancer in the Bahamas can be researched as far back as the early 1960s. Braithwaite (1984) examined the diagnostics and autopsy

records of Bahamians at the Princess Margaret Hospital, the main hospital in the Bahamas. All the records studied revealed 390 (117 males & 219 females) cases of cancer diagnosed in the years 1968, 1973, and 1978. Braithwaite (1984) noted 63 (16.2 %) of the females were diagnosed with breast cancer, the leading cause of cancer death in the years mentioned above. This research indicates breast cancer in the Bahamas was a significant cause of death between the years 1968 and 1978. Most notable was the average age of death from breast cancer (54 years) with only one female dying of breast cancer under the age of 30 years.

The prevalence of cancer has changed significantly in the Bahamas. On January 19, 2009, The Nassau Guardian, the local Bahamian newspaper, printed the World Health Organization (WHO) report indicating that "Cancer may become the leading killer by 2010." On October 5, 2009, they reported that 46% of those Bahamian women diagnosed had late stage breast cancer compared to 12 percent of American women. The average age of women with breast cancer in the Bahamas is 42 while the average age in the United States is 62 (The Nassau Guardian, 2009, p. 12).

The increase of breast cancer in the Bahamas has been on the rise for many years. As reported in The Nassau Guardian (2009), Dr. Steven Narod, a professor of genetic and cancer research at Toronto University, found that the women in the Bahamas with this BRCA1 gene had the highest rate he has ever seen in his 22 years in research in the world. Since 1992, breast cancer was the number one cancer in Bahamian females (The Nassau Guardian, 1992). In 2004, carcinoma in situ was among the five leading causes of inpatient morbidity among 25-44 year olds at the Princess Margaret Hospital (Health Information and Research Unit, 2009). From 1990 – 2006, malignant neoplasm rose from

1990 (25.9%), 2001 (27.9%), 2002 (32.6%), and 2006 (29%) per 100,000 females ages 15-44 years. In 2006, malignant neoplasm of female breast was ranked the number four cause of death of adults in the Bahamas. Then in 2008, the leading cancer deaths among females by site (breast) were 44 (28.2 %) and second among both sexes as the leading cancer death with 44 deaths (14.6 %; Health Information and Research Unit, Ministry of Health, 2010). These statistics show that breast cancer is a continuous health concern in the Bahamian society. The improvement in diagnosis and treatment is also increasing the number of women survivors of breast cancer and their life expectancy; therefore, there is a need for continued studies for this group of people in the area of career decisions and development. This has been evident in a study done by Fantoni et al. (2010) who noted although younger women have greater prognosis, the life experiences in the working world may still pose challenges. This research revealed about 85% of the 379 French women diagnosed with breast cancer returned to work in their previous positions. This career decision may have required some thought process, improvement in one's health and well-being and thus improvement in survival years.

Breast Cancer Survival Rates

Breast cancer is considered the second highest cancer rate following cervical cancer in Grand Bahama (second capital of the Bahamas; Braithwaite, Braithwaite, & del Diego, 2005). Overall Bahamian breast cancer survival statistics are not provided based on the 3-year, 5-year or 10-year period. However, the amount of deaths by breast cancer per 100,000 indicates 55 in 2006, 44 in 2007, 44 in 2008, and 40 in 2009. In addition, Figure 1.1 displays the survival rates of 3-year, 5-year and 10-year survival rates of all cancers, prostate, breast, cervix uteri, and colo-rectal cancers of Grand Bahamian from

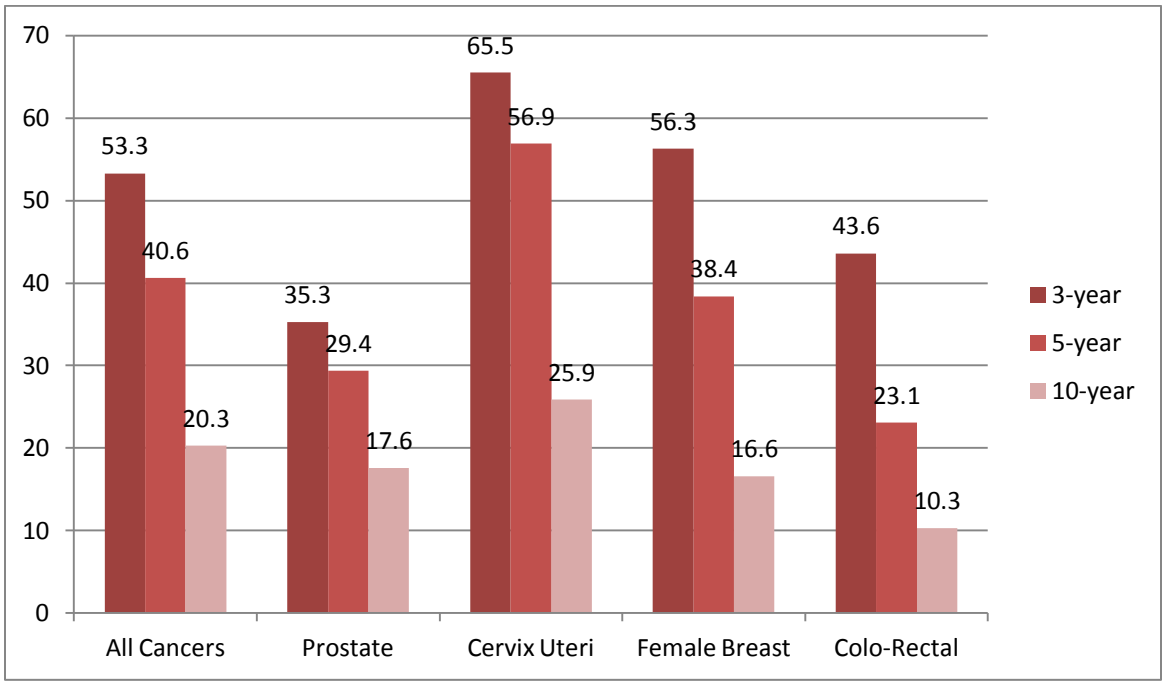

*Figure 1.1.*Percentages of different cancers and their 3-year, 5-year, and 10-year survival rates in Gran Bahama (Braitwaite, A., Braitwaite, N., & del Diego, A., 2005)

1988-2002. Although the percentage of Bahamian breast cancer survival rate is not as high as American women (5-year = 89%; 10-year = 82%; 15-year =77%; Cancer Facts & Figures, 2011-2012) perhaps maybe due to different socioeconomic, cultural or medical reasons, breast cancer is still the second highest cancer survival rate in Grand Bahama, Bahamas (Braithwaite, Braithwaite, & del Diego, 2005). This percentage is only noted for the second city and one of the thirty-four inhabited islands in the Bahamas. As breast cancer survival rates improve so may improvement be noted in employment.

Breast Cancer and Employment

The most recent data on women diagnosed with breast cancer in the U.S. demonstrate an increase in both the number of cases (202,964) and the number of

survivors (162, 366; CDC, 2012). In spite of common perceptions of breast cancer as a life threatening disease, there is an increasing and considerable number of women that survive this disease due to early detection, new treatments, and better management of treatment side effects (Main, Nowels, Cavender, Etschmaier, & Steiner, 2005). Research indicates, however, while some women return to work and function at the same level as before, others do not (Fantoni et al., 2010).

Positive and negative outcomes have been noted with breast cancer survivors who have returned to work. A study done by Fantoni et al. (2010) in France indicated that there was a strong desire among women (379) with breast cancer to return to work. According to Fantoni et al. (2010) this positive desire is possible because of early detection, diagnosis, and better management of side effects. Their results revealed that 85% of women diagnosed with breast cancer returned to work, while 4% changed jobs within the firm (Fantoni et al., 2010). Women who returned to work over the age of 55 had the lowest percentage (69.1%) whereas women less than 40 years yielded the highest percentage (88.9%) and was also statistically significant ($p<0.05$). On the other hand, although lower level of education was statistically significant ($p<0.01$) they had a lower rate (71.6%) of return to work than women with higher level of education (95%). As stated earlier in the chapter some form of treatment of breast cancer may affect their return to normal functioning. Fantoni et al. (2010) also found chemotherapy and radiation also affected their return to work. Chemotherapy, also statistically significant ($p<0.01$), yielded a 73.5% return to work whereas radiation yielded 76.7% with significance of $p<0.05$. According to Fantoni et al. (2010) despite the different challenges women diagnosed with breast cancer face, some still return to work.

Bradley, Neumark, Luo, and Schenk (2007) studied patients diagnosed with cancer and other chronic illnesses, include 496 breast cancer survivors and 294 men with prostate cancer in the metropolitan Detroit area. A control group of non-cancer individuals was used in this longitudinal study at 3 month before diagnosis, and 6, 12, and 18 months post diagnosis. Breast cancer survivors at 6 months as opposed to non-cancer were less likely to be employed (17 %; $p<0.05$). In addition to this, "…approximately 12 percent of the women with breast cancer reported being disabled or too sick to work at 6 months following diagnosis" (Bradley, Neumark, Luo, & Schenk, 2007, p. 49). At the 12 and 18 month juncture, women diagnosed with breast cancer demonstrated the probability of employment was not statistically significant ($p>0.05$). On the other hand, when distant stage disease was introduced into the analysis, the probability of breast cancer survivors versus non-cancer were less likely to be employed ($p<0.05$; Bradley, Neumark, Luo, & Schenk, 2007). These positive (Fantoni et al., 2010) and negative (Bradley, Neumark, Luo, & Schenk, 2007) outcomes can help women diagnosed with breast cancer make positive career decisions.

Career Decision-Making. A career is more than a person's employment or job, it includes a combination of other factors mentioned in the definition. Career developmental plans and decisions may continuously be changed by individuals. These plans may become interrupted or halted when diagnosed with breast cancer. However, given the better survival rates of women in recent years, it appears their plans may be changed or repositioned. There are many studies that focused on breast cancer and employment (Bradley et al., 2007; Fantoni et al., 2009; Hassett, O'Malley, & Keating, 2009), but none focused on career decisions and dysfunctional career thought processes

post diagnosis. The low level of dysfunctional career thoughts after diagnosis of breast cancer may advance to higher levels of dysfunctional thoughts, but many cognitive mediators such as being optimistic and spiritual may help change those higher dysfunctional career thoughts to lower ones. This effect is not exclusive of Bahamian women diagnosed with breast cancer.

Cognitive Mediators

Although optimism and spirituality variables have been studied separately with breast cancer, these studies have revealed that these variables are positive coping strategies for women diagnosed with breast cancer (Carver et al., 2005; Carver, Lechman, & Antoni, 2003; Carver, Scheier, & Segerstorm, 2010;Matthew & Cook, 2009;Nelson, Rosenfeld, Breitbart, & Galietta, 2002; Peterson, Fitchett, Brady, Hernandez, & Cella, 2002;Thune´-Boyle, Stygall, Keshtgar, Davidson, & Newman, 2011). The reason for using optimism and spirituality variables in this present study will be closely examined in the following section.

Optimism. Mosby's Dictionary of Complementary and Alternative Medicine (2005) defines optimism as the **"**attitude cultivated by an individual in which he or she believes in the positive resolution of a stressful event" (n. p.). Another term normally used for optimism is "dispositional optimism which **". . .** is assumed to react to a willingness to persist when confronted with adversity" (Ridder, Schreurs, & Bensing, 2005, p. 142). Ridder, Schreurs, and Bensing (2005) stated individuals who possessed a dispositional optimism on health obtain more aspirating goals than others without that positive disposition. Many studies (Buxton, 2011; Rassmussen, Scheier, & Greenhouse,

2009) indicate the importance of being optimistic while diagnosed with an illness, and more specifically breast cancer.

A meta-analysis by Rassmussen, Scheier, and Greenhouse (2009) reviewed eighty-five studies on optimism and physical health of individuals. There were approximately 16,084 individuals with such conditions such as cardiovascular disease, comprised immune function, chronic pain, pregnancy outcome, and survival outcomes, 2,858 with cancer disorder, and 778 with breast cancer diagnosis. The purpose of the research was to determine the strength of optimism as the predictor to physical health. The literature review used MedLINE and PsychINFO to retrieve the articles. According to the results for cancer related diseases done cross sectional and longitudinal, the effect size was 0.27. The results revealed a small to moderate effect of optimism on persons diagnosed with cancer. One of the articles that studied optimism and physical symptoms revealed a moderate effect size of (0.48). Rassmussen, Scheier, and Greenhouse (2009) concluded being optimistic had a strong positive relationship with physical health, and more specifically breast cancer.

Optimism has also being seen as a positive predictor in a mixed method research done with breast cancer survivors. In dissertation research, Buxton (2011) examined posttraumatic growth in five different factors: personal factors, new possibilities, relating to others, appreciation of life, and spiritual change. Buxton (2011) recruited women diagnosed with breast cancer using recruitment flyers posted on a breast cancer website, and potential participants were directed to take a survey. Two-hundred and seventy-seven women between the ages of 21 – 85 participated in this study. Results revealed women diagnosed with breast cancer were “more optimistic and are more likely to experience

posttraumatic growth" (Buxton, 2011, p. 63), and being optimistic also assisted in "a way of managing the emotional impact of the cancer diagnosis" (p. 73). Therefore, the women diagnosed with breast cancer are seen to be optimistic regarding the occurrence of posttraumatic growth. Other studies (Table 2) have shown that optimism is a positive coping strategy, concept, or personal resource used with women diagnosed with breast cancer.

Table 2

Studies with Optimism and Different Outcomes of Women Diagnosed with Breast Cancer

Study	Outcome
Helgeson, Snyder & Seltman (2004)	Being optimistic improved women with four year post treatment of breast cancer mental and physical state
David, Montgomery, & Bovbjerg (2006)	Women who were scheduled for breast cancer surgery experienced higher optimism levels with lesser distress levels
Carver, Smith, Petronis, & Antoni (2006)	Breast cancer survivors that were 5 – 13 year post breast surgery showed dispositional optimism and experienced longer quality of life
Wimberly, Carver, & Antoni (2008)	"…presented two models: those higher on optimism perceived more social support and scored higher on psychosexual well-being; and those higher on optimism experienced less distress and scored higher on psychosexual well-being" (p. 26)

Buxton (2011) sums up how important optimism is to women diagnosed with breast cancer in the following manner: "…since those who are more optimistic tend to better adjust to deal with adversity, optimism has become a prominent concept in

research with breast cancer survivors" (p.24). Although Buxton (2011) states optimism has become one of the variables used constantly in breast cancer studies, spirituality is also another variable that has been used in many studies with chronic diseases such as breast cancer (Bredle, Salsman, Debb, Arnold & Cella, 2011; Hackney & Glenn, 2003; Rowe, & Allen, 2004; Peterman at al., 2011; Szaflarski et al., 2006).

Spirituality. For the purpose of this present study, spirituality and religion are used interchangeably. Spirituality is considered the drawing out of one's spirit (Cashwell, 2007) whereas religion is the organized form where persons can express their spirituality (Young, Wiggins-frame, & Cashwell, 2007). Close examination of the definition and the reason for using spirituality are presented. Spirituality in the present study is defined in terms of three components: (1) meaning, purpose, and fulfillment to life, suffering, and death; (2) will to live: and (3) person's belief and faith in a higher being (Renetzky, 1979). About 84% of Americans consider spirituality in the society as the most important or fairly important factor in their lives (Gallup, 2007). The Gallup (2007) poll indicates that 60% of Americans believe spirituality is the answer to all of their problems. In addition, Fitchett and Canada (2010) stated the two main reasons spirituality is important to individuals: (1) helps one stay healthy; and (2) it is a major resource that helps one cope with illness or other stressful events.

Emerging studies involving spirituality and health relationships are on the rise (Fitchett & Canada, 2010). Stefanek, McDondald, and Hess (2005) stated there has been a 600% increase in publications on spirituality and health. The overview spirituality and health is seen in a religion handbook by Koenig, McCullough, and Larson (2001). In addition, studies revealed that spirituality is a positive resource for individuals diagnosed

with cancer (Fehring, Miller, & Shaw, 1997; Jenkins & Pargament, 1995; Kaczorowski, 1989; Maugans & Wadland, 1991; Musick, Koenig, Larson, & Matthew, 1998; Spika, Ladd, & David, 1993; Thune´-Boyle, Stygall, Keshtgar, Davidson, & Newman, 2011). Jenkins and Pargament (1995) demonstrated that spirituality is very important to cancer patients because of anxiety about the future and death. Spika, Ladd, and David (1993) stated religious and spiritual activities such as praying and meeting with their father or pastor is significant in coping with cancer. A survey conducted by Maugans and Wadland (1991) also indicated about 55% of the individuals diagnosed with cancer believe spirituality is an important part of their lives. Thune´-Boyle, Stygall, Keshtgar, Davidson, and Newman (2011) have found that individuals diagnosed with breast cancer show a high significance in the belief of God and increased spiritual practice. Nelson, Rosenfeld, Breitbart, and Galietta (2002) found as the spiritual level improved in cancer patients and AIDS/HIV patients, depressive symptoms decreased. In addition, higher levels of social, family, and psychosocial adjustment were seen in individuals with a higher level of spiritual belief (Fernsier, Klemm, & Miller, 1999; Musick, Koenig, Larson, & Matthew, 1998). Therefore, a relationship between spirituality and health, and more specifically cancer, has been demonstrated in the literature to be a positive factor among individuals diagnosed with this disease. More studies showing positive spiritual strategies will be explored in Chapter 2.

According to another study done in the Caribbean, Mohammed (2011) interviewed eight women diagnosed with breast cancer in Trinidad and Tobago. These eight women were interviewed using the narrative approach embedded from a feminist perspective. The purpose was to determine the return to work experiences of breast

cancer survivors. Mohammed (2011) demonstrated the overall themes from the women were "…finding out about the diagnosis, coping and social support, work adjustments while on treatment, attitude towards work after diagnosis, cancer impact on self-image, and lessons learnt from the diagnosis of breast cancer" (p. 91). This thesis research noted the main coping strategies were being spiritual and also praying. Seven out of eight of the women suggested their spirituality helped with their problems or potential concerns with the diagnosis. In addition, although there were few participants in the study, Mohammed (2011) indicated, "that their spirituality gave them hope and the strength to manage their surgeries, the complications of the treatment, and in their search for meaning" (p. 130).

In addition to the spirituality related studies done in the United States, Canada, and Trinidad and Tobago, a pilot study was done by Dames (2011) in Grand Bahama, the second largest city of the Bahamas. This research was presented at a Florida Career Development Association Conference in Gainesville, Florida in February 2012. This pilot study was qualitative in nature and eight women diagnosed with breast cancer were interviewed. The purpose of this study was to determine the relationship among career decisions, coping strategies, and culture with Bahamian women diagnosed with breast cancer. All of the women noted the main perceived coping strategy was relying on their spirituality convictions to help in coping with the diagnosis. One of the Bahamian women noted, "I really relied on God: He was all I had. I made my children and my family prays for me". Another woman stated, "I just kept praying praying, praying and told God to make sure I remember that He is the one with the last word". Studies in United States and the Bahamas suggest that spirituality helps to improve one's well-being after being

diagnosed with chronic diseases such as breast cancer. This finding will be explored in more detail in Chapter 2.

Statement of the Problem

This breast cancer survival rate is the second highest survival rate following cervical cancer among all of the cancers in Grand Bahama (second capital of the Bahamas; Braithwaite, Braithwaite, & del Diego, 2005). Studies demonstrate that an increasing number of women diagnosed with breast cancer have returned to work or continue their career post diagnosis of breast cancer (Main et al., 2005;Maunsell et al., 2004; Mohammad, 2011). This continuation is due in part to early detection, proper management of side effects, and effective treatment (Main et al., 2005). Many studies were conducted on women returning to work and continuing their career development (Boer et al., 2008; Main et al., 2005) but no known research has been conducted to examine the career thought processes of women diagnosed with breast cancer in the Bahamas. There is no known research that directly measures the impact of breast cancer on women's career thoughts. Women with breast cancer continuation may have a delay in their work development, and work adjustment from a career thought perspective.

In addition, there are very few cross-cultural studies done relative to optimism, spirituality, and career thoughts. Many medical studies have been done in the Bahamas (Braithwaite, 1984; Dean, 1985; Mackey, 2001) but limited psychosocial and no career studies have been done with a Bahamian group diagnosed with breast cancer. Also, numerous studies have been done separately with the potential mediators optimism (Gustavsson-Lilius, Julkunen, Keskivaara, Lipsanen & Hietanen, 2012) and spirituality (Hirsbrunner, Loeffler, & Rompf, 2012; Rodriguez, 2011) in the United States, but

limited studies have been done in the Bahamas with breast cancer survivors employing these potential mediators together. No known research emerged examining how optimism mediates the relationship of spirituality and career thoughts of women diagnosed with breast cancer in the Bahamas and the United States.

Significance of the Study

This study is significant because career counselors can help women improve their career thought processes and development based on the results found. For example, if women score high on dysfunctional career thoughts the application of the cognitive information processing (CIP) theory can be used to assist women in reframing positive career thoughts while at the same time improving career decisions, decreasing commitment anxiety, and improving external conflict.

Second this study is significant because career interventions can be embedded in the existing medical and nursing models for the women who have survived breast cancer. Third, if the mediating factor (optimism) positively influences a woman's career thoughts, Seligman (2009) states individuals can change their pessimistic thoughts to optimistic thoughts through a theory called Learned Optimism. Fourth, if the mediating factor of spirituality or religiousness positively influences their career thoughts, a model such as the Holistic Flow Model of Spiritual Wellness (Purdy & Dupey, 2005) can be incorporated as a spiritual intervention for women with breast cancer. Finally, career counselors can use these results to incorporate in their model or practice for women diagnosed with breast cancer. The present study is significant because career counselors, medical, and nursing staff can assist women diagnosed with breast cancer to improve career aspirations.

Purpose of the Study

The purpose of this study is to (1) investigate correlations between demographic characteristics and dysfunctional career thoughts; (2) investigate correlation between demographic characteristics and breast cancer variables pre-and post-diagnosis. Pre-diagnosis is defined as any factors, attributes, activities or aspects before someone has been diagnosed and post-diagnosis is defined as any factors, attributes, activities or aspects after someone has been diagnosed; (3) investigate to what extent does the stages of breast cancer diagnosis participants occupy influence their career thoughts as measured by the Career Thoughts Inventory (Decision Making Confusion [DMC], Commitment Anxiety [CA], External Conflict [EC]); (4) investigate any correlation between optimism, spirituality, and career thoughts; and (5) investigate how optimism mediates the relationship between spirituality and dysfunctional career thoughts. The overall goal of this study is to explore the level of dysfunctional career thoughts to help improve their overall career decisions and development.

The purpose of this study is to discover the relationship among career thoughts, optimism, and spirituality of Bahamian women diagnosed with breast cancer. The hope is to identify low or high dysfunctional career thoughts. As these thoughts are identified women with lower dysfunctional career thoughts will be helped by maintaining the positive thoughts, whereas women with higher dysfunctional career thoughts will be assisted by decreasing them. This will be done through continued assessment, evaluations, and research with these different breast cancer affiliations by the principal investigator. In addition, the purpose is to identify if these women display optimistic personal resources while at the same time displaying spirituality. The information gain

will be used so career counselors, nurses, doctors, and other health care workers who work closely with breast cancer survivors can help women make positive career decisions after the diagnosis.

Conceptual Framework

The conceptual framework of this study is driven by the notion that the mediation of optimism with spirituality will have an impact on dysfunctional career thoughts (total career thoughts) variables such as Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) of women diagnosed with breast cancer. Although this conceptualization is driven by two mediating factors (optimism and spirituality) other factors can be used. Figure 1.2 illustrates the cognitive behavioral theory (Dobson, 2009) conceptualization which notes the diagnosis of the breast cancer

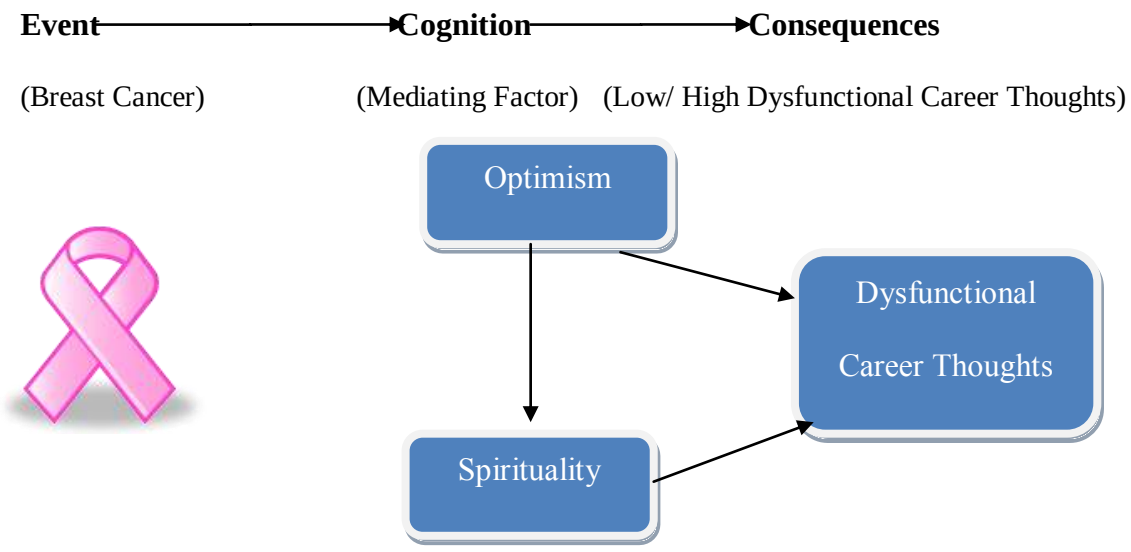

Figure 1.2.Potential cognitive behavioral theory conceptualization that shows the event (diagnosis of breast cancer), cognition (potential mediating factors) and the consequences (dysfunctional career thoughts).

as the event, cognition as the potential mediating factors (optimism and spirituality), and the consequences (low or high dysfunctional career thoughts). The dysfunctional career thoughts may be at a low or high level.

Cognitive information processing (CIP). Cognitive information processing (CIP) theory as it relates to career development encompasses two basic concerns: (1) solving career problems; and (2) making career decisions (Sampson, Reardon, Peterson & Lenz, 2004). The intervention of the CIP approach can assist with improving problem solving and decision making processes of women diagnosed with breast cancer while improving career thoughts. Reardon, Lenz, Sampson, and Peterson's (2009) two assumptions relevant to the present study conceptualization states, "Career choices are based on how we think and feel" and ". . .career development continues as a part of our lifelong learning and growth" (p.10). If dysfunctional career thoughts occur in women diagnosed with breast cancer, CIP can assist with altering this process. As stated by Sampson, Peterson, Lenz, Reardon, and Saunders (1994) "established therapeutic procedures and written exercises…especially in relation to anxiety and depression which are common affective components of acute or chronic career indecision" (p.4).

Positive Psychology. The positive psychology (PP) movement was created to introduce the focus of strength and virtue rather than illness and weakness for therapy (Seligman, 2002). Martin E. Seligman, a past president of American Psychological Association (APA), coined the term positive psychology. He has noted over the years that psychologists and counselors have focused more on "the dark side" of therapy and negated the "light at the end of the tunnel," thus the creation of PP. The three concepts Seligman (2002) included in this theory are positive emotions, strength and virtue, and

the mansions of life. One focus for this dissertation will be optimism, which is a future positive emotion that may help women with breast cancer improve their career thoughts while making career decisions during and after the diagnosis of breast cancer.

Existential therapy. Existential therapy (ET) will help to inform the conceptual framework of this research by examining the association between spirituality/religion, and women diagnosed with breast cancer. Two ultimate concern lens used by ET are meaning in life and freedom of choice. The meaning and purpose of life are defined as follows: ". . . a search for meaning implies a search for coherence and purpose refers to intention, aim, and function" (Yalom, 1980, p. 423). Yalom (1980) pondered on a question, "What is the meaning of life" or "What is the meaning of *my* life?" The two types of meaning are cosmic and terrestrial meaning. Frankl (1988) used two similar connotations for cosmic and terrestrial meaning. They are universal and individual meanings. Cosmic (universal) meaning involves believing in a divine or superior being with a magical or spiritual order. Terrestrial (individual) meaning is of secular order where individuals have a personal meaning and goals in life with or without a cosmic meaning. This study will explore both meanings related to women diagnosed with breast cancer related to their career thoughts. This meaning would examine how their spirituality mediates their career thoughts to improve their quality of life.

Research Questions

The research questions that are addressed in this study are the following:

RQ1: How are demographic characteristics (e.g., age, education, marital status, and ethnicity) related to career thoughts of women diagnosed with breast cancer?

RQ2: How are the pre and post diagnosis breast cancer variables (e.g., occupation diagnosis, employment status diagnosis, and salary diagnosis) related to career thoughts?

RQ3: To what extent does the stages of breast cancer diagnosis participants occupy influence their career thoughts as measured by the Career Thoughts Inventory?

RQ4: What is the direction and strength of the relationship between the potential mediating factors (optimism and spirituality) and career thoughts of women with breast cancer?

Definition of Major Terms

The following terms are used throughout this study. The terms originate from a variety of theories and concepts, which are discussed in detail in Chapter 2.

BRCA (BReast **Ca**ncer) **1 Gene** - "a tumor suppressor gene known to be implicated in the development of a subset of breast and ovarian cancers" (Stefansson & Esteller, 2012, p. 304).

Career - "time extended working out of a purposeful life pattern through work undertaken by a person" (Reardon, Lenz, Sampson, & Peterson, 2009, p. 6).

Career development - "the total constellation of economic, sociological, psychological, educational, physical, and chance factors that combine to shape one's career" (Reardon et al., 2009, p. 6).

Career problem - "a gap between an existing state of career indecision and a more desired state of decidedness; may be multifaceted in nature involving feelings, beliefs, behavior, family, community, leisure, and spiritual dimensions" (Reardon et al., 2009, p. 269).

Career thoughts - "outcomes of one's mental activity (thinking) about behaviors, beliefs, feelings, plans, and/or strategies related to career problem solving and decision making" (Reardon et al., 2009, p. 269).

Chronic Illness - "any disorder that persists over a long period and affects physical, emotional, intellectual, vocational, social, or spiritual functioning" (Mosby's Medical Dictionary, 8th edition, 2009, Elsevier)

Decision making - "incorporates the components of problem-solving, plus "the development of a plan or strategy for implementing the chosen solution and the adoption of a risk-taking attitude and commitment to carry the plan to completion" (Reardon et al., 2009, p. 58).

Employment – "the work in which one is engaged; occupation" (The Free Dictionary, 2013, n.p.).

Job -"a paid position held by a person requiring some similar traits or attributes" (Reardon et al., 2009, p. 8).

Job Satisfaction - ". . . a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1304).

Occupation -"a group of similar positions found in different industries or organizations" (Reardon et al., 2009, p. 7).

Optimism - "attitude cultivated by an individual in which he or she believes in the positive resolution of a stressful event. In particular, persons with this mindset will use focused, externalized, and non-persisting terms to describe his or her specific situation. Studies have shown that patients who are diagnosed with a chronic disease and adopt an

optimistic attitude have improved health status" (Mosby's Dictionary of Complementary and Alternative Medicine, 2005, n. p.).

Pessimism -"a tendency to stress the negative or unfavorable or to take the gloomiest possible view" (The Free Dictionary, 2012, n. p.)

Position - "a group of tasks performed by one person in an organization; a unit of work with a recurring or continuous set of tasks" (Reardon et al., 2009, p. 7).

Post – "after; later" (The Free Dictionary, 2013, n.p).

Pre – "earlier; before; prior to" (The Free Dictionary, 2013, n.p.).

Problem solving - "involves thinking or processing information that will lead to a course of action to remove the gap" (Reardon et al., 2009, p. 58).

Religion-"an integrated system of belief, lifestyle, ritual activities, and institution by which individuals give meaning to (or find meaning in) their lives by orientating them to what is taken to be sacred, holy, or the highest value" (Corbett, 1990, p. 2).

Salary – "fixed compensation for services, paid to a person on a regular basis" (The Free Dictionary, 2013, n.p.).

Spirituality - Spirituality in the present study is defined in terms of three components: (1) meaning, purpose, and fulfillment to life suffering and death; (2) will to live: and (3) person's belief and faith in God (Renetzky, 1979).

Work - "an activity that produces something of value for oneself or others" (Reardon et al., 2009, p. 6).

The definitions of terms presented assist in the understanding of the literature and the present study. Next, the scope and delimitation of the study will be discussed.

Scope and Delimitation of Study

The present research did not attempt to explore all the potential correlates and predictors of optimism, spirituality, and dysfunctional career thoughts. The main focus is the relationship of these variables. Spirituality/religion is one of the main variables measured in this study; however, a theological research was not examined as the purpose of the present study was to examine spirituality/religion in cancer groups, a hospital, and an oncology unit with women diagnosed with breast cancer. Although, this present study is not examining a theological perspective, the influence of spirituality/religion in the lives of the women diagnosed with breast cancer should not be overlooked. The optimism variable has been chosen as one of the main concept because it helps better deal with challenges such as being diagnosed with breast cancer (Buxton, 2011). The Life Orientation Test-Revised has been selected because it has been used consistently with many studies that involve breast cancer survivors (Carver et al., 1993, 1994, 2005; Carver, Scheier, & Segerstrom, 2010). Many other career decision theories could have been used for this present study, however, career thoughts were used from the theory of Cognitive Information Processing (CIP) because it focused on low or high dysfunctional career thoughts.

Some inclusion and exclusion criteria have been examined for the present study. Inclusion criteria consist of: (1) career age 18-65 years (Berla, Andrews & Berlam 1999), (2) Bahamian resident, (3) diagnosed with breast cancer for more than one year, and (4) any stage of breast cancer. The Bahamas was chosen as noted because breast cancer is the most prevalent of all type of cancers. In addition, Donenberg et al. (2011) stated the percentage of the BRCA1 gene is one of the highest recorded in any country studied to

date. Two specific exclusion criterions were men diagnosed with breast cancer and people from other Caribbean countries. Although, appropriately 12 cases of male breast cancer were found between the years 1998-2011 (Department of Statistics, Health Information and Research Unit, Ministry of Health, 2012) the present study did not focus on male volunteers diagnosed with breast cancer. Men were not the focus of this present study because of its small amount of prevalent rate. In addition, in 2009 two males died due to their breast cancer diagnosis (Department of Statistics, Health Information and Research Unit, Ministry of Health, 2012).

Summary

The breast cancer diagnosis in the Bahamas has risen over the years (Donenberg et al., 2011). Breast cancer incidence in the Bahamas is considered a public health issue. The Ministry of Health interventions is committed to help women diagnosed with breast cancer through early detection, management of treatment, and effective management of side effects. In addition, education for partners and loved ones and management of career thoughts and career development are significant as well. Research has demonstrated that women do return to work (Maunsell et al., 2004; Mohammad, 2011) and sometimes do not leave their careers after being diagnosed with breast cancer, but no known research has examined the dysfunctional career thoughts processes which include decision making confusion, commitment anxiety, and external conflicts of these women. Being optimistic and being spiritual have been shown to be positive coping strategies for women diagnosed with other cancers. These potential mediators have been researched with breast cancer groups, but no known research exists on how optimism mediates the relationship between spirituality and career thoughts of women with breast cancer.

Many organizations such as American Cancer Society, Cancer Hospitals, and Susan G. Komen have invested millions of dollars on the research of breast cancer for a cure and improved quality of life for individuals with this disease (Jemal, 2008). Counseling and medical professionals encounter more and more women who have survived breast cancer and need to provide more interventions to assist with career thought processes relationed to their career development. Research demonstrates work and career-related activities are considered the number one activity performed by Americans today (Bureau of Labor Statistics, 2011). Department of Statistics (2012) has stated women account for 94,865 out of 190,075 total of the labor force in the Bahamas in 2011 which amounts to 49.9% labor force participation rate. In addition, 40% of households are headed by women who may financially support their family and thus need help with improving career thought processes after being diagnosed with breast cancer (Bureau of Labor Statistics, 2011). Therefore, professionals who come into contact with women with breast cancer should provide more interventions directly relate to career thoughts, and more specifically, incorporate optimistic and spiritual aspects. However, no known research has been done to help comprehend the impact of career thoughts with potential mediating factors with women diagnosed with breast cancer.

About the Author

Personal information about the principal investigator such as interest, previous career roles, and experiences with cancer patients may introduce some bias into the results and outcome of this research. I have been a registered nurse for the past twenty years and, therefore, I would like to combine my first love which is nursing to my new found love in counseling, and more specifically career counseling. During the years I

worked as a medical registered nurse, I have nursed women diagnosed with breast cancer and found this diagnosis interesting. This interest was so profound because at the time in the Bahamas not only older women were being diagnosed but also younger women at such a high incident rate per capita (Donenberg et al., 2011). Also, Dames (2011) found women with positive outlook and spiritual support have improved quality of life despite the diagnosis of breast cancer. Although, I have not had a family member diagnosed with breast cancer, I heard about similar experiences my patients and their families endured during their diagnosis. I would like to help women improve their career thoughts from the results of this research by being a "bobbing light" for breast cancer survivors. Yalom (1980) stated, "I know we are each ships passing in the dark and each of us is a lonely ship, but still it is mighty comforting to see the bobbing lights of the nearby boats" (p. 40); I would like to be one of these bobbing lights for these women. This will be done by studying for the first time the relationship of career thoughts, optimism, and spirituality of women diagnosed with breast cancer in the Bahamas.

Overview of Dissertation Chapters

This dissertation is presented in five chapters. Chapter 1 includes an introduction to the study, a review of the problem, significance of the study, the conceptual framework of the study, and a brief preview of the research questions guiding the inquiry. Chapter 2 includes literature review information about cancer, breast cancer, return to work, the impact of breast cancer, and the primary theory driving this inquiry. Optimism and spirituality variables are discussed in this chapter. Chapter 3 includes the methodology of the study, study design, and instruments to be utilized with a summary of their psychometric properties. Chapter 4 includes the results, and Chapter 5 presents the

findings, recommendations, and implications of the study to the field of counseling, medicine, and education.

Chapter Two

Literature Review

Chapter two presents a review of the literature related to the incidence and prevalence of cancer in the Caribbean, return to work issues, and the individual and societal impact of breast cancer. A review of the literature demonstrating a relationship with career thoughts on other medical and psychological disorders also will be discussed. In addition, literature related to career thoughts, depression, and optimism with breast cancer and other chronic illnesses was examined. Finally, relationship between spirituality, with career decision, breast cancer, and other chronic diseases was also presented.

Breast Cancer in the Caribbean

Cancer is considered to be the third leading cause of death in the Caribbean surpassed only by cardiovascular and cerebrovascular disease (Phillips et al., 2007). Although the Bahamas is one of the wealthiest countries in the Caribbean, cancer incidence rates are significant. Phillips et al. (2007) conducted different types of cancer studies among several Caribbean islands. These types of studies cancer focus on the bladder, breast, cervix, esophagus, large bowel, liver, lung, pancreas, prostate, and stomach. Results indicate that males in the Bahamas and Puerto Rico had a higher cancer rate of the bladder than males in other Caribbean countries (Phillips et al. 2007) and Haitian women had the highest frequency of cervical cancer among Caribbean women. In

addition, both Haitian sexes have the highest rate of incidence and mortality related to liver cancer. Barbados and the Bahamas demonstrate the highest rate of cancer mortality for prostate cancer in the Caribbean. Per Phillips et al. (2007), breast cancer incidence rates are higher in Barbados and the Bahamas "where educational attainment and incomes are higher and mammography screening facilities are more widely available than elsewhere in the Caribbean" (p. 482).

The Pan American Health Organization in 2005 noted breast and cervical cancer are the primary causes of cancer-related mortality in the Caribbean. Lopez (2009) stated "…breast cancer is the second leading cause of cancer and the most common in women worldwide" (p. 1). Therefore, breast cancer studies are on the rise in the Caribbean and the Bahamas a like (Phillip et al., 2007). Recent information in *The Nassau Guardian* noted Dr. Judith Hurley, a specialist at the University of Miami, revealed nine types of cancer gene mutations; however, the BRCA1 is still the most prevalent gene (Cartwright-Carroll, 2012). Donenberg (2011) states, "In Canada and the United States, from 3% to 5% of all breast cancer cases are due to mutation in one of two cancer susceptibility genes, BRCA1 and BRCA2" (p. 591). The specialist indicates the revelation of these genes will help scientists and medical investigators decrease the cost of detecting the gene and adequately treat the gene specific cancer cells (Cartwright-Carroll, 2012). She states that this testing is significant for Americans because a large amount of Bahamian women live in the Miami area and identify with this BRCA1 gene. Also, Hurley intends to expand the research to Trinidad and Tobago, Barbados, Dominica, and the Cayman Islands (Cartwright-Carroll, 2012).

Impact of Breast Cancer

The impact of breast cancer on life affects women from an individual and societal perspective.

Individual Impact. The individual impact is seen in psychological, physical, and financial forms.

Psychological. Meyerowitz (1980) stated most researchers agree that breast cancer is a psychologically traumatic event. Medical personnel should become aware of this psychological impact in order to successfully treat women diagnosed with breast cancer. Meyerowitz (1980) noted three areas of responses in the psychological arena: (1) psychological symptoms; (2) changes in life patterns; and (3) fear regarding the cancer and treatment. The most common psychological symptoms associated with breast cancer are depression, anxiety, and anger. Fann et al. (2008) conducted a meta-analysis of studies that examined women diagnosed with breast cancer with depression, distress, and other psychological disorders. The overall depression rates in this review were approximately 10%-25%. Individuals who were treated with chemotherapy experienced more psychological distress and depression. In addition, breast cancer patients' depression rates were higher than pancreatic and oropharyngeal cancer (Fann et al., 2008). The previous mentioned research collected and analyzed numerous studies that examined depression, distress, and psychological disorders of women diagnosed with breast cancer. The effectiveness of this research allows readers to view not only one study but a plethora of studies. This research demonstrated women diagnosed with breast cancer are overlooked and untreated for depression. This untreated depression may not only lead to physical conditions, negative thoughts can emanate from this condition. In

addition, increased functional impairment seems to alter a women's cognitive thinking and sometimes career thoughts.

Physical. As women are affected mentally by the diagnosis of breast cancer, women, especially after a surgical or chemotherapy treatment, may also experience a physical impairment (Chachaj, 2010). One hundred and seventeen women with lymphedema were surveyed in this study. The purpose of this research was to determine how women with lymphedema are affected by disability, and psychological distress, and how their quality of life changes. The results revealed strong correlations between disability, psychological distress, and quality of life ($R = 0.47$). A statistical difference was noted among all of these three variables with pain in arm or shoulder ($p < 0.001$), difficulties in moving arm ($p = 0.001$), and pain in operated breast ($p < 0.001$). In addition, Chachaj (2010) indicated, ". . . the only type of breast cancer treatment found to be associated with a worse current functioning of women with lymphedema was chemotherapy. It was related to a higher disability level (DAS) score ($F = 7.87$; $p = 0.005$) and to a lower QOL score" (p. 303). Although, only 33.47% responded to this study, it exemplified much statistical different effect with disability and quality of life levels. Also, the author noted more therapeutic actions are needed for women to help curve physical impairment such as pain, and arm volume reduction coupled with some form of therapy. Like Chachaj (2010), the present study is seeking to introduce programs for breast cancer survivors such as helping improve negative career thoughts. Once quality of life, disability, and psychological distress are affected this may also affect their financial status.

Financial. The individual financial impact for breast cancer was overlooked for years by many researchers (Lauzier et al., 2008). Lauzier et al., (2008) indicated three reasons salary losses are important to individuals diagnosed with breast cancer. They were (1) it is a major strain; (2) employment shift under the age of 65 has changed for women diagnosed with breast cancer; and (3) increase cost of cancer treatment due to advancement. Eight hundred women were surveyed at the 1, 6, and 12 month period. Lauzier et al. (2008) also noted statistical significant levels of lost wages with lower level of education, low levels of social support, self-employment, part-time jobs, more invasive disease, and being treated with chemotherapy. Although the researcher used one country, this study had many participants who were surveyed. In addition, one of the implications made by Lauzier et al. (2008) is that the resources and information provided about wage loss will help women diagnosed with breast cancer make better plans and think better about organizing their work situation. From these results, economic impact is a significant aspect of the experience of breast cancer.

National Institutes of Health (NIH) has indicated that ". . . all costs of cancer in 2007 were $226.8 billion: $103.8 billion for direct medical costs (total of all health expenditures) and $123.0 billion for indirect mortality costs" (Cancer Facts & Figures, 2012, p. 3). In addition, uninsured individuals accounts for about 51 million of the U.S. population (U.S. Census of Bureau, 2009). The individuals with no insurance and individuals from ethnic groups tend to increase the cost of cancer because they are most likely diagnosed in the later stage of cancer (Cancer Facts & Figures, 2012). Finally, "cancer costs billions of dollars. It also costs us the people we love. Reducing barriers to cancer care is critical in the fight to eliminate suffering and death due to cancer"

(American Cancer Society, 2012, n. p.). Therefore, studies may need to be conducted to help identify levels of dysfunctional career thoughts and then implement interventions to help improve high dysfunctional career thoughts.

Societal Impact. The societal impact may be seen in financial and social forms.

Financial. American Cancer Society (2012) has indicated the cost of cancer treatment is very high for the individual as well as the society at large. In the year 2007, the National Institutes of Health released the total amount of $226.8 billion, direct medical costs ($103.8 billion), and indirect cost ($123.0 billion). As this financial cost rises, it may affect children, husbands, communities, and thus government.

The Health Reform Government (2012) has indicated the treatment and cost of breast cancer has risen up to the $7 billion mark from the year 2007. Insurance companies are increasingly making it difficult for women with breast cancer as the cost out of pocket, high deductibles, and copayments have increased over the years (Health Reform Government, 2012). In conclusion, Gabel et al. (2004-2007), regarding the cost of breast cancer on the society, stated "Breast cancer patients with employer-based insurance had total out-of-pocket costs averaging $6,250 in 2007, higher than out-of-pocket spending for patients with asthma, diabetes, chronic obstructive pulmonary disease (COPD), or high blood pressure" (n. p.). Even though societal impact is evident, women who are diagnosed with breast cancer still need to return to work to maintain quality of life and to pay for their treatment thus career thoughts needs to be explored. Therefore, this disease has impacted the economic part of our society and career processes that involve women's return to work.

Social. The diagnosis of breast cancer can be stressful especially without the social support of family, friends, co-workers and community. Friedman et al. (2006) examined the relationship among age, marital status, dispositional optimism, and satisfaction with social support of 81 females diagnosed with breast cancer. A social support questionnaire and the optimism scale were used to explore these relationships. A variance percentage rate of 40% was noted among older age, receipt of treatment, and greater optimism with emotional well-being ($p< 0.01$). In addition, social well-being had a 43% variance with optimism and satisfaction ($p<0.01$). Despite the low participants' level for this study, Friedman et al. (2006) found women diagnosed with breast cancer with treatment experienced better emotional well-being and decrease intrusive thoughts. Therefore the researchers suggested "…women in public sector medical settings who may be likely to experience psychological distress can be identified early and provided with appropriate intervention…" (Friedman et al., 2006, p. 602). Also, the researchers have noted facilitation of social support may help women cope with the difficulties of the diagnosis of breast cancer.

Social constraints (Lepore & Ituarte, 1999) and lack of support (Kim, Han, Shaw, McTavish, & Gustafson, 2010) of women diagnosed with breast cancer may cause women to feel alienated from their families and society. Social constraints are " …any social condition that causes trauma survivors to feel unsupported, misunderstood, or otherwise alienated from their social network when they are seeking social support or attempting to discuss their trauma" (Lepore & Ituarte,1999, p. 168). In addition, according to Cordova, Cunningham, Carlson, and Andrykowski (2001) social constraints have been associated with increased depression rates of women with breast cancer. The

purpose of their research was to explore the relationships among social constraints, cognitive processing, depression, and well-being women diagnosed with breast cancer. Intrusion partially mediated the relationship between constraints and depression. Whereas constraints showed a positive relationship with depression (R^2=.34), depression yielded a strong negative relationship with well-being (r=-.78). This means as the women diagnosed with breast cancer social constraints level increase their depression rate decreases. On the other hand as their depression rate increases, their well-being rate decreases. Positive relationships were observed by constraints with uncertainty in narratives, intrusions, and avoidance. Other studies have shown that social variables are affected by women being diagnosed with breast cancer. Also, social difficulties have not only affected the women with breast cancer but also their spouses (Sheridan, Sherman, Pierce, & Compas, 2010).

Other studies have focused on the social support of women with breast cancer. Kim, Han, Shaw, McTavish, and Gustafson (2010) noted women diagnosed with breast cancer stated **"**perceived social support not only directly increases emotional well-being, but also may indirectly influence emotional well-being by affecting the choice of specific coping strategies" (p. 549).This research also showed a positive effect of positive reframing and emotional well-being of women diagnosed with breast cancer. Therefore, women's physiological and social concerns have been affected in the society in general in both negative and positive ways. Psychological, physical, and social aspects have affected women diagnosed with breast cancer; however, the cost of the treatment and management of breast cancer has escalated and has affected one's individual and societal way of living.

Breast Cancer and Employment

A meta-analysis for patients diagnosed with a general cancer disorder was conducted from the years 1985 – 1999. Spelten, Sprangers, and Verbeek (2002) demonstrated the percentage of persons who return to work was 30%-93% with an overall mean of 62%. Out of this meta-analysis, 88% of women diagnosed with breast cancer return to work. The amount of participants for this study was 454 women. However, research from 2002 – 2007 indicated 85% women return to work with a total of 1821 participants (Bradley, Neumark, Bednarek, & Schenk, 2005; Bradley, Neumark, & Schenk, 2007; Bouknigh, Bradley, & Luo, 2006). Therefore, in recent years more women are affected with some aspects of returning to work and may affect their career thoughts.

Dysfunctional Career Thoughts

In this section, a review of the literature as it relates to dysfunctional career thoughts and the cognitive information theory (CIP) is discussed. Cognitive information theory and its domains related to career development is examined in this present study. Dysfunctional Career thoughts studies done with populations of university students, individuals with traumatic disorders, persons with disability, and ADDH are conferred. Additionally, the linkage between dysfunctional career thoughts, depression, and breast cancer is examined.

Dysfunctional thinking causes one to block informing processing, reduces options, and distorts perception of options. Career thoughts are defined as the assumption, plans, strategies, feelings, and behavior associated with career choice (Lenz, Sampson, Peterson, & Reardon, 2012). The theoretical foundation for developing the CTI is a derivative of cognitive information processing theory.

Cognitive information processing (CIP) theory is similar to a computer operating system (Reardon, Lenz, Sampson, and Peterson, 2009). Three different domains encompass this theory: knowledge, decision-making, and executive processing domains. These are illustrated in Figure 2.1. The lower level knowledge is viewed as the Computer

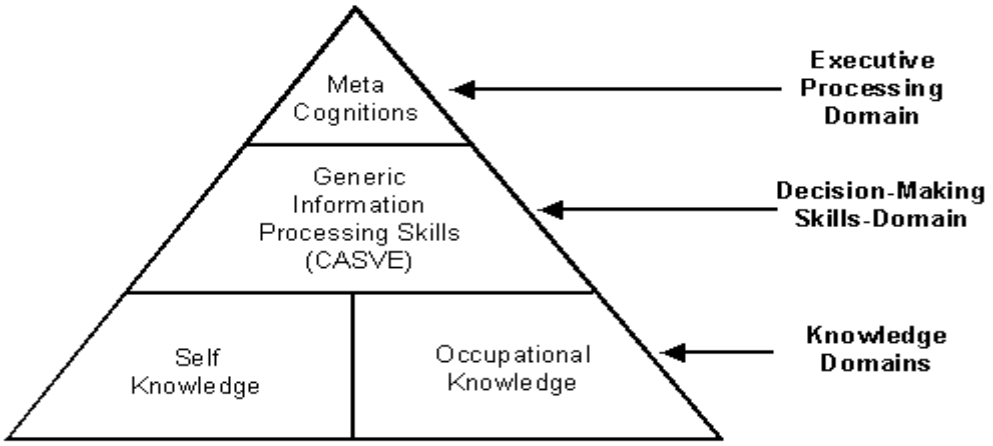

Figure 2.1. Pyramid of information processing domains in career decision making: counselor version (Reardon, Lenz, Sampson, & Peterson, 2009)

Processing Unit (CPU) of the computer where information is stored such as values, interests, and skills from the self-knowledge.

The occupational knowledge is located in the lower level of the pyramid. Interest is defined by Reardon et al. (2009) as "those things a person does for fun or enjoys" (p. 18). The occupational knowledge domain also focuses on elements in occupational information, changes in occupational knowledge, and sources of information needed for

improved career thoughts (Reardon et al., 2009). Further, exploration of self-knowledge and occupational knowledge are two areas that may assist with improving one's self knowledge and career planning after being diagnosed with breast cancer.

The decision-making skills domain of the theory includes five phases called the *CASVE* cycle (Communication, Analysis, Synthesis, Valuing, and Execution; Figure 2.2).

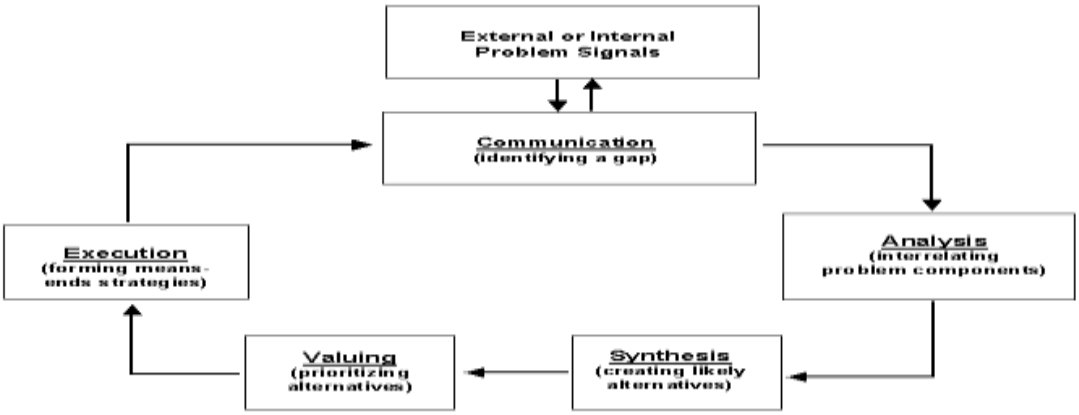

Figure 2.2.The five stages of the CASVE cycle of information processing: counselor version (Reardon, Lenz, Sampson, & Peterson, 2009).

The *CASVE* can help women diagnosed with breast cancer to revisit any career concerns. The communication phase examines the gap between internal or external communications. Examples of external communicational gaps are caregiver issues, and warning notes from a boss about increased sick days related to treatment of breast cancer.

'Analysis' is the second phase in the *CASVE* cycle and involves taking "…a moment to think, observe, research, and more fully understand the gap and their ability to respond effectively" (Reardon et al., 2009, p. 60). Key aspects of this analysis stage entail helping individuals clarifying self-knowledge related to the gap, clarify occupational

knowledge related to the gap, understanding how one makes important decisions, and noting how thinking and choices are linked (Reardon et al., 2009).

The 'Synthesis' phase allows individuals to examine the course of action to pursue to help eliminate the problem or gap. This phase involves two sub-phases called synthesis elaboration and synthesis crystallization. *Synthesis elaboration* entails brainstorming options to help with choosing a decision about one's career. *Synthesis crystallization* is the second sub-phase consisting of narrowing potential options. Being diagnosed with breast cancer is not a choice women want, but they have a choice in the way they approach this disease. Alternatives for treatments that affect quality of life and, hence, affect one's career thoughts processes make the processes of *synthesis elaboration and crystallization.*

The 'Valuing' phase in the *CASVE* cycle involves individuals weighing cost and benefits for each option chosen in the synthesis stage. Different decisions in career are made such as examining oneself, significant others, cultural group, and community and society (Reardon et al., 2009). Individuals' moral judgment can be tested in this phase. Women diagnosed with breast cancer make an emotional commitment to carry through with the choice (Reardon et al., 2009).

The final phase in the *CASVE* cycle is called the 'Execution' phase. As individuals identify the communication gap, analyze their decision, synthesize their decision, and then assign value to their decision, they must execute the decision to complete the cycle. Women diagnosed with breast cancer change thoughts into action by planning, trying out the plan, and applying that plan in the decision making process

(Reardon et al., 2009). The *CASVE* cycle may help women diagnosed with breast cancer make positive decisions.

The final domain is called the 'executive processing' domain, which examines one's metacognitions including self-talk, self-awareness, and control and monitoring (Reardon, Lenz, Sampson, & Peterson, 2009). Women diagnosed with breast cancer can make positive statements such as, "The diagnosis of breast cancer will not hinder me from pursuing my certification in public speaking" (p. 67). This positive self-talk help women diagnosed with breast cancer have a positive expectation and reinforce positive behavior through improved career thoughts (Reardon, Lenz, Sampson, and Peterson, 2009).

Career thoughts and other variables. Career thoughts have been studied over the years in conjunction with different emotions and different behaviors (Bertoch, 2010; Bullock-Yowell, Peterson, Reardon, Leierer, & Reed, 2011; Chaso, 2010; Dahl, Austin, & Wagner, 2010; McLennan& Arthur, 1999). Bullock-Yowell, Peterson, Reardon, Leierer, and Reed (2011) investigated the relationship among career and life stress and career thoughts. Two-hundred and thirty two university students who were enrolled in an introductory career development course were surveyed. Results indicated that career and life stresses, negative career thoughts, and career decision state were statistically significant ($p<.01$). The relationship among these variables was positive. As career and life stress increases so does negative career thoughts. In addition, as their career indecisive level increases so does their negative career thoughts. On the other hand, "the two observed variables of career and life stress were not significant ($p> .05$)" (Reardon et al., 2011, p. 307).This study demonstrated through structural equation model (SEM) that

negative career thoughts mediated a negative relationship between career and career stress and career decision stress.

Austin and Cilliers (2011) pointed out that individuals who are transitioning through employment status because of crisis such as breast cancer may have to rethink their career and life direction. Austin and Cilliers (2011) examined the relationship between career thoughts and salutogenic functioning, such as locus of control and sense of coherence. These researchers indicated that internal control was used in health-related literature and was related to greater salutogenic functioning (Bobak, Pikhart, Hertzman, Rose, & Marmot, 1998). Results from Austin and Cilliers (2011) study indicated a negative but moderate relationship between career thoughts and career decision-making self-efficacy ($r=-0.307$, $p<0.01$). Career decision-making self efficacy is tasks and activities that affect a person's career (Austin & Cilliers, 2011). This indicates as the dysfunctional career thoughts increases their career decision-making self efficacy decreases. Correlations were noted between CTI, career decision making, and locus of control ($p<.01$). Locus of control is "…cognitive expectancy in areas related to personal control…" Austin & Cilliers, 2011, p.5). In addition, locus of control was positively significantly correlated with CTI ($r=0.349$, $p<0.01$) and career decision meaning ($r = 0.307$, $p<0.01$). This indicates has their dysfunctional career thoughts increases their loss of control increases and career meaning increases. The researchers indicated individuals with positive internal locus of control are more confident about career decisions and have improved career thinking.

Career thoughts and medical/psychiatric or traumatic disorders. Cognitive Information Processing (CIP) in career development has never been used with persons

with chronic disease like breast cancer (G. Peterson, personal communication, February 10, 2012). However, CIP has been used with populations who have traumatic brain injury and traumatic stress (De Pereira, 2008; Strauser, Lustig, Cogdal & Uruk, 2006), and attention-deficit hyperactivity disorder (ADHD; Painter, Prevatt, & Welles, 2008).

Traumatic disorders.Strauser et al. (2006) linked traumatic symptoms to career thoughts. The sample consisted of 131 undergraduates who were 53% (Caucasian), 42% (African American) and 88% (women), 12% (men). Trauma was defined as any circumstance that involves near death or accident (Strauser et al., 2006). The purpose of the study was to determine the connection between career thoughts, work personality, and vocational identity. The goals of this article were to help career counselors become familiar with post-traumatic stress disorder (PTSD) symptoms and to help career counselors understand how to use instruments to measure trauma symptoms in order to help clients with this issue. The CTI and the My Vocational Situation (MVS) were two of the measures included in this research. The results indicated higher levels of traumatic symptoms are negatively correlated with developmental work personality, vocational identity, and career thoughts (Strauser et al., 2006). This research also found that higher levels of traumatic symptoms correlated with negative career thoughts and relates to depression.

***Depression*.** Dysfunctional career thought has been closely associated with depression (Dagenhart, 2005; Saunders, 1998; Saunders, Peterson, Sampson, & Reardon, 2000; Strauser, Lustig, Cogdal, & Uruk, 2006; Walker, & Peterson, 2012).The purpose of the study by Saunders, Peterson, Sampson, and Reardon (2000) was to determine how depression plays a role in career indecision. The goal of their article was to help career

counselors better understand how career indecisions affect clients' cognition and emotions. There were 180 women and 55 men. The racial factor consisted of 158 (Caucasian), 25 (African American) and the majority were freshmen. There were five measures used in this study: Two of the five instruments were CTI and Beck Depression Inventory. The results from using these scales indicated state anxiety, trait anxiety, locus of control, depression, dysfunctional career thoughts are positively associated with career indecision and positively related to each other. Trait anxiety had the strongest relationship with state anxiety (r = .78). Depression had the weakest relationship with career indecision (r=0.22). All of the other positive relationships fall in between 0.22-0.78. Saunders, Peterson, Sampson, and Reardon (2000) noted their main limitation was there was a "…difficulty of identifying constructs and measures that represent clearly defined independent variables" (p. 294). It appears that some of these constructs were intertwined. For example, the Career Thoughts Inventory and the Beck Depression show high correlation to each other indicating they may reveal if the participants are depressed.

Walker and Peterson (2012) explored the relationship between depression associated with career indecision and dysfunctional career thoughts. This article also explored how the sex of the subject affected career thoughts. The goal of this article was to determine how career counselors can better assess the different level of emotional distress of individuals at the beginning of career counseling. The sample consisted of 158 undergraduate students (57.6% males, 42.4% females, 61.6% Caucasian, and 23.9% African American) who were presented with three instruments during the first week of their class. Two of the instruments were the CTI and the Beck Depression Inventory-II. Results revealed a moderate positive relationship between career thoughts and depression

symptoms (r = .42, p< .001). This means as dysfunctional career thoughts increased, depression levels also increases, showing some linkage with depression and dysfunctional career thoughts. Another result indicated a statistical significance between state of career indecision and depressive symptoms. A significant difference was also noted between males and females with respect to the commitment anxiety scales. However, no significance was noted due to sex in the decision making confusion (DMC) subscale, career indecision, and depression. This indicates their sex does not have a relationship with their career decisions, and level of depression. The results demonstrated that career indecision is moderately related to depression with a moderate effect size (ES: .34). This suggests a linkage among depression, breast cancer, career thoughts and career indecisions. In addition, studies with breast cancer survivors have suggested a link between optimism and spirituality. These mediators will be examined in the following section.

Cognitive Mediating Variables

Optimism. Optimism has been defined as a state of possessing positive attributes with more positive outcomes than those that are negative (Dunn, Occhipinti, Campbell, Ferguson, & Chambers, 2011). Another term dispositional optimism, ". . . is a personality factor that may be one of the most influential in cognitive appraisal" (Buxton, 2011, p. 23). Dispositional optimism has also been consistently interchanged with optimism and studied in women diagnosed with breast cancer (Carver et al., 1993, 1995; Carver, Scheier, & Segerstrom, 2010). Carver et al. (1993) expressed that being optimistic is the opposite of being pessimistic. Carver, Scheier, and Segerstrom (2010) acknowledge that individuals either displayed on one side of the continuous scale a sense of being

optimistic to the other side of being pessimistic. Coping style, positive or negative, was examined by many early studies from the late 1980s and early 1990s (Carver et al., 1993, 1994; Scheier & Carver, 1985, 1992) by Carver and associates.

Early breast cancer optimism research. Early researchers focused on the optimistic or pessimistic level of individuals diagnosed with breast cancer after experiencing surgery (Carver et al., 1993, 1994). Although the focus of this study was to review the optimism in women diagnosed with breast cancer, studies with pessimism outcome was examined because, as indicated by Carver, Scheier, and Segerstrom (2010), optimism is the opposite of pessimism. Carver et al. (1993) found their adjustment levels were predicted by how optimistic or pessimist women diagnosed with breast cancer perceived themselves. Poor adjustments identified as a pessimistic characteristic were found by women at the one day before surgery, 3-month, 6-month, and 12-month post-surgery points. Another study by Carver et al. (1993) also indicated at one day pre-surgery, 10 day, 3-month, 6-month, and 12- month post-surgery that as one's optimistic level increased, their distress level decreased. This inverse relationship of optimism and distress levels showed that women had coping styles, such as acceptance, positive reframing, and the use of their religion that played a factor in the optimistic level. The previous mentioned studies done in the eighties and nineties focused more on one year post surgery outcomes, whereas current research examined survivors of the breast cancer diagnosis more than three years post-operative.

Current breast cancer optimism research. Recent studies, such as Carver, Scheier, and Segerstrom (2010) have also focused on the optimistic or pessimist characteristics of women diagnosed with breast cancer who had undergone surgery

(Carver et al., 2005; Lechner, Carver, Anotoni, Weaver, & Phillips, 2006; Wimberly, Carver, & Antoni, 2008). Carver et al. (2005) examined women who were studied at a 1-year post-surgery point. This research examined women's optimism levels in relationship with their well-being 5 – 13 years after surgery. The results indicated well-being was a strong predictor of follow-up well-being for the women in the 5 – 13 years post-surgery. Two other variables such as optimism and marital status were statistically related with subjective well-being. In addition, Lechner et al. (2006) compared two groups of women diagnosed with breast cancer who reexamined benefit findings and other psychosocial adjustments such as positive effects and perceived quality of life. Even though Lechner et al. (2005) showed higher optimism with benefit finding, this present research and Carver et al. (1993) demonstrated more positive reframing and use of religion were found in the women who were optimistic.

Optimism and breast cancer. Optimism exploration research with breast cancer populations has been on the rise in recent years (Gustavsson-Lilius, Julkunen, Keskivaara, Lipsanen, & Hietanen, 2012; Lam et al., 2012; Young & Sook, 2012). Gustavsson-Lilius et al. (2012) explored the relationship among sense of coherence, dispositional optimism, and distress with cancer patients and their partners. Although this research focused on all types of cancers, the women diagnosed with breast cancer accounted for 74.1% of the total population surveyed. Cancer patients and their partners completed instruments such as Life Orientation Test-Revised (LOT-R), Beck Depression Inventory (BDI), and Endler Multidimensional Anxiety Scales (EMAS-State) to predict the optimistic levels, sense of coherence, and distress levels. The utilization of several path analysis models from Gustavsson-Lilius et al. (2012) demonstrated the patients and

their partners experienced high dispositional optimism with less anxiety and depressive symptoms. In addition, sense of coherence was ". . . statistically significantly associated with optimism, anxiety and depression" (Gustavsson-Lilius et al., 2012, p. 189) at the 2nd and 6th month post diagnosis points. Positive correlation was noted between the patient and partner distress at baseline and at 8-month follow-up. This research concluded that the patients and their partners who are more optimistic have a more positive outlook to their diagnosis and thus decrease in distress symptoms.

Young and Sook (2012) studied the psycho-social adjustment of women diagnosed with early breast cancer. Structural models were used in the research. The researchers found coping style, social support, symptom experience, and uncertainty had statistically significant direct, indirect, and total effects of the psychological adjustment of women diagnosed in early stage of breast cancer. In addition, Young and Sook (2012) noted optimism level had a significant indirect and total effect to psychosocial adjustment. This research indicated collaborative interventions programs that help women and their families reduce perceived stresses.

In addition to distress, sense of coherence, and psycho-social adjustments, the optimism scale has been researched with other variables such as social support, hope, coping style, and emotional well-being of women diagnosed with breast cancer (Matthew & Cook, 2009; Zhang, Gao, Wang, & Wu, 2010). Matthew and Cook (2009) determined the relationship between optimism and emotional well-being of women while experiencing the treatment of breast cancer. The researchers wanted to detect risk factors through early detection for women with breast cancer. Therefore, the overall objective given by the researchers (Matthew & Cook, 2009) was to open the *optimism lens* of the

women experiencing breast cancer to facilitate a positive emotional well-being in spite of the unplanned event. The results indicated that being optimistic and having social support improves well-being while being diagnosed with breast cancer. Also, women 12 months after surgery had less hopeless/helplessness, a fighting spirit, and problem focused-strategies that mediate the influence of optimism (Matthew & Cook, 2009). The results indicate that if women diagnosed with breast cancer confront problems from the early onset of their diagnosis, they possess a positive well-being toward cancer. Finally, women who look at breast cancer in a negative sense may not show self-transcendent behavior and attitudes.

Zhang, Gao, Wang, and Wu (2010) also examined the relationship among hope, coping style, and social support in women with breast cancer. Hope is a future positive emotion indicated by Seligman (2002). The goal of this article was to help Chinese women diagnosed with breast cancer focus on hope and coping style with the assistance of their medical personnel. In the discussion section after each explanation, the authors noted, ". . . medical workers should use effective coping styles to encourage patients . . . it is useful for medical workers to build up social support . . . medical personnel should build up social support" (Zhang, Gao, Wang, & Wu, p. 2333 & 2334). The instruments determined a correlation between hope and age, educational level, marital status, work condition, and cancer stage. The results indicated that there was no statistical relationship between the above variables, but one was observed via hope and the monthly income. Zhang, Gao, Wang, and Wu (2010) also noted a positive relationship among hope and optimism, confrontive, self-reliant, and palliative coping styles. A negative relationship was noted between hope and fatalistic and emotional coping style.

The previous mentioned past and recent research discussed the topics of optimism and other variables with women diagnosed with breast cancer. However, research involving the relationship of optimism and career related variables has also been examined.

***Optimism and career decisions*.** Career optimism is a growing new term used by career educators in this era (Friedman, Kane, & Cornfield, 1998). Many career decisional studies demonstrated a positive relationship with optimism and some career development variables (Creed, Patton & Bartrum, 2002; Higgins, Dobrow, & Roloff, 2010; Rottinghaus, Buelow, Matyja, & Schneider, 2012; Rottinghaus, Day, & Borgen, 2005). Higgins, Dobrow, and Roloff (2010) explored how psychosocial and career support is associated with optimism. A longitudinal study was done on 136 individuals who graduated from a business school in 1996. One of the hypotheses demonstrated persons with early-career psychosocial support and early-career support were statistically and positively related to optimism. In addition, over time these business graduates' psychosocial support and career support were positively related to optimism (Higgins, Dobrow, & Roloff, 2010).

Another study examined the relationship between optimism or pessimism with career and well-being related variables. Creer, Patton, and Bartum (2002) surveyed 504 high school students who demonstrated optimism was positively correlated to Career Development Attitude (CDA). This indicates higher optimism level is related to more career planning and exploration. In addition, high confidence levels in career decisions and career related goals typically occurred in high school students with high optimistic levels. In terms of career decision-making certainty, there was higher level of optimism

noted in these students. Also, career goal setting was modestly correlated with optimism. This study demonstrated a positive relationship with career related variables and optimism.

Adolescent and young adult cancer survivors demonstrated having optimism associated with career decision-making variables in Israel (Stern et al., 2010). Correlations were examined among dispositional optimism, health vulnerability, time perspectives with career decision-making (CDM), and quality of life (QOL). The within cultural correlations between Israel-Jewish and Israel-Arab of adolescent and young adult survivors were also compared. Results indicated optimism, vulnerability and future time perspective were positively related with QOL and CDM. There was a positive correlation between optimism and QOL in the Israel adolescent and young adults cancer survivors. Israel-Jewish survivors were shown to be more optimistic than Israel-Arabs. Despite the varied results, this present research will examine the relationship between optimism and career thoughts of women diagnosed with breast cancer. This present research will also seek to explore the relationship between spirituality and career thoughts.

Spirituality. The mediating effects of spirituality on mental health and well-being have been the focus of recent research. A "Summit of Spirituality" was held in 1995 in North Carolina by a group of Counselors from the American Counseling Association to help integrate spirituality in counseling (Young, Wiggins-Frame, & Cashwell, 200 7). In order to infuse spirituality with counseling the counselors helped to describe spirituality and religion. Young, Wiggins-Frame, and Cashwell (2007) provided ten descriptions of spirituality that include knowledge, love, meaning, peace, hope, transcendence, connectedness, compassion, wellness, and wholeness. The 1995 Summit on spirituality

defined spirituality as an active and passive process that moves through a person for knowledge, love, meaning, hope, connectedness, and compassion. Young, Wiggins-frame, and Cashwell (2007) noted "Spirituality is the infusion and drawing out of spirit in one's life" (p.30). Another definition offered by Faiver, Ingersoll, Obrien, and McNally (2001) is significant for the present research. Faiver, Ingersoll, Obrien, and McNally (2001) states spirituality can be considered something that brings about a major transformation in one's life due to some form of suffering or disappointment in one's life.

On the other hand, Young, Wiggins-frame, and Cashwell (2007) noted "Religion, by contrast, is the specific organized and codified form through which individuals may express their spirituality" (p. 48). Corbett (1990) defined religion as "an integrated system of belief, lifestyle, ritual activities, and institution by which individuals give meaning to (or find meaning in) their lives by orientating them to what is taken to be sacred, holy, or the highest value" (p. 2). For the purpose of this present research, spirituality and religion will be used interchangeably.

Spirituality and Career Decision Making. Spirituality and an individual's career decision has been interlinked in different studies over the years (Constantine, Miville, Warren, Gainor, & Lewis-Coles, 2006); Davidson & Caddell,1994; Hirsbrunner, Loeffler, & Rompf, 2012; Rodriguez, 2011). Davidson and Caddell (1994) stated that an individual's spirituality or religiousness is associated with their work or occupation. Constantine, Miville, Warren, Gainor, and Lewis-Coles (2006) have also noted individuals use their spirituality to help with career challenges they encounter on a daily basis. Some spiritual or religious activities they use to cope with career problems include attending church, praying, being in the choir, and reading their bibles. Constantine,

Miville, Warren, Gainor, and Lewis-Coles (2006) also stated these college students who were surveyed believe an unique plan involves their career choice is directed from God or a higher being.

Recent and past studies examined the relationship between spirituality and career variables (Hirsbrunner, Loeffler, & Rompf, 2012; Rodriguez, 2011). Hirsbrunner, Loeffler, and Rompf (2012) revealed positive and negative relationships between spirituality and career choice motivation. Seventy undergraduate students from a small private Christian university were asked to determine how their spiritual life has affected their career choice of becoming a social worker. Results indicated a significant negative relationship with the participants who felt spirituality influenced their career with those who were more motivated by job security (r = -.330, n = 70, p = .005). In addition, a significant negative relationship was seen between spirituality influence and motivation of negative past events (r = –.242). However, positive correlations were seen between spirituality influence on career choice and social worker's perception as a spiritual calling (r =.689). This research focused on the relationship among spirituality and religiosity and their effects on undergraduate social work career choice. Other religiosities studied compared with career variables such as dysfunctional career thoughts.

Rodriquez (2011) examined the relationship among calling, religiousness, and dysfunctional career thoughts in public university students. Calling is defined as "…a sense of purpose or meaningfulness and that holds other-oriented values and goals as primary sources of motivation" (Dik & Duffy, 2009, p. 427). Religiousness is an individual involvement and practice in a the religious group (Miller & Thoresen, 2003). Participants in this study were students enrolled in an undergraduate career development course. One

question as ked, “What is the relationship between religiousness and dysfunctional career thoughts?” (Rodriquez, 2011, p. 43). Very weak associations were noted among intrapersonal religious commitment, interpersonal religious commitment, and total religious commitment and decision making confusion (DMC), commitment anxiety (CA), and total dysfunctional career thoughts. Strong relationships were noted between commitment anxiety and religious variables. High correlations were noted between intrapersonal religious commitment, interpersonal religious commitment, and total religious commitment.

Spirituality and other chronic diseases. Physical well-being, social well-being, psychological well-being, and more recently, spiritual well-being are considered important variables used by many health care researchers today (Bredle, Salsman, Debb, Arnold & Cella, 2011; Hackney & Glenn, 2003; Rowe, & Allen, 2004; Peterman at al., 2011; Szaflarski et al., 2006). Hackney and Sanders (2003) examined these variables using a meta-analysis with religious/spirituality as one of the variables. Hackney and Sanders (2003) examined thirty-four articles in the past twelve years. Positive relationships were associated with religiosity and mental health (r=0.10) meaning as their religious beliefs increases mental health increases. Although, this research noted positive relationship with religiousness and mental health, the researchers found negative relationship associated with mental health. The result outcomes depended on how the definition of religion was defined and psychological adjustment used (Hackney & Sanders, 2003). From this meta-analysis, spirituality/religion was represented as a coping strategy for individuals with chronic illness.

Rowe and Allen (2004) investigated the relationship between spirituality and coping style among individuals diagnosed with a chronic illness. A sample of 201 (67.3% women and 32.7% men) were recruited from different groups such as a physician's group, a Catholic group, a fire company, and a cancer support group. The researchers wanted to choose between larger diverse participants. Two instruments were used in this study. The Spirituality Involvement and Beliefs Scale (SIBS) were used to measure spirituality through purpose in life, faith, and trust. The Coping Style Scale that measured the coping style of individuals. The result suggested that spirituality was positively correlated with one's ability to cope in individuals diagnosed with chronic illnesses such as diabetes, cancer, chronic back pain, hypertension, asthma, heart diseases, and epilepsy. A few limitations noted in this study by the researchers were (1) a few participants revealed deliberating conditions related to the chronic illness; (2) a few minority groups were used; and (3) specific religion were noted examined (Rowe & Allen, 2004). One particular group such as a cancer group or the Catholic group should have been surveyed instead of the diverse group. These individuals have different experiences, beliefs, values and circumstances that may affect their coping styles.

Szaflarski et al. (2007) examined the effect of spiritual well-being/religion and the perceptions of living with HIV/AIDS. Four hundred and forty-nine individuals diagnosed with HIV/AIDS were recruited for this study. The participants completed the FACIT-SP-Ex used to measure spirituality along with other instruments to determine the effect of this diagnosis. The indirect and direct effects of being diagnosed with HIV/AIDS were examined after information such as health status, lifestyle, social support, and healthy beliefs (optimism) were collected. Path analysis has revealed the participants diagnosed

with HIV/AIDS noted spirituality or religion has the largest total direct effect (68%) on having a better life. Although, this study has a positive outcome result for individuals diagnosed with HIV/AIDS a shortcoming is also noted with this study. The instruments used were self-reported and done at one particular time in their life. In addition, this study used HIV/AIDS, which is also a chronic illness like breast cancer. The researchers also revealed some mechanisms that were not mentioned in the study may have affected their improvement in a better way of life. Some mechanisms may be improved with cognitive or career thoughts. Other chronic diseases such as HIV/AIDS and breast cancer were explored with the spirituality variable.

Spirituality and breast cancer. Spirituality/religion variables have also been examined with breast cancer survivors (Perkins et al., 2007; Smith, Herndon, & Lyerly, 2011; Thune-Boyle, Stygall, Keshtgar, 2011). Forty-four participants who were diagnosed with advanced breast cancer were studied for psychosocial resources of quality of life (Smith, Herndo, & Lyerly, 2011). The research was done under the umbrella of a Pathfinders program that investigated coping styles, inner strength, and self-care plan of women diagnosed with breast cancer. Spirituality was not originally the focus of the research; however, spirituality was inversely correlated with despair ($p<0.01$). In addition, six months after the treatment, spirituality was positively associated with emotional well-being ($p<0.05$). Therefore, spirituality has been correlated with an improvement with despair while adjusting the demographic variables in women diagnosed with breast cancer.

Another study focusing on spirituality examined the predictors of well-being of women diagnosed with breast cancer (Perkins et al., 2007). One-hundred and twenty

seven women from the Moffitt Cancer Center in Tampa, Florida completed a health survey—Fatigue Symptom Inventory and FACIT-Sp. The purpose of the study was to identify psychosocial resources for older women diagnosed with breast cancer. Two of the variables, life satisfaction (*r*=.318), and general health perception (*r*=.305) were positively statistical related to with spirituality. This means individuals life satisfaction and perception of their general health increase so does their spirituality. All of these yielded a positive but moderate relationship with each other. On the other hand, a moderate negative relationship was seen with optimism (*r*=-.452), mastery (*r*=-.316), and spirituality (*r*=-.336) with depression. As optimism, mastery, and spirituality increase the depression level decreases. In addition, social support and general health perception (*r*=-223), and satisfaction with support and general health perception (*r*=-2.94) yielded a small to moderate negative relationship with each other. Spirituality was seen to increase while life satisfaction and general health perception decrease (Perkins et al., 2007). Limitation in this study showed an over emphasis of highly educated breast cancer patients and healthier Caucasians. In addition this study appears to be negatively related to variables that appear positive in nature such as optimism and general health perception. The study also shows that there is a linkage between different variables and depression.

Summary

The impact of breast cancer on women's career thoughts and potential mediating factors will be the primary focus of this research. Optimism and spiritual levels have been seen in women diagnosed with breast cancer (Matthew & Cook, 2010; Thune´-Boyle, 2011). In addition Perkins et al. (2007) found depression has a linkage with different variables such as spirituality, general perception of health, and optimism with women

diagnosed with breast cancer. However, limited research exists on how dysfunctional career thoughts have been impacted among women diagnosed with breast cancer. Limited research has been conducted with optimism and spirituality characteristics examined independently and this will be the first time both variables will be explored in relation to dysfunctional career thoughts. As women's dysfunctional career thoughts decreases hopefully so too will their career development increases. In addition, women in the Bahamas receive adequate medical treatment after their diagnosis of breast cancer, but little is known about obtaining interventions needed to assist with their career development after being diagnosed. Also, little is known about the impact of breast cancer on women's dysfunctional career thoughts. The present research will seek to explore the relationship among dysfunctional career thoughts, optimism, and spirituality with women diagnosed with breast cancer in the Bahamas.

Chapter Three

Methods

The methods chapter includes research questions, null hypotheses, and the design of the study. In addition, this section presents the procedures, the sample studied, along with explanation, and the instruments that were used. Finally, this section also discusses why the particular developed country was surveyed, the reason for the 1-year survival rate, and the determination for sample size, power, and alpha level, and data analysis.

Research Questions and Hypotheses

The literature review in Chapter 2 helped to frame the questions for this study. The following research questions and the hypotheses guide this research:

RQ1: How are demographic characteristics (e.g., age, education, marital status, and ethnicity) related to career thoughts of women diagnosed with breast cancer?

$H1_0$: There is no relationship between participants' demographic characteristics and their career thoughts.

$H1_a$: There is a relationship between participants' demographic characteristics and their career thoughts.

RQ2: How are the pre and post diagnosis breast cancer variables (e.g., occupation diagnosis, employment status diagnosis, and salary diagnosis) related to career thoughts?

$H2_0$: There is no relationship between participants' pre and post diagnosis career variables and their career thoughts

H2a: There is a relationship between participant's pre and post diagnosis career variables and their career thoughts.

RQ3: To what extent does the stages of breast cancer diagnosis participants occupy influence their career thoughts as measured by the Career Thoughts Inventory?

$H3_0$: There is no relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

$H3_a$: There is a relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

RQ4: What is the direction and strength of the relationship between the potential mediating factors (optimism and spirituality) and career thoughts of women with breast cancer?

$H4_0$: There is no relationship between the mediating factors (optimism and spirituality) and career thoughts of women with breast cancer.

H4a: There is a relationship between the mediating factors (optimism and spirituality) and career thoughts in women with breast cancer

Research Design

A quantitative survey design was used in this research. Four instruments were used in order to determine the relationship among dysfunctional career thoughts, optimism, and spirituality in women diagnosed with breast cancer. An IRB from the University of South Florida was obtained. In addition, permission from The Public Hospital Authority Nassau Bahamas that encompass the Oncology Unit along with Dr. Theodore Turnquest's office and the different wards, and Bahamas Cancer Society were obtained. Sister Sister Group and Dr. Lockley Munroe's Oncology Office in the Bahamas also provided approval.

Sample

In order to determine the appropriate sample size for a five-group ANOVA *F* test results, a G*Power instrumentation was used. Faul, Erdfelder, Buchner, and Lang (2009) noted the G*Power configurations indicate the research needs a total of 210 participants to achieve effect size of 0.3, an alpha of .05, and power of .95. The Bahamas is made up of 700 islands and cays (Donenberg et al., 2011). The sample size consisted of 212 women from the islands of the Bahamas diagnosed with breast cancer. Eligibility criteria included: (1) career age 18-65 years (Berla, Andrews & Berlam 1999), (2) Bahamian resident, (3) diagnosed with breast cancer for more than one year, and (4) any stage of breast cancer. Volunteers that meet these criteria were eligible regardless of their stage of breast cancer diagnosis and regardless of their employment status. The Bahamas was chosen as noted in Chapter 2 because breast cancer is the most prevalent of all type of cancers and the study is the first known study with dysfunctional career thoughts, optimism, and spirituality of Bahamian women. In addition, Donenberg et al. (2011)

stated the percentage of the BRCA1 gene is one of the highest recorded in any country studied to date.

One year and more survival rate for women diagnosed with breast cancer have been chosen because a 1-year and more women diagnosed with breast cancer are seen both on the Oncology Wards and in the breast cancer groups. The President of Sister Sister Breast Cancer Group in the Bahamas stated, "In order to maximize your total participation rate for your study you should start from more than 1-year post diagnosis. A combination of women diagnosed 1-year and more make up the support group" (A. Sweeting, personal communication, September, 10th, 2012). In addition Table 1 indicates women diagnosed 5-year or more yielded over 58.17% whereas 1-4 years yielded 41.82%. Although, 5-year diagnosed is more than1-4 year diagnosed with breast cancer, the latter Bahamian women still made up the significant amount for the present study.

The most current recorded survival rate done in the Grand Bahama was done in 1988-2002. The 3-year survival rate for breast cancer was 56.3%. However, our American counterparts have increased more than 90% for a five-year survival rate. In addition, women with localized breast cancer diagnosis have a survival rate of 99% and 84% if the cancer spread to other regional areas in the body (American Cancer Society, 2012). Therefore, women who have passed the 1-year survival rate with limited medical concerns may experience positive career thoughts and may continue with their career aspirations.

The islands of the Bahamas that participated were New Providence (*n*=176; 83.02%), Eleuthera (*n*=12; 5.66%), Grand Bahama (*n*=11; 5.91%), Abaco (*n*=10; 4.72%), and Andros (*n*=3; 1.4%; Table 2). More than 66.82% (*n*=141) reported being from

Caribbean descent, 25.14% (*n*=53) of Black/African American descent, and 8.06% (*n*=17). Table 3 displays a summary of the ethnicity of the women diagnosed with breast cancer. The sample age of Bahamian women ranged from ages 18-28 years (*n*=1; 0.47%), 29-39 years (*n*=11; 5.21 %), 40 – 51 years (*n*=84; 39.81%), 52-62 years (*n*=81; 38.39), and 63 - 65 years (*n*=34, 16.11%).

Table 3

Demographic of Participants

Variables	Level	*N*	*M or %*
Island of Residence in Bahamas			
	New Providence	176	83.02
	Eleuthera	12	5.66
	Grand Bahama	11	5.19
	Abaco	10	4.72
	Andros	3	1.42
*Age**			
	18-28	1	0.47
	29-39	11	5.21
	40-51	84	39.81
	52-62	81	38.39
	63+	34	16.11
*Ethnicity**			
	Caribbean	141	66.82
	White/Caucasian	17	8.06
	Black/African American	53	25.12
*Education**			
	Elementary/Junior	20	9.57
	High school graduate	80	33.28
	Attended College/University	94	44.98
	Other	15	7.18
*Marital Status**			
	Married	110	52.13
	Not Married	39	18.46
	Divorced	36	17.06

Table 3 (continued)

Demographic of Participants

Variables	Level	*N*	*M or %*
*Employment Status**			
	Employed	148	71.15
	Student	4	1.92
	Retired	38	18.27
	Volunteer	5	2.40
	Other	13	6.25
*Affiliation with Spiritual Group**			
	Yes	180	86.54
	No	28	13.46

*Missing Data

Ninety-four women indicated their highest education attended college/university (44.98%), eighty attended high school (33.28%), twenty women attended (9.57%), and other (*n*=15, 7.18%). Of the total population of married Bahamian women diagnosed with breast cancer 52.13% (*n*=110), women not married displayed 18.46% (*n*=39), and divorced included 17.06% (*n*=36). Individuals who were employed totaled 71.15% (*n*=148), retired 18.27% (*n*=38), other 6.25% (*n*=13), volunteer 2.40% (*n*=5), and student 1.92% (*n*=4). More than three-quarters of the women indicated affiliation with a spiritual group (*n*=180; 86.54%), and no affiliation to a spiritual group indicated (*n*=28, 13.46%) This information is displayed in Table 3.

The Breast Cancer history (Table 4) information consisted of the number of years diagnosed, stage diagnosed in, type of operation(s), treatment type, finished treatment,

remission status, and breast cancer support group (Table 4). Bahamian women years since being diagnosed indicated 1-2 years (*n*=57, 27.40%), 3-4 years (*n*=14.42%), and 5

Table 4

Breast Cancer History

Variables	Level	*N*	M or%
*Years Since Diagnosed**			
	1-2 years	57	27.40
	3-4 years	30	14.42
	5-or more years	121	58.17
*Stage at Diagnosis**			
	Stage 0	29	14.29
	Stage I	66	32.51
	Stage II	50	24.63
	Stage III	23	11.33
	Stage IV	20	9.85
	Don't Know	15	7.39
*Type of Operation**			
	No Surgery	8	3.81
	Lumpectomy	37	17.62
	Single Mastectomy	111	52.83
	Double Mastectomy	46	21.90
	Other	8	3.81
*Treatment Type**			
	No Treatment	29	13.81
	Radiation Therapy	40	19.05
	Chemotherapy	129	61.43
	Alternative Treatment	3	1.43
	Other	9	4.29
*Treatment Status**			
	Finished	152	73.43
	Not Finished	53	25.60
	N/A	2	0.97

Table 4 (continued)

Breast Cancer History

Variables	Level	*N*	M or%
*Disease Status**			
	Remission	125	59.81
	Not Remission	68	32.54
	Don't Know	16	7.66
*Breast Cancer Support Group**			
	Yes	103	49.28
	No	106	50.72

*Missing Data

or more years (*n*=121; 58.17%). The stage categories included stage 0 (*n*=29; 14.29%), stage I (*n*=66; 32.51), stage II (*n*=50; 24.63%), stage III (*n*=23; 11.33%), stage IV (*n*=20; 9.85%), and don't know (*n*=15; 7.39%). Bahamian women who had a single mastectomy accounted for about half of the women who participated (*n*=111; 52.83%), double mastectomy accounted for (*n*=46; 21.90%), a lumpectomy (*n*=37; 17.62), no surgery and other accounted for (*n*=8, 3.81%) each. The type of treatment women received consisted of chemotherapy treatment 61.43% (*n*=129), radiation treatment 19.05% (*n*=40), persons with no treatment accounted for 13.81% (*n*=29), and other treatments 4.29% (*n*=9). Women who had more than one treatment were not accounted under treatment type in Table 4. Women who stated they have finished treatment presented 73.43% (*n*=152) and 25.60% (*n*=53). Women who stated they were in remission had 59.81% (*n*=125), not in remission 32.54% (n=68), and persons who do not know accounted for 7.66% (*n*=16). Women who are a part of a breast cancer support group consist of 49.28% (*n*=103) and are not a part of a support group 50.72% (*n*=106).

Table 5

Employment History

Variables	Level	*N*	M or%
Pre-Diagnosis Variables			
*Employment Pre-Diagnosis**			
	Yes	186	87.73
	No	22	10.38
*Occupation Pre-Diagnosis**			
	Professional	92	47.42
	Non-Professional	31	15.98
	Service	57	29.38
	Other	14	7.22
*Salary/Income Pre-Diagnosis**			
	$0-$40,000	143	74.48
	$40,001-$80,000	35	18.23
	$80,001-$120,000	10	5.21
	$120,001-$160,000	2	1.04
	Over $160,001	2	1.04
Post-Diagnosis Variables			
*Employment Post-Diagnosis**			
	Yes	163	77.25
	No	48	22.75
*Occupation Post-Diagnosis**			
	Professional	80	47.34
	Non-Professional	33	19.53
	Service	44	26.04
	Other	11	6.51
*Salary/Income Post-Diagnosis**			
	$0-$40,000	129	76.79
	$40,001-$80,000	29	17.26
	$80,001-$120,000	9	5.36
	$120,001-$160,000	1	0.60
	Over $160,001	0	0.00

*Missing Data

The employment history information (Table 5) consists of pre and post diagnosis variables such as employment, occupation, and salary/income. Women who were employed pre-diagnosis accounted for 89.15% (*n*=186), post diagnosis 77.25% (*n*= 163), and those who were not employed pre-diagnosis accounted for 10.38% (*n*=22) and post diagnosis 22.75% (*n*=48). There were two employment data tabulated in this present study. However, the employment data pre and post diagnosis displayed in Table 5 was used to tabulate question 2. In the category of occupation pre and post diagnosis pre occupation before diagnosis presented professional women 47.42% (*n*=92), service women 29.38% (*n*=57), non-professional women 15.98% (*n*=31), and other 7.22% *(n*=14). For occupation post diagnosis professional women account for 47.34% (*n*=80), service women 26.04% (*n*=44), nonprofessional women 19.53% (*n*=33), and other women 6.51% (*n*=11). The women's salaries pre and post salary/income were also evaluated. Women who made $0-$40,000 both in pre and post diagnosis accounted for more than 70% each (pre=74.48%; n=143) and (post=76.79%; n=129), $40,001 -$80,000 (pre=18.23%; n=35) and (post=17.26%; n=29). The women at high end salary/income post and pre diagnosis accounted for about 6% - 7%.

The previous mentioned information presented the demographic information, breast cancer history, and employment history of women diagnosed with breast cancer in the Bahamas. However, some data were missing in each one of the areas except for island of residence in Bahamas.

Instruments

This study used four quantitative instruments. The total subscales are eight. Descriptions of the four quantitative instruments are as follows.

Demographic information (Appendix A). The demographic instrument follows the pattern of Buxton (2011) who studied posttraumatic growth in survivors of breast cancer. The instrument was refined to suit the present study population. The demographic information has three parts. The first part includes information such as country of residency, ethnic group, and levels of education, marital status, religion, and employment status (9 questions). The second part focuses on the breast cancer diagnosis date, the stage of the breast cancer, the treatment received, if any, remission status, and support group affiliations (9 questions). The third part has pre and post-diagnosis employment history that includes occupation, employment status, and annual salary/income (6 questions).

Career Thought Inventory (CTI). The Career Thought Inventory was developed by Sampson, Peterson, Lenz, Reardon and Saunders (1996) and measures career thoughts processing. The instrument consists of four subscales: CTI Total (48 questions), Decision Making Confusion (DMC; 14 questions), Commitment Anxiety (CA; 10 items), and External Conflict (EC; 5 questions; Sampson, Reardon, Peterson, & Lenz, 2004, p. 92). Sampson, Peterson, Lenz, Reardon, and Saunders (1996) states that "…19 items are not assigned to any of the construct scales…" (p. 52). The instrument consists of 48 items assessing the individual's level of agreement with each item on a four-point Likert scale from 0 = Strongly Disagree (SD) to 3 = Strongly Agree (SA). Some questions include, *I've tried to find a good occupation many times before, but I can't ever arrive at good decisions (*DMC), *My interests are always changing* (CA), and *The views of important people in my life interfere with choosing a field of study or occupation* (EC). A CTI has not been validated with a Bahamian population but it has been validated with appropriate

population of high school students, college students, and adults. Sampson, Peterson, Lenz, Reardon, and Saunders (1996) stated, "It is difficult to develop an instrument that reflects differences in life experience either between group cultures or within subcultures of specific groups… The CTI was designed to measure career thoughts that tend to be common across groups (p. 38)".

Test-retest reliability was reported by Sampson et al., (1994) administered to college students and high school students. The sample was 73 college students (65.8% females; 34.2 males) from Florida State University. The CTI was completed twice over a 4-week period (Samson et al., 1996). The reliabilities reported for each subscales from each tested groups were as follows: ". . . stability for CTI Total score was high (r =.86) for college student sample . . .coefficients of .82, .79, and .74 for DMC, CA, and EC, respectively. . .combining college high school subjects in correlations of .77 for CTI Total score, .77 for DMC, .75 for CA, and .63 for EC" (Sampson et al., 1996, p. 51). Adults also had individual intercorrelations among CTI total score and construct scale scores. The results were DMC = .94, CA = .92; and EC = .80. The CTI Total score is highly correlated (r=.89 – .94) with DMC for all groups. The CTI Total score and construct scales were measured with other decision making instruments such as *My Vocational Situation, Career Decision Scale, Career Decision Profile, Revised NEO Personality Inventory, and Evidence of Convergent Validity Scale*. Adults, college students and eleventh and twelfth grade students were used for the comparison of CTI Total and scale scores to the other instruments (Sampson et al., 1996). Results revealed, ". . . across all three groups (adults, college students, and high school students), CTI scales were consistently inversely correlated with positive constructs such as vocational

identity, certainty, and knowledge about occupations and training, and directly correlated with indecision" (Sampson, et al., 1996, p. 56).

The interpretation of the CTI and some potential interventions to assist in improving positive career thoughts are as follows (Table 6). The highest CTI scores for adults are between 59-144 and lowest scores are <14. The CTI total score is significant in order to know what interventions need to be done for each client. Special attention should also be noted on the different subscales to pinpoint where the dysfunctional thought lies.

Table 6

Level of Interpretation and Intervention Based on CTI Total Score for Adults

Level	Score(CTI)	Interpretation	Intervention
1.	<14	minimal number of dysfunctional Thoughts	Self-awareness review career thoughts.
2	15-36	moderate level of dysfunctional Thoughts	Career activities Booklet career thoughts completion
3.	37-58	highly dysfunctional career thoughts	Cognitive restructuring rehearsal and practice
4.	59-144	highly dysfunctional career career thoughts plus mental health concerns	Cognitive restructuring rehearsal and practice, progressive relaxation, guided imagery

Note: Sampson, J., Jr., Peterson, G., Lenz, J., Reardon, R., & Saunders, D. (1996b). *Career Thoughts Inventory: Professi`onal manual*. Odessa, FL: Psychological Assessment Resources (p 32-34)

Life Orientation Test – Revised (LOT-R; Appendix B).The Life Orientation Test – Revised was developed by Scheier, Carver and Bridges (1994), and measures one's optimism level. In addition to a plethora of studies using the Life Orientation Test (LOT) for psychological and physical well-being, Anderson (1996) "…concluded that the original LOT still is a viable instrument for assessing people's generalized sense of optimism (p. 719). The LOTR is an appropriate instrument to use in the present study because it has shown favorable results in many studies (Carver, & Antoni, 2004; Carver, Lehman, & Antoni, 2003; Carver, Pozo-Kaderman, Harris, Noriega, Scheier, & Robinson, ... & Clark, 1994; Carver, Pozo, Harris, Noriega, Scheier, Robinson, ... & Clark, 1993; Carver, Scheier, & Segerstrom, 2010; Carver, Smith, Antoni, Petronis, Weiss, & Derhagopian, 2005; Carver, Smith, Petronis, & Antoni, 2006) done with women diagnosed with breast cancer.

This revised instrument was based on the Life Orientation Test (LOT; Scheier & Carver, 1985). The LOT-R has ten items that measures two subscales—optimism and pessimism. This study focuses on the optimism subscale. There are three optimism questions, and four filter optimistic questions. The questions include (1) *It's easy for me to relax*; (2) *I enjoy my friends a lot*; (3) *It's important for me to keep busy*; and (4) *I don't get upset too easily*. Wimberly, Carver, and Antoni (2008) stated, ". . . responses were summed . . . such that higher scores represent greater optimism" (p. 61). The items have a 5-point Likert scale that ranges from *strongly agree a lot* to *strongly disagree a lot* (Herzberg, Glaesmer, & Hoyer, 2006). The LOT-R has been consistently used in different health settings with reliability (r = 0.95). Longitudinal studies showed a reliability of 0.86 while cross-sectional ranged from 0.74 (Scheier et al., 1994).

Cronbach's alpha score was .78. The test-retest reliability at 4 months was 0.68, 12 months – 0.60, 24 months – 0.56, and 28months – 0.79.

The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale (FACIT-Sp; Appendix C). The FACIT-Sp is a 12-item instrument used to measure spirituality of individuals diagnosed with cancer and chronic illnesses (Bredle et al., 2011). The FACIT-Sp was a revision of the original FACIT created by Cella (1997), which was used for individuals diagnosed with cancer and especially breast cancer. The self-administrated instrument has two subscales that include meaning/peace, and faith. Some statements include "*I have reason for living",* "*I feel peaceful*", and "*I find comfort in my faith or spiritual beliefs*". The measurement of one's spiritual well-being in the past week is measured on a 5-point likert-type scale ranging from (0 = 'not at all'; 4 = 'very much'; Edmondson, Park, Blank, Fenster, & Mills, 2008). Bredle (2011) expressed ". . . the internal reliability of the subscales was good (α = 0.81–0.88)" (p. 81). Validation to other instruments such as the Health Related Quality of Life (HRQOL), FACT-G, and different domains of Profile of Mood States (POMS) were tested with the total score of FACT-Sp. The results revealed a strong correlation (r = 0.58; Bredle, 2011). Another instrument was examined for this study was the Spiritual Involvement and Beliefs Scale-Revised (SIBS-R) used by Mobley (2011) on a sample of 647 Bahamian women. This was not used because only less than 3% of breast cancer survivors were surveyed.

Procedures

Recruitment. The recruitment for participants from the Bahamas was done through a variety of methods including recruitment flyers, recruitment letters, internet solicitation, breast cancer monthly meetings, radio talk show, emails, and television

advertisements. The recruitment flyers along with a letter requesting participation were emailed to different directors or presidents of the breast cancer support groups, and coordinators of Dr. Munroe and Dr. Turnquest's offices. Recruitment flyers were also posted in the Oncology Unit and wards of the Princess Margaret Hospital, and Cancer Societies throughout the Bahamas.

The affiliated presidents or coordinators and directors posted the recruitment flyers on the poster board of the groups or post them on their websites or emailed the participants the information. Also, the recruitment flyers were posted on the poster boards of the Bahamas Cancer Society in New Providence (capital of the Bahamas). In addition, the President of the Bahamas Cancer Society emailed the recruitment flyer and the approval letter to the presidents of the other Family Islands (other islands that make up the Bahamas), who also posted the recruitment flyers in the facility of the Cancer society. Also, flyers were posted in the oncology clinics (Public Hospital Authority), the wards in the hospitals, Dr. Munroe, and Dr. Turnquest's Office. The coordinator of the support groups emailed, mailed and distributed the recruitment flyer to all of the support group members. Not all of the 34 habited islands were used for the purpose of this present study. The cancer societies used were New Providence (capital), Andros, Eleuthera, Grand Bahama(second city), Abaco, and Exuma. The coordinators distributed the recruitment flyers during a support group meeting a few weeks before the actual data collection. Also, the recruitment letters were distributed via internet, and television advertisement. The local Bahamas television displayed the recruitment flyer on television for two days. This advertisement was free and, therefore, a recruitment flyer and approval letter from the Cancer Society was hand-delivered to the persons in charge of this

announcement section. They were asked to display this recruitment event on the television.

The Bahamas declared October as Breast Cancer Month therefore, the Principal Investigator was able to recruit participants via different radio talk shows such as Morning Blend with Dwight Strachan, Reality Check with Chrissy Love, G-Zone Health and Wellness with Dr. Dwight Marshall, Jeff Lloyd Show (Guardian Talk Radio) and ZNS morning talk show. These were the following recruitment procedures done in the Bahamas on the relationship of career thoughts, optimism and spirituality of breast cancer survivors.

Paper/Pencil. The majority (201=89.73%) of the surveys in the Bahamas area were administrated by paper/pencil administration and 10 (4.46%) were not usable because of the substantial number of missing items from the CTI instrument. The CTI instrument presented 48 question items and may have been too long for some participants to complete. The paper/pencil data collection procedure was done in two different ways.

First, the Bahamian breast cancer survivors were invited to a data collection meeting from the recruitment flyers and breast cancer meeting. Not all of the 34 habited islands of the Bahamas were used for the purpose of this present study. Only eight islands out of the thirty-four habited islands have a cancer society chapter. However, only six presidents after constant email requests and phone calls responded to the call to assist with this present study. Approximately thirty women attended the September monthly meeting held by The New Providence Breast Cancer Society (Sister Sister Group). Seventeen women (n=17; 8.01%) completed the surveys. During the November monthly meeting thirty five women from Sister Sister group attended the meeting and thirty (n =

30; 14.15 %) completed the survey, In Andros only three (*n*=3; 1.42%) women completed the survey at the support group meeting held in October 2012. Twelve women (*n*=12; 5.66%) completed the surveys in the October and November 2012 monthly meetings in Eleuthera. The participants from Grand Bahama completed eleven surveys (*n*=11; 5.19%) at the November monthly meeting and other activities held by the Cancer Society. The participants in Abaco completed ten (*n*=10; 4.72%) surveys in the month of January 2013. Participants from Exuma did not complete any of the surveys at the monthly meetings from September 2012 to January 2013. In addition a data collection meeting was called for November 6th, 2012 at Bible Truth Ministries but there were no participants who attended. This may have been due to the United States Election. The Bahamian people closely monitor and participant in the American elections from a distance.

During the meetings held at the different monthly support groups the following procedure was conducted. The coordinators or presidents of the support groups at these sites read a script (Appendix F) that welcomed the participants, the purpose of the study, the consent form, incentives, and the direction of completing the surveys. The consent forms were read by the participants and they were then collected and placed in an envelope. The participants were told that the proposed study is voluntary and they can withdraw at any time. All instruments were stapled together in a single packet for distribution and collection. The packets were presented as follows: the demographic sheet, CTI, LOT-R, and FACT-Sp. The stapled instruments were collected ensuring a number is located on the front of the instrument, placed in an envelope, and sealed.

After completing the survey, the participants were asked to complete a form to be entered into three different $50 raffle prizes for incentives. Participants were directed to write their names, addresses, and contact numbers on the forms provided. Each person who agreed to participate completed the forms (81; 38.10%). These were placed in another envelope, sealed and labeled incentives. Last, the participants were given a thank you note (Appendix H) along with a breast cancer support groups, breast cancer websites, and crisis center number. The Presidents from the different Cancer Societies on the family islands mailed the completed packets to the principal investigator.

Second, individuals on Oncology Unit and the different wards at Princess Margaret Hospital were approached by the nurses who asked them to participate in a study. The individuals, who said "yes", were asked to complete the various instruments in a quiet room allocated by the staff. Half of the participants from the present study completed the surveys from the Oncology Unit (*n*=76; 35.85%) and wards (*n*=30; 14.15%) from August 2012 to January 2013. The same procedure done by the breast cancer support groups above were adhered to.

Paper/pencil and online administration in a recent study has indicated the validity and reliability of this type of delivery. Chatters (2012) examined the effect of bullying prevention training on pre-service teachers. This researcher used two different groups: control groups and experimental groups. The control groups used online instrumentation three times during the course of the data collection. The experimental groups used paper/pencil and online instruments. The paper/pencil was given the same as the control group, however it added the online component by allowing the pre-service teachers to

complete a paper/pencil immediately following the intervention. There was no difference in results with the online version versus the paper/pencil administration.

Online. The minority of the surveys by Bahamian survivors were administrated online (*n*=23; 10.55%) and two were not usable because of the majority of missing items from the CTI instrument. The women were directed from the recruitment flyer or letter to a newly created email address by the principle investigator. This email address was used for the distribution of the online link to the instruments on surveymonkey, and a password to access the instruments. This second step was a requirement of the Psychological Assessment Resources (PAR). The number of participants who accessed the email address was eighty-two. The information to access surveymonkey was delivered to each person who visited the email address. Approval for the online version of the CTI was granted by Psychological Assessment Resources (PAR; Appendix I) because they possess the copyright for this instrument. The online survey was administrated via surveymonkey. Information on surveymonkey included the purpose of the proposed study, the consent form, the length of the study, the voluntary and withdrawal clause, the time it will take to complete the instruments, and the instruments. The demographic instrument was the first instrument that was presented followed by the Career Thoughts Inventory (CTI), Life Orientation Test – Revised (LOT-R), and the Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale (FACTS-Sp). The same order of the instruments as the paper/pencil administration was done.

After completing the instruments the participants were directed to a page that indicated eligibility for three $50.00 raffles. Participants who completed the online

version were directed back to the email address to submit their names and email addresses. Thirty five participants indicated they were interested in the raffle. Their email addresses and names have been included in the incentive envelope. Donations of the participants' affiliation with a support group were noted on the demographic sheet. If participants are not associated with any group, the donation will be sent to the Bahamas Cancer Society or American Cancer Society. The participants after completion of the instruments were directed to a thank you page, breast cancer support groups, a breast cancer website, and crisis center number.

Pilot Testing

The purpose of the pilot test was to determine the effectiveness of the instruments and any constructive feedback needed before the distribution to all of the other participants. With the permission of a breast cancer support group Sister Sister (Bahamas) president was emailed a recruitment flyer (**Appendix D**). The president located six individuals to complete the pilot tests. The president from Sister Sister (Bahamas) had a data collection meeting for the three women who completed the paper/pencil version of the questionnaires and three women who were emailed the online survey.

Online. For the online completion of pilot testing, the Bahamian women were directed from the recruitment flyer to an email address created by the principal investigator. A password to access the instruments were provided from this email. The online surveys were administrated via Surveymonkey. Information (**Appendix E)** on Surveymonkey included the purpose of the proposed study, the consent form, the length of the study, the voluntary and withdrawal clause, the time it will take to complete the

instruments, and the instruments. The demographic instrument was first introduced. The other instruments Career Thoughts Inventory (CTI), Life Orientation Test – Revised (LOT-R), and the Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale (FACTS-Sp) were also introduced. After completion of the instruments, the participants were directed to a thank you page, breast cancer support groups, a breast cancer website, and crisis center number. In addition, the women were directed to a 20-question forum noted and amended from Iraossi (2006; **Appendix F**) to assist in improving the instruments taken online and by paper/pencil. Also, they were directed to a page that explained the incentives. The participants were told if they wanted to enter their names for a chance to win $50 they must email the principal investigator at (dameslevette@yahoo.com). Three women indicated they will like to be a part of the raffle.

Paper/Pencil. The President of Sister Sister Breast Cancer group invited the Bahamian women to participate in the pilot testing. Three group members met at Dr. Munroe's office on August 2012 to take the paper/pencil version. The President of the support groups read the script (**Appendix G**) that welcomed the participants, the purpose of the study, the consent form and the direction of completing the surveys. The consent forms were read by the participants. They were collected and placed together in a separate envelope. The participants were told that the study is voluntary, and they can withdraw at any time. All instruments were stapled together in a single packet for distribution and collection. The packets were presented as follows: the demographic sheet, CTI, LOT-R, and FACT-Sp. The stapled instruments were collected, ensuring a number was located on the front of the each instrument and placed in a sealed envelope.

Last, the participants were given a thank you note, along with a breast cancer support group, breast cancer website, and crisis center number (**Appendix H).** In addition the women were presented with a 20-feedback question noted and amended from Iraossi (2006) to assist in improving the instruments taken via paper/pencil. The completed instruments were placed in envelopes and sealed. The women were provided with an incentive slip **(Appendix I)** that indicated if they were interested in winning $50.00 they must provide their name, address, telephone contact, email address, and cell phone. Three women indicated they will like to be a part of the raffle. These incentive forms were placed in a separate envelope and sealed.

Six questionnaires were completed for the purpose of the pilot test. The demographic attributes of the participants from the Bahamas are displayed in Appendix. The sample of the participants was entered into the Statistical Analysis Software (SAS) for analysis to determine the relationships of career thoughts, optimism, and spirituality of women diagnosed with breast cancer. In addition the feedback questions adopted by Iraossi (2006) were analyzed. The results for the Bahamian pilot test can be reviewed in the Appendix.

Data Analysis Plan for Pilot Test. The data analysis plan for the pilot testing incorporated the same format as the general analysis plan for the study. The instruments were read through and interpretations done. The overall data from the Bahamas were analyzed with the use of a SAS program. The collected data from the pilot testing sample was analyzed with analysis of variance (ANOVA), T-test, Pearson Product Moment Correlation Coefficient (PPMCC), and path analysis computations. The data has been presented in the Appendix. Analysis from the questions given to the pilot test

participants has been presented in the following section. The constructive feedback analysis has been presented in the Appendix for the Bahamian women diagnosed with breast cancer.

Results for Pilot Test. The pilot study was done with only six individuals from the Sister Sister group in the Bahamas. Therefore, statistical will not be seen in the results. However, the hypotheses were noted also in this pilot test.

Hypothesis 1.

$H1_0$: There is no relationship between participants' demographic characteristics and their career thoughts.

$H1_a$: There is a relationship between participants' demographic characteristics and their career thoughts.

The null hypothesis of no relationship was tested using the Pearson Product Moment Correlation Coefficient (for continuous variables) and a one-way analysis of variance (for categorical variables). The results of this analysis are presented in the Appendix indicate that the null hypothesis was accepted. Although age appears to be related positively to career thoughts (r=0.69) however, statistical significance (p=0.12) is not seen. Ethnicity (F=0.59, p=0.75), marital status (F=1.65, p=0.81), and education (F=0.80, p=0.40) were not statistical significant.

Hypothesis 2.

$H2_0$: There is no relationship between participants' pre-diagnosis career variables and their career thoughts

H2a: There is a relationship between participant's pre-diagnosis career variables and their career thoughts.

The null hypothesis of no relationship was tested using the T-Test and one-way analysis of variance (for categorical variables). The results of this analysis are presented in the Appendex that indicate the null hypothesis in the pilot test was accepted. The pre diagnosis variables for the pilot test such as occupation (F=0.34, p=0.81), and salary (F=0.50, p=0.56) are not related to career thoughts.

Hypothesis 3.

$H3_0$: There is no relationship between participants' post-diagnosis career variables and their career thoughts

H3a: There is a relationship between participant's post-diagnosis career variables and their career thoughts.

The null hypothesis of no relationship was tested using the T-Test and one-way analysis of variance (for categorical variables). The results of this analysis are presented in the Appendix that indicate the null hypothesis in the pilot test was accepted. The post diagnosis variables for the pilot test such as occupation (F=0.34, p=0.79), and salary (F=0.37, p= 0.37) are not related to career thoughts.

Hypothesis 4.

$H4_0$: There is no relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

$H4_a$: There is a relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion

(DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

The null hypothesis of no relationship was tested using the one-way analysis of variance (for categorical variables). The results of this analysis are presented in the Appendix that indicate the null hypothesis was accepted. Hypothesis 4 for this pilot test revealed the breast stage at which the women were diagnosed and the career thoughts subscales were not related to each other. The subscales were DMC (F=0.93, p=0.55), EC (F= 1.31, p=0.46), and CA (F=3.83, p=0.21).

Hypothesis 5.

$H5_0$: There is no relationship between the mediating factors (optimism and spirituality) and career thoughts of women with breast cancer.

H5a: There is a relationship between the mediating factors (optimism and spirituality) and career thoughts in women with breast cancer.

The null hypothesis of no relationship was tested using Pearson Product Moment Correlation Coefficient (for continuous variables) and a path analysis to determine mediation among the variables. The results of this analysis are presented in the Appendix indicate the null hypothesis was partially accepted. The results for hypothesis 5 appear to reveal some relationship between career thoughts and optimism (Figure 3.1). The r value was 0.31 but it was not statistically significant. In addition career thoughts appear to be related to spirituality (r=0.37) but again it was not statistically significant. On the other hand spirituality (r=-0.32) appears to show a negative relationship with optimism but it was not statistically significant (p=0.54). In addition, optimism in this pilot test was not

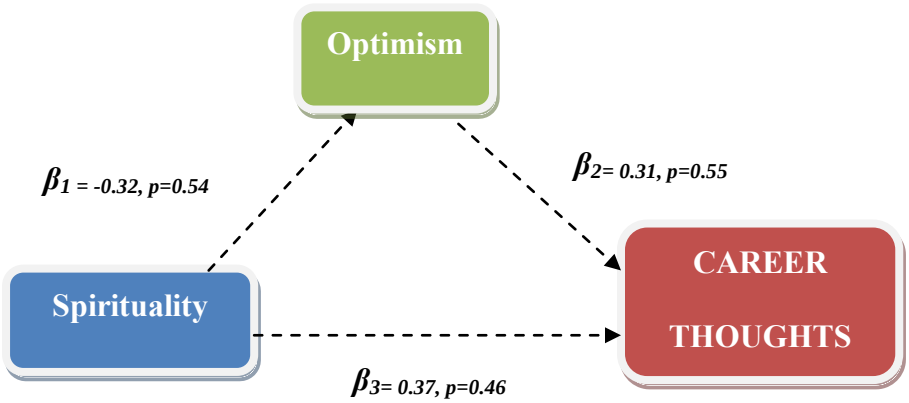

Figure 3.1. Pilot Test: Path analysis showing how optimism can mediate the relationship between spirituality and career thoughts

noted to be a mediator between spirituality and career thoughts because no statistical significance was noted among the three directions or variables.

Constructive Feedback. The purpose of the constructive feedback was to ascertain analysis to help improve the various questions, format, or correction in the instruments for this present study**.** The questions from Iraossi (2006) were adopted and revised to assist in developing constructive feedback questions. The constructive feedback questions from the Bahamas was analyzed together only questions 2 and 12 were analyzed separately and presented in Pilot Test Appendix. The overall time to complete the instruments was 16 minutes. The participants from the Bahamas answered 100% (Yes) to feeling comfortable, problems with instrument, and changes for instrument. They also indicated 100% to (No) for thinking the instruments were too long, language or words not understood and difficult questions. The other feedback questions indicated a percentage of 60% (Yes) and above for areas such as directions of survey, instructions after completion, compatibility of experience, diversity of questions, and

overlooked important issues. The Bahamian women thought the instrument was finding out information about breast cancer illness and their thoughts. Three of the pilot study participants believed the study was for research. Two participants indicated the study will be used to help other breast cancer survivors. One of the participants noted some grammatical mistakes. The overall result of the pilot study was noted. Modification of the instruments was made based on the outcome of the pilot test. Finally, from the information obtained from the presidents and the oncology unit in the Bahamas it will be more advantageous to use women diagnosed more than one year instead of five years and more. Therefore, an amendment was made.

Amendments. Misunderstanding about requesting permission to amplify the pool of potential participants has initiated an amendment for this present finding. Therefore, an amendment (**Appendix J)** was approved by IRB of University of South Florida on October 12th, 2012. An amendment was done because of a few reasons. First, after completing the pilot testing the majority of the presidents or coordinators, oncology unit in the Bahamas and Florida indicated it may be more advantageous to recruit women 1-year or more rather than 5-year or more. Therefore, the requirement from five-year to one-year diagnosed was made. Second, an amendment was done to increase the amount of participants in the Bahamas. The Bahamas has been declared October month as Breast Cancer Month, therefore, an amendment to recruit via radio talk shows were done. Therefore, recruitment was done in the Bahamas on radio talk shows such as Morning Blend with Dwight Strachan, Reality Check with Chrissy Love, G-Zone with Dr. Dwight Marshall, Jeff Lloyd Show (Guardian Talk Radio), and ZNS morning talk show. Finally the Principal Investigator will like to send recruitment letters to the University of South

Florida Counselor Education Students and of Counselor Education and Supervision Network (CESNET). The Counselor Education and Supervision Network (CESNET) distribution network of counselors has noted that the flyer originally created for recruitment was not sufficient for many reasons. First, the website does not allow attachments. Second the information presented on the flyer is not sufficient. Therefore, a new recruitment letter was created (**Appendix K**).

In addition to the reviews amendments, a change to the format of the original sample of Bahamian and Florida group was made. In the original proposed manuscript women from the Bahamas and Florida were recruited. In Florida, the recruitment flyers and letters were sent to Florida Counseling Association, National Career Development, Suncoast Mental Health Counseling Association, American Cancer Society, Bahamas Cancer Society, the University of South Florida counselor students, CESNET, Young and Young at Heart Support Group, and the Facing Our Risk Of Cancer Empowered (FORCE). These associations and breast cancer groups were sent recruitment flyers and letters on three occasions with three week intervals between September and November 31st, 2012. By the last week of November, the Florida group produced twenty-two women diagnosed with breast cancer and the Bahamian group produced one hundred and two women. This scenario was presented to my committee members who agreed to focus on the Bahamian participants instead. The following is the sample of the Bahamian group.

Data Analysis

The demographic information which includes the age, ethnic group, nationality, educational level**,** occupation, marital status, date of diagnosis, stage of cancer, and type

of treatment of the participants was entered into a SAS program. Descriptive statistical data was obtained that include mean, frequency, and standard deviations. Inferential statistical analysis such as ANOVA, T-test, Pearson Product Moment Correlation Coefficient (PPMCC), and Path Analysis were used to address the studies research questions and hypotheses. The overall data from the Bahamas was analyzed based on the different research questions and hypotheses in the following manner:

Analysis of variance (ANOVA), Pearson Product Moment Correlation Coefficient (PPMCC), multiple regression, and path analysis: Research Questions 1,4

RQ1: How are demographic characteristics (e.g., age, education, marital status, and ethnicity) related to career thoughts of women diagnosed with breast cancer?

$H1_0$: There is no relationship between participants' demographic characteristics and their career thoughts.

$H1_a$: There is a relationship between participants' demographic characteristics and their career thoughts.

RQ4: What is the direction and strength of the relationship between the potential mediating factors (optimism and spirituality) and career thoughts of women with breast cancer?

$H4_0$: There is no relationship between the mediating factors (optimism and spirituality) and career thoughts of women with breast cancer.

H4a: There is a relationship between the mediating factors (optimism and spirituality) and career thoughts in women with breast cancer.

Question 1 has various measurement scales (i.e., categorical and continuous), therefore several correlation analyses were used. Age and career thoughts are continuous variables while education, marital status, and ethnicity are categorical. The independent variables are age, education, marital status, and ethnicity and the career thought is the dependent variable. To measure the relationship between a categorical and a continuous variable (e.g., stage of breast cancer and CTI), a one-way ANOVA analysis was used. The marital variable was statistically significant (p=0.04); therefore a Tukey test was done to determine pair-wise comparisons of the means. To measure the relationship between a continuous dependent variable (i.e. age) and continuous independent variable (i.e. CTI) a Pearson Product Moment Correlation Coefficient (PPMCC) was done.

Glass and Hopkins (1996) denote that a PPMCC was conducted to determine the direction and strength of two variables. The degree is strong, low, or moderate. Also, the direction of the correlation between two variables can be either positive or negative. Also, research in behavioral science and education uses a linear approach. Glass and Hopkins (1996) notes, ". . . a perfect positive linear relationship (r=1.00) . . . a perfect negative relationship (r=-1.00)" (p. 105). The different scores will be obtained from the CTI Total. Cohen and Lea (2004) depict a high positive or negative degree is .7 – 1.00 which carries on from a standard by Cohen (1988) of .5 (large), .3 (moderate), and .1 (small).

In Question 4 to measure the relationship between a continuous dependent variable (i.e., optimism and spirituality) and continuous independent variable (i.e., CTI), a Pearson Product Moment Correlation Coefficient (PPMCC) was done. In addition to the PPMCC analysis a path analysis was one exploration path model that was

examined—to see how optimism mediates the relationship between spirituality and career thoughts. The researcher conducted an exploratory path analysis (Figure 3.2). Pett, Clayton, and Clarke (2010) stated path analysis is ". . . an extremely useful statistical technique that is commonly used to model and evaluate direct and indirect relationships among a set of predictor and outcome variables" (p. 329). Total Career Thoughts (CTI Total) was the outcome variable while the predictor variable was optimism. Separate simple and multiply linear regressions were conducted to determine the strength of mediation of optimism between spirituality and total career thoughts. The total standardization of the variables was done to determine the direction of the relationship of each variable and the values along with the p-value are indicated on the figure (3.2).

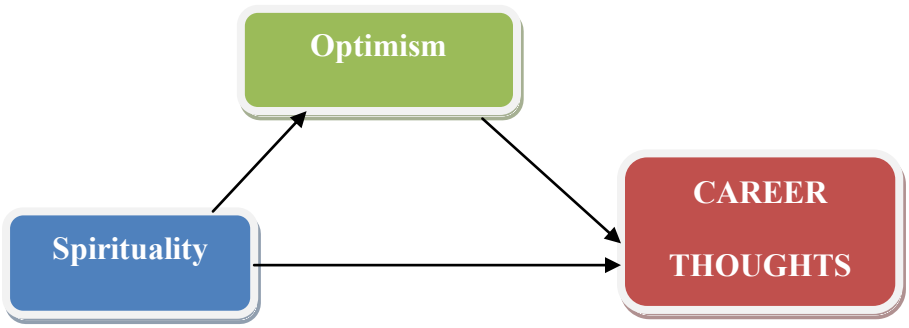

Figure 3.2 Potential path analysis showing how optimism mediates the relationship between spirituality and career thoughts.

Analysis of variance (ANOVA) and T-Test: Research questions 2, 3

RQ2: How are the pre and post diagnosis breast cancer variables (e.g., occupation diagnosis, employment status diagnosis, and salary diagnosis) related to career thoughts?

$H2_0$: There is no relationship between participants' pre and post diagnosis career variables and their career thoughts

H2a: There is a relationship between participant's pre and post diagnosis career variables and their career thoughts.

Question 2 also has various measurement scales (i.e., categorical and continuous), therefore several correlation analyses was used. Career thoughts are continuous variables while occupation pre-diagnosis, employment status, and salary post diagnosis, are categorical. The independent variable was the pre-diagnosis breast cancer variables and the career thoughts total score will be the dependent variables. To measure the relation between a categorical group that is pre-employment with two groups (Yes and No) and a continuous variable a T-Test analysis was done. On the other hand, to measure the relationship between occupation and salary pre variables with more than two groups a one-way ANOVA analysis was used. The pre-diagnosis employment variable was statistically significant (p=0.01) and therefore the comparisons of the means (Yes and No) were done.

Analysis of variance (ANOVA): Research Question 3

RQ3: To what extent does the stages of breast cancer diagnosis participants occupy influence their career thoughts as measured by the Career Thoughts Inventory?

$H3_0$: There is no relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

$H3_a$: There is a relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

Question 3 also has various measurement scales (i.e., categorical and continuous). Career thoughts are continuous variables while the stages are categorical. The independent variable was the stages of breast cancer while the Decision making Confusion (DMC), Conflict Anxiety (CA), and External Conflict (EC) are the dependent variables. To measure the impact between the stages of breast cancer and DMC, CA, and EA, a one-way ANOVA analysis was used with each of the subscales.

Chapter Four:

Results

In the following chapter, the results of the statistical analyses are presented in two parts. The first part presents the descriptive statistics and the second part presents the inferential statistics which were used to test the hypotheses. Data collected utilizing the Career Thoughts Inventory (CTI), Life Orientation Test Revised (LOT-R), and The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale (FACIT-Sp) are reviewed and each of the hypotheses discussed. The chapter concludes with a summary of the results.

Descriptive Statistics

Descriptive statistics related to the major dependent variables of the study are presented in Table 7.The mean for optimism as measured by LOTR was 28.82 (medium mean score; highest score for LOTR=50), and mean scores for spirituality by the FACT-SP were 23.31 for meaning/peace, 15.75 for faith, and 37.48 for total spirituality (high mean score; highest score for FACIT-SP = 48). The means for dysfunctional career thoughts measured by CTI were 28.82 (moderate level mean score; normal range score < 14) and the three subscales DMC (5.25), CA (4.13), and EC (1.97).

The skewness and kurtosis scales are computed. The dysfunctional career thoughts and the optimism scale (LOT-R) variables present with positively skewed distribution (Table 7) ranged from 0.98 -1.67. The spirituality scale with subscales of

mean/peace (-0.00), and total spirituality (-0.86) show a negatively skewed distribution. Faith demonstrates a positively skewed distribution of 1.67. Overall, the skewness for the majority of the variables presented within normal range. In addition all of the variables except faith (kurtosis=8.80) exhibited a normal range for the kurtosis.

Table 7

Descriptive Statistics for Variables

Variable	*N*	*Mean*	*SD*	Skew	Kurtosis
Optimism					
LOT-R	212	28.82	5.55	0.45	1.52
Spirituality (FACT-Sp)					
Mean/Peace	212	23.31	4.41	-0.00	2.30
Faith	212	15.75	4.45	1.67	8.80
Total spirituality	212	37.48	6.29	-0.86	2.73
Dysfunctional Career Thoughts					
DMC	212	5.25	6.25	1.40	1.89
CA	212	4.13	4.86	0.98	0.09
EC	212	1.97	2.43	1.13	0.54
CTI Total	212	28.82	5.55	1.10	0.38

Note. LOT-R = Life Orientation Test- Revised; *FACT-Sp* = The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale; DMC = Decision Making Confusion; CA = Conflict Anxiety; EC = external conflict; CTI = Career Thoughts Inventory.

Survey Questionnaire

The relationship of career thoughts, optimism, and spirituality of women diagnosed with breast cancer are explored using four surveys, the demographic survey, CTI, FACT-Sp, and LOTR scales. Participants completed the surveys that included eight subscales; CTI (4 subscales), FACTS-Sp (3 subscales) and optimism (1 subscale). This section discusses the descriptive statistical data of the three instruments and their questions, mean, and percentages of how the questions are answered.

The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale (FACIT-Sp). Per chapter 3, the FACIT-Sp is a 12 item scale with two subscales, mean/peace and faith. Sp2 (4.02), Sp3 (3.74), Sp5 (3.66) and Sp8 (3.43) make up the subscale for *meaning* (Table 8). The highest mean score from the *meaning* subscale is Sp2 (*I have a reason for living*). The majority (*n*=201, 94.81%) of the

Table 8

Reported Means and Standard Deviation of FACIT-Sp (spirituality) questions

Variable	*n*	Mean	Std Dev
Sp1	212	3.52	0.91[5b]
Sp2	212	4.02	0.42[a]
Sp3	212	3.74	0.79[a]
Sp4	210	3.26	1.10[b]
Sp5	212	3.66	0.97[a]
Sp6	210	3.50	1.10[b]
Sp7	211	3.53	1.06[b]
Sp8	212	3.43	1.11[a]
Sp9	212	3.75	0.94[c]
Sp10	211	3.82	0.78[c]
Sp11	212	3.79	0.90[c]
Sp12	211	3.80	0.81[c]

Note. Subscales: [a]Meaning; [b]Peace; [c]Faith;

Bahamian women indicated they have a reason for living despite the diagnosis of the "*C*" word. The lowest mean score from the *meaning* subscale is Sp8 (*My life lacks meaning and purpose*). Women with higher spirituality level would answer (*Not at all=0*) for this question. Approximately, 152 (71.70%), Bahamian women answered "*Not at all"* (Sp8=3.43). The *Peace* subscale consist of Sp1 (3.52), Sp4 (3.26), Sp6 (3.50), and Sp7 (3.53). Sp7 is a reverse order item. Therefore, the highest in the *peace* scale was Sp7 (*I feel peaceful*). This indicates the majority of the Bahamian women in 137 (64.93%) answered "*Very Much*". On the other hand, the lowest mean score for the *peace* subscale is Sp4 (*I have trouble feeling peace of mind*). Again, women with higher spirituality level would answer (*Not at all=0*) for this question. This indicate approximately half (*n*=128, 60.95%) of the Bahamian women do not have trouble feeling peace of mind. The last subscale *faith* is revealed in the questions Sp9 (3.75), Sp10 (3.82), Sp11 (3.79), and Sp12 (3.80). The highest mean score in *faith* is Sp10 (*I find strength in my faith or spiritual beliefs*) follows closely by Sp12 (*I know that whatever happens with my illness, things will be okay*).Approximately, 171 (81.04%) Bahamian women diagnosed with breast cancer indicate finding much strength in their faith or spiritual beliefs. This is not a surprising result because the study done by (Mobley, 2011) showed Bahamian women "…are highly spiritual and have belief in a higher power" (p.80).

Life Orientation Test – Revised (LOT-R). The LOT-R is an instrument created by Dr. Charles S. Carver (Carver et al., 1993) examined two subscales: optimism and pessimism. For the purpose of this study the principal investigator looked at the optimism

scale. A 5-point Likert scale (0-E: *I disagree a lot*; 1-D: *I disagree a little*: 2-C: *I neither agree not disagree;* 3-B: *I agree a little;* 4-A: *I agree a lot moderately*) was used to measure the optimism levels of Bahamian women diagnosed with breast cancer. The mean and standard deviation of the LOT-R scale is reported in Table 9. LOTR1 (3.70), LOTR 2 (3.08), LOTR4 (3.65), LOTR5 (3.84), LOTR6 (3.52), and LOTR10 (3.73) have higher mean scores than LOTR3 (2.29), LOTR 7(2.61) and LOTR 9 (2.19). The two highest mean score are LOTR5 (*I enjoy my friends a lot*), and LOTR10 (*Overall, I expect more good things to happen to me than bad*). This indicates about 160 (75.47%) Bahamian women diagnosed with breast cancer apparently expect the best in uncertain times like being diagnosed with breast cancer. The two lowest mean are LOTR3

Table 9

Reported Means and Standard Deviation of LOT-R (optimism) questions

Variable	*n*	Mean	Std Dev
LOTR1	212	3.70	0.81
LOTR2	212	3.08	1.33
LOTR3	211	2.29	1.49
LOTR4	212	3.65	0.97
LOTR5	212	3.84	0.68
LOTR6	212	3.52	0.94
LOTR7	212	2.61	1.39
LOTR8	212	2.71	1.39
LOTR9	212	2.19	1.63
LOTR10	212	3.73	0.93

(*If something can go wrong for me, it will*) and LOTR7 (*I hardly ever expect things to go my way*). Totally the answers to (*I disagree a lot and I disagree a little*) indicates approximately 100 (49.29%) women did not agree if something can go wrong for them, it will. Questions LOTR 3, LOTR7, and LOTR9 show lower mean scores because these questions appear to be worded negatively. In addition, for the other low mean score it reveals 136 (60.84%) Bahamian women rejected the statement that they hardly ever expect things to go their way.

Career Thought Inventory (CTI). The Career Thoughts Inventory has 48 items with four subscales; DMC, CA, EC, Total Career Thoughts. DMC consist of 14 questions), CA (9 questions), and EC (5 questions).Table 10 displays the mean and standard deviation scores of eight of the forty-eight CTI questions. The highest and lowest mean scores are chosen from each of the subscales of the instrument. The highest

Table 10

Reported Highest and Lowest Means and Standard Deviation of CTI subscales (Career Thoughts) questions

Variable	*n*	Mean	Std Dev
CTI1	211	0.50	0.85[a]
CTI5	212	0.31	0.56[a]
CTI22	212	0.50	0.66[b]
CTI35	212	0.36	0.56[b]
CTI14	212	0.46	0.67[c]
CTI46	212	0.34	0.60[c]
CTI4	212	0.26	0.55[d]
CTI37	212	0.93	0.99[d]

Note. Subscales: [a]DMC = Decision Making Confusion; [b]CA = Conflict Anxiety; [c]EC = external conflict; [d]TOTCTI = Total Career Thoughts Inventory

score mean (CTI37; 0.93) and the lowest score mean (CTI4; 0.26) are seen in the Total Career Thoughts Inventory Score. About 94 (44.34%) Bahamian women strongly disagree their age limits any type of occupational choice. Approximately, 165 (77.83%) women strongly disagree they will never understand themselves enough to make an occupational choice.

Test of Hypotheses

The hypnoses have several parts. Each part is addressed under each hypothesis.

Hypothesis 1.

$H1_0$: There is no relationship between participants' demographic characteristics and their career thoughts.

$H1_a$: There is a relationship between participants' demographic characteristics and their career thoughts.

The null hypothesis of no relationship was tested using the Pearson Product Moment Correlation Coefficient (for continuous variables) and a one-way analysis of variance (for categorical variables). The results of this analysis are presented in Table 11 indicate that the null hypothesis was partially rejected. This was partially rejected because age and marital status indicated a relationship with the participants' dysfunctional career thoughts. On the other hand, education and ethnicity indicate no relationship with career thoughts.

Age. A Pearson Product Moment Correlation Coefficient was performed. A negative relationship was seen between age and Total Career Thoughts (r =-0.19, p <0.01). The age of the women diagnosed with breast cancer had a significant, but weak to moderate, negative relationship with dysfunctional career

Table 11

Question 1– One-Way ANOVA

Questionnaire – Between Subjects

Group	***n***	***df***	***MS***	***F***	***Mean***	***Std Dev***
Marital	207	3	1502.26	3.15*	1.91	1.12
Error		204	476.70			
Education	205	3	850.76	1.77	2.50	0.77
Error		202	480.84			
Ethnicity	207	2	857.16	1.76	1.58	0.87
Error		205	487.94			

**significant at p<.01
*significant at p<0.05

thoughts. Younger Bahamian women experienced higher dysfunctional career thoughts.

Marital Status. A one way ANOVA procedure was performed. In Table 11 results reveal statistical significance for the marital status mean effect (F=3.15, P=0.03). However, after completing a Tukey test there are no significant difference data between any pair-wise categories of marital status (married, not married, divorced, & other) at significance alpha level of 0.05. The level of dysfunctional career thoughts was not affected by women's marital status (married, not married, divorced, & other).

Education. A one-way ANOVA was conducted between education and dysfunctional career thoughts. Results reveal the level of education (F=1.77, p=0.15) of the Bahamian women diagnosed with breast cancer show no statistically significant difference in terms of dysfunctional career thoughts. The level of dysfunctional career thoughts was not affected by women's education level.

Ethnicity. A one-way ANOVA was conducted between ethnicity and dysfunctional career thoughts. Results reveal ethnicity (F=1.76, p=0.18) of the Bahamian women diagnosed with breast cancer show no statistically significant difference in terms of dysfunctional career thoughts. The level of dysfunctional career thoughts was not affected by women's ethnicity.

Hypothesis 2.

H20: There is no relationship between participants' pre and post diagnosis career variables and their career thoughts

H2a: There is a relationship between participant's pre and post diagnosis career variables and their career thoughts.

The null hypothesis of no relationship was tested using the T-Test and one-way analysis of variance (for categorical variables). The results of this analysis are presented in Table 12 indicate the null hypothesis was partially rejected. This was partially rejected because there was a statistical significant difference between employment pre diagnosis and dysfunctional career thoughts. On the other hand, salary and occupation pre and post diagnosis show no statistically significant difference in terms of dysfunctional career thoughts.

Pre-Diagnosis Variables. The pre diagnosis breast cancer variables consist of employment, occupation, and salary pre diagnosis. An independent T-test was conducted to determine the relationship between employment pre-diagnosis and dysfunctional career thoughts. In Table 12, the results revealed a significant difference between women being employed versus women not employed pre-diagnosis (t=-2.64, df=206, p=0.01).

Table 12

Question 2 – T-Test and One-way ANOVA for Pre Diagnosis Variables

	Group	*N*	*Mean*	*Std Dev*	*Std Err*	*t value*	*Pr>t*
Pre Diagnosis (T-Test)							
Employment	Yes	186	19.16	20.63	1.51	-2.64	0.01*
	No	22	32.13	30.53	6.51		

	N	*Mean*	*SS*	*df*	*MS*	*Pr>F*
Pre Diagnosis (ANOVA)						
Occupation	190	19.44	1059.02	3	353.01	0.50
Error				187	442.80	
Salary	188	20.04	2184.57	2	1092.28	0.10
Error				186	451.27	

**significant at p<.01
*significant at p<0.05

Therefore, those Bahamian women who were not employed pre diagnosis experienced higher dysfunctional career thoughts than women who were employed pre diagnosis. However, an ANOVA procedure (Table 12) was conducted to determine a relationship among occupation (F=0.80, p = 0.50) and salary pre-diagnosis (F=2.42, p= 0.09) with total dysfunctional career thoughts. There was no statistical significant difference between dysfunctional career thoughts and pre-diagnosis occupation. The salary range and the Bahamian women's occupation pre diagnosis did not affect the women's dysfunctional career thoughts.

Post-Diagnosis Variables. The null hypothesis of no relationship was tested using the T-Test and one-way analysis of variance (for categorical variables). The results of this analysis are presented in Table 13 indicate the null hypothesis was not rejected

Table 13

Question 2 – T-Test and One-way ANOVA for Post Diagnosis Variables

	Group	*N*	*Mean*	*Std Dev*	*Std Err*	*t value*	*Pr>t*
Post Diagnosis (T-Test)							
Employment	Yes	163	20.76	21.56	1.70	0.23	0.30
	No	48	19.93	24.14	3.48		
–							
		N	*Mean*	*SS*	*df*	*MS*	*F*
Question 2 – T-Test and One-way ANOVA for Post Diagnosis Variables							
Post Diagnosis (ANOVA)							
Occupation		165	21.10	3961.80	4	990. 45	2.11
Error					161	468.66	
Salary		164	21.29	2040.86	2	1020.43	2.18
Error					162	467.99	

**significant at p<.01
*significant at p<0.05

The post diagnosis breast cancer variables consist of employment, occupation, and salary post diagnosis. An independent t-test was conducted to determine the relationship between employment post diagnosis and dysfunctional career thoughts. Employment post diagnosis (F= 2.11, p=0.30) show no statistically significant difference in terms of dysfunctional career thoughts. In addition, an ANOVA procedure was conducted to determine a relationship among occupation and salary post-diagnosis with total career thoughts. The results revealed no statistically significant difference between occupation (F=2.11, p=0.08) and salary (F= 2.18, p=0.12) post diagnosis with career thoughts.

Hypothesis 3.

$H3_0$: There is no relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making

Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

$H3_a$: There is a relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI.

The null hypothesis of no relationship was tested using the one-way analysis of variance (for categorical variables). The results of this analysis are presented in Table 14 indicate the null hypothesis was not rejected.

Table 14

Question 3 – One-Way ANOVA (With Stage)

Questionnaire – Between Subjects

Group	**N**	***df***	***Mean***	***MS***	***F***	***P***
TOTCTI	184	3	20.57	571.13	1.13	0.33
Error		181		504.82		
DMC	184	3	5.32	14.87	0.32	0.81
Error		181		45.95		
CA	184	3	4.12	36.84	1.50	0.22
Error		181		24.56		
EC	184	3	1.98	8.63	1.43	0.23
Error		181		6.02		

Note. DMC = Decision Making Confusion; CA = Conflict Anxiety; EC = external conflict; TOTCTI = Total Career Thoughts Inventory.

**significant at p<.01, *significant at p<0.05

Stage of Breast Cancer. An ANOVA procedure was conducted to determine the relationship between the different stages of breast cancer among total dysfunctional career thoughts and the subscales of total career thoughts. As mentioned in previous chapters, the subscales are decision making confusion (DMC), commitment anxiety (CA), and external conflict (EC). The participants' stage of breast cancer diagnosis, stage 0 and 1 (n=95; 46.80%) were grouped together from scores in Table 3 in chapter 3 and labeled stage I. Stage II (n=50; 24.63%) remained as it is. Stage III and IV (n=43; 21.18%) were grouped together and labeled stage III. The scores from Stage I, II, and III were ran against their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI. Results revealed the stage of breast cancer show no statistical significant difference in terms of Total Dysfunctional Career Thoughts (F=1.13, p=0.33). In addition, there was no statistically significant difference among the DMC (F=0.32, p=0.81), CA (F=1.50, p=0.22), and EC (F=1.43, p=0.23) and the three different stage level of breast cancer diagnosis.

Hypothesis 4.

$H4_0$: There is no relationship between the mediating factors (optimism and spirituality) and career thoughts of women with breast cancer.

H4a: There is a relationship between the mediating factors (optimism and spirituality) and career thoughts in women with breast cancer

The null hypothesis of no relationship was tested using Pearson Product Moment Correlation Coefficient (for continuous variables) and a path analysis to determine mediation among the variables. The results of this analysis are presented in Table 15 indicate the null hypothesis was partially rejected.

Table 15

Question 4 – Mediating Factors (Optimism and Spirituality)

Correlation Matrix for Predictor and Criterion Variables

	1	2	3
1. TOTCTI *(Career Thoughts)*	1.00		
2. LOT-R *(Optimism)*	0.07	1.00	
3. FACT-Sp *(Spirituality)*	-0.18***	0.28**	1.00

Note. LOT-R = Life Orientation Test- Revised; *FACT-Sp* = The Functional Assessment of Chronic Illness Therapy—Spiritual Well-Being Scale; TOTCTI = Total Career Thoughts Inventory.
***significant at p<.01
** significant at p<.0001
* significant at p<0.05

Optimism. Inspection of the matrix of Table 15 revealed a positive relationship between optimism and spirituality (r=0.28, p<0.0001). The optimism level of the women diagnosed with breast cancer had a significant, but weak to moderate, positive relationship with spirituality. This indicates as the optimism level of the women increases their spirituality level increases. Optimism (r=0.07, p =0.32) did not show a statistical significant difference with dysfunctional career thoughts. The level of optimism does not affect women's dysfunctional career thoughts

Spirituality. Inspection of the matrix of Table 15 revealed a negative relationship between spirituality (r=-0.18, p=0.01) and career thoughts. The spiritual level of the women diagnosed with breast cancer had a significant weak negative relationship with career thoughts. This indicates as the spiritual level of the women increases the career thoughts decreases.

Optimism Mediation. Separate simple linear regression was conducted to determine the direction of optimism on spirituality. A multiple linear regression was conducted to determine the strength and direction between spirituality and career thoughts and optimism and career thoughts. This relationship is shown in Figure 4.1. The direct effect of spirituality on career thoughts was -0.20 while the direct effect on spirituality on optimism was 0.28. There was not a total standardized indirect effect of spirituality on dysfunctional career thoughts through optimism because the direct effect from optimism to career thoughts is not statistically significant (p=0.07). This indicates optimism does not help to improve the relationship between spirituality and career thoughts. As such, it appears that optimism is not a mediate variable that would work together with spirituality to positively impact on dysfunctional career thoughts.

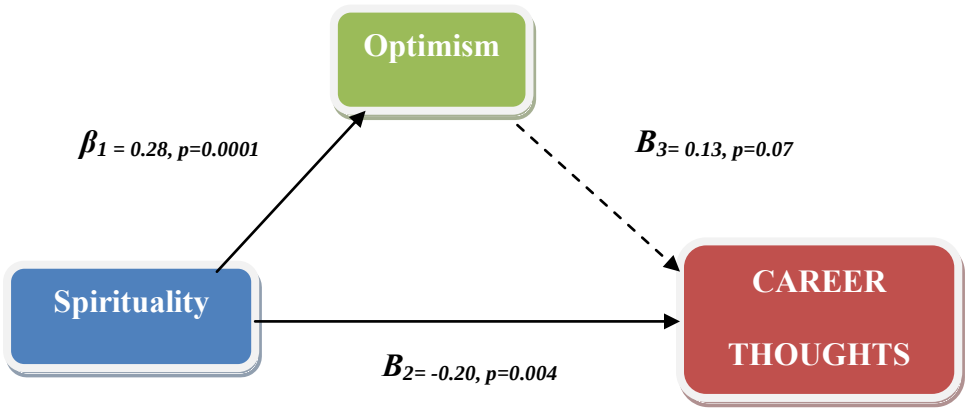

Figure 4.1 Path analysis showing optimism does not mediate the relationship between spirituality and career thoughts

Chapter 5

Discussion

This study examined the relationships among career thoughts, optimism, and spirituality in women diagnosed with breast cancer. This chapter presents the summary of the study that includes the overview of the problem, purpose and research questions, review of the methodology, and the major findings. This chapter concludes with findings related to the literature, limitations, and recommendations for further research.

Summary of the Results

The Bahamas has a high incidence of breast cancer rate along with a high incident BRCA1 and BRCA2 gene (Donenberg et al, 2011). The BRCA1 and BRCA2 gene in The Bahamas is considered the highest recorded rate in the world (Donenberg et al, 2011). Research has demonstrated that women diagnosed with breast cancer have returned to work and continues their careers post diagnosis (Main et al., 2005; Maunsell et al., 2004; Mohammad, 2011). However, the dysfunctional career thoughts variable has not been examined with any chronic illness and more specifically with breast cancer survivors (G. Peterson, personal communication, February 10, 2012). In addition, optimism (Buxton, 2011) and spirituality (Rowe & Allen, 2004) variables have been studied continuously with breast cancer survivors but have not been used in conjunction with the dysfunctional career thoughts variable and more specifically with Bahamian women.

Therefore, the purpose of this research is to explore the relationship with career thoughts of women diagnosed with breast cancer in the Bahamas. Also, this present study examined how optimism mediates the relationship between spirituality and career thoughts.

Dysfunctional career thoughts were examined in several different ways. First they were examined in relations to demographic characteristics such as age, education, marital status, and ethnicity. Second, dysfunctional career thoughts were compared with pre and post diagnosis of breast cancer variables such as occupation, employment status, and salary. Third, the subscales of the career thought (Decision Making Confusion [CMI], Commitment Anxiety [CA], External Conflict [EC] were examined in relation with the stage of breast cancer. Fourth, dysfunctional career thoughts of women diagnosed with breast cancer were correlated with potential mediating factors (optimism and spirituality). Finally, this study explored how optimism mediate the relationship between spirituality and dysfunctional career thoughts.

Bahamian women who were diagnosed with breast cancer one year or more were recruited from breast cancer support groups, an Oncology Unit, and hospitals across the Bahamas. Women from Grand Bahama, Eleuthera, Abaco, Andros, and New Providence participated and completed four instruments. These four instruments consisted of a demographic survey (breast cancer and employment history), CTI (dysfunctional career thoughts scale), LOTR (optimism scale), and FACT-Sp (spirituality scale).

Results were as follows. First, age was significant factors related to dysfunctional career thoughts. As the age of the women decreases the dysfunctional career thoughts increases. Marital status was also statistically significance. However, after completing a

Tukey test there was no statistical significant difference between any pair wise categories of marital status and dysfunctional career thoughts. This means the items under marital status such as married, not-married, divorced or other did not produce a difference among each other. The other demographic characteristics, such as ethnicity and education show no statistically significant difference in terms of dysfunctional career thoughts.

Second, the pre-diagnosis variables were examined in relation to dysfunctional career thoughts. Results indicated a statistical significant difference between women who were employed pre-diagnosis versus women who were not employed pre-diagnosis relative to dysfunctional career thoughts. This indicates women who were not employed have a higher dysfunctional career thoughts score overall. The other pre-diagnosis variables such as occupation and salary were not correlated at a statistically significant level with dysfunctional career thoughts. Third, the post diagnosis variables such as employment, occupation, and salary revealed no statistically significant correlation with total dysfunctional career thoughts.

Fourth, the stage of breast cancer show no statistically significant difference in terms of decision making confusion (DMC), commitment anxiety (CA), and external conflict (EC). Fifth, optimism levels of women diagnosed with breast cancer in the Bahamas revealed a positive weak to moderate relationship with spirituality. As the optimism level of the women increases their spirituality level also increases. On the other hand, comparison between spirituality and career thoughts revealed a significant though weak negative relationship. This indicates as the spiritual level of the women increases the dysfunctional career thoughts decreases. Last, a path analysis revealed optimism was not a mediating variable that would work together with spirituality to affect career

thoughts. These were the results of this study with Bahamian women diagnosed with breast cancer.

Findings Related to the Literature

This section discusses the interpretation of each hypothesis and research question in comparison to previous literature. Although, previous Bahamian studies focused on various aspects of breast cancer such as beliefs and attitudes of breast cancer (Mackey, 2001), breast self-examination practices (Dean, 1985), knowledge, attitude, and spirituality (Mobley, 2011), there are no known studies regarding dysfunctional career thoughts of Bahamian women diagnosed with breast cancer. Therefore, the findings that are related to the literature in this session are discussed in two parts these are (1) with dysfunctional career thoughts studies and (2) other studies that have used breast cancer participants.

Discussion. The discussion will follow the series of the hypotheses. Hypothesis 1 states that, there is a relationship between participants' demographic characteristics and their career thoughts. The demographic characteristics that have been compared to the dysfunctional career thoughts for this hypothesis include age, education, ethnicity, and marital status. The null hypothesis was partially rejected. This was partially rejected because age and marital status indicated a relationship with the participants' dysfunctional career thoughts. On the other hand, education and ethnicity show no statistically significant difference with dysfunctional career thoughts. As indicated in chapter 3, Dr. Peterson one of the founders of the CTI instrument that measures dysfunctional career thoughts stated this instrument has not been studied with any other

type of chronic illness variable. Therefore, this study seeks to compare different studies in relationship to other dependent variables.

Age. The results of this study research revealed an inverse relationship between age and Total Dysfunctional Career Thoughts. The age of the women diagnosed with breast cancer had a significant, but weak to moderate, negative relationship with dysfunctional career thoughts. This result indicates that as the age of the woman decreases the dysfunctional career thoughts increase.

The results of this present study are similar to other studies found in the literature with women diagnosed with breast cancer in that as age decreases other variables often increase. Similar research have shown higher levels of different variables such as fear of cancer recurrence (Mobley, 2011; Thewes, Butow, Bell, Beith, Stuart-Harris, Grossi, ... & Dalley, 2012; Ziner, Sledge, Bell, Johns, Miller, & Champion, 2012), mental and emotional fatigue (Banthia, Malcarne, Ko, Varni & Sadler, 2009), and post traumatic growth (Wenzel, Fairclough, Brady, Cella, Garrett, Kluhsman, ... & Marcus, 2000) with age. Current findings reveal that as dysfunctional career thoughts increase the age of the women diagnosed with breast cancer decreases.

Similar findings with age were also seen in a study done by Thewes et al. (2012). The purpose of this study was to explore the relationship of fear of cancer occurrence with younger women diagnosed with breast cancer. The sample consisted of 218 Australia women who were diagnosed with stage 0-2 breast cancer after one year. Thewes et al. (2012) showed 64-76% of the younger women have experienced the highest level of fear of cancer recurrence (FCR) compared to older women diagnosed with breast cancer. In addition the fear of cancer recurrence increased by 9.9 points for

women who had more unscheduled visits to the doctor than those who did not. Many reasons may be seen for the inverse relationship of age and dysfunctional career thoughts however the reasons are not provided in this present study. However, Thewes et al. (2012) have demonstrated such reasons for the increase of the fear of cancer recurrence with younger women diagnosed with breast cancer. Thewes et al. (2012) suggested younger women experience "…less psychological resilience, greater caregiver and financial responsibilities, and fewer co-morbid health conditions compared with older patients may all play a role" (p. 2652). Bahamian and younger women internationally may have higher levels of dysfunctional career thoughts, fear of occurrence, depression, mental and emotional fatigue because these women may be viewed as having more to lose in terms of motherhood, employment, finances, dreams and aspirations.

In addition, although a Bahamian study, Mobley (2011) revealed a relationship with age and breast cancer screening practices, the direction was different compared to the present study. The purpose of this study was to examine age, income, knowledge, and spirituality as predictors of breast screening practices in Bahamian women. Although, only 2.8% of the 662 Bahamian surveyed were diagnosed with breast cancer, this is one of the only known Bahamian study that was similar to the current findings in terms of relationship with age and spirituality. Results revealed a positive significance with age (r=.139, p< .01) and spirituality (r=.502, p<.01) with breast screening practices of Bahamian women. This means as their age and spirituality increase so does their breast screening practices. One limitation in this study is that the researcher only used the capital of the Bahamas, and did not screen other islands of the Bahamas. The breast screening practices from the different islands may have yielded different results with age,

income, knowledge, and spirituality with breast screening practices. However, the strength of this study in relation to the present study is that although a small breast cancer sample was used it was a Bahamian sample.

Age, Dysfunctional Career and Intrusive Thoughts. Although dysfunctional career thoughts have not been studied with a breast cancer population and more specifically Bahamian women, Wenzel et al. (2000) have examined younger women and intrusive thoughts related to the cancer. Intrusive thoughts are defined as "… a warning sign for identifying those breast cancer patients who are at greater risk from prolonged psychological distress" (Matsuoka et al., 2002, p. 118) .Three hundred and four younger women under the age of fifty who were diagnosed with breast cancer experienced higher levels of intrusive thoughts (impact of event scale-intrusion; IES-1=0.18, p=0.028), and depressive symptoms (Center for Epidemiologic Studies–Depression Scale; CES-D = 0.32, p=0.037) than women over fifty years of age. This indicates younger women experience higher levels of intrusive thoughts with higher level of depressive symptoms. In addition, statistical relationship was noted for younger women with worsen quality of life with breast cancer specific concerns (p= 0.022), and well-being (p=0.0002; Wenzel et al., 2000).

Slatten (1999) had an opposite finding to the current study. Although, dated, this study has examined age, self-appraised problem solving and dysfunctional career thoughts with substance abusers. Contrary to the present research Slatten (1999) revealed substance abusers' commitment anxiety level and external conflict that are components of the dysfunctional career thoughts were not statistically correlated with age (p>0.05).

This finding indicates that age was not related to the substance abusers' self-appraised problems.

An explanation for age being inversely related to dysfunctional career thoughts of women diagnosed can be related by examining one of the subscales called decision making confusion and the issue of irrational thoughts. Thewes et al. (2012) stated younger women experience higher levels of fear of recurrence because of more financial and caregiver responsibilities. This may be seen with younger Bahamian women diagnosed with breast cancer with higher levels of dysfunctional career thoughts. The decision to continue, discontinue or place their careers on hold may depend on the severity of the treatment of breast cancer and on the financial responsibilities. Financial responsibilities for treatment and everyday items may need more intense decision making. Irrational thoughts of career decision may play a role because sometimes individuals may view cancer as a death sentence, and may make the decision to give up every aspect of their lives especially career development. The present research has added to the numerous studies that illustrate dysfunctional career thoughts, fear of reoccurrence, mental and emotional fatigue increase as the age of the women has decreased.

Education. The level of dysfunctional career thoughts of Bahamian women diagnosed with breast cancer was not statisticallycorrelated to the level of education of the women. Conflicting findings in the literature have shown relationship between education and different independent variables. Wimberley (2008) has shown a relationship with optimism and education level, education level and lower risk of breast cancer (Spadea et al., 2009), and post traumatic growth and education (Buxton, 2011). However, Spadea et al. (2009) found non-significant relationship with education and

breast cancer risk, but this same study showed a correlation with higher educational levels and lower breast cancer risk. Similar findings also state there was no relationship between level of education and level of dysfunctional career thoughts. Approximately 35.8% of 22, 433 individuals (7,771 women) were surveyed to determine the relationship between their educational level and cancer risk variable. This survey was done over a period of 5-years with an Italian population. Results were similar with the present findings indicating non-significance correlation between educational level and cancer risk. However, after some factors were controlled, Spadea et al. (2009) found women with lower levels of education presented a lower risk of being diagnosed with breast cancer. In addition to the previously mentioned results Spadea et al. (2009) noted, "Women in the low-educational group were also increasingly less likely (from 15 to 50%) to be diagnosed with in-situ breast cancer, compared with higher educated women" (p. 171). This outcome is similar with the United States and United Kingdom (Schwartz et al., 2003) because more women who have lower educational level do not take advantage of the medical facilities needed to detect the earlier stage of breast cancer. This may due to lack of health insurance coverage that encourages annual check-ups and may detect the earlier stages such as in-situ breast cancer. Schwartz et al. (2003) also stated that working, non-poor, undereducated (WNP-UE) women present with advanced stage of breast cancer, again potentially due to the previous mentioned reason. This study also noted findings were consistent with Western countries.

Some Western countries have found that higher education is related to variables such as depression (Carver & Antoni, 2004), and post traumatic growth (Buxton, 2011). Carver and Antoni (2004) studied 230 women and found that being diagnosed with breast

cancer and found being diagnosis with breast cancer has some benefit. Benefit finding is defined as a positive experience in life, family and social relationships, self-control, career aspect, and spirituality after being diagnosed with cancer (Carver & Antoni, 2004). The cross sectional study eventually only examined 96 women four to seven years after diagnosis. Some results such as initial benefit finding were associated with higher age and higher stage of breast cancer. In addition, although contrary to the finding of the current research that education is not related with career thoughts, Carver and Antoni (2004) found lower education level was related to benefit finding. Also, although not the main focus of the study, the level of education was also related to lower depression of women diagnosed with breast cancer in the initial assessment. This finding illustrates the correlation of depression, education, and career thoughts.

Again, Carver and Antoni (2004) revealed a relationship between education and depression and other studies linked career thoughts to depression (Dagenhart, 2005; Saunders, 1998; Saunders, Peterson, Sampson, & Reardon, 2000; Strauser, Lustig, Cogdal, & Uruk, 2006; Walker, & Peterson, 2012) linked career thoughts to depression. Walker and Peterson (2012) demonstrated a linkage between a career variable such as career indecision and depression. A moderate effect size was shown to be related to depression. Although linkage was not made to education, career thoughts and depression in the present study other studies have found a correlation between these career variables and mental disorders. However, regarding the linkage to depression in other studies for women diagnosed with breast cancer, positive linkage with post traumatic growth has been seen with education in breast cancer survivors. Buxton (2011) noted post traumatic growth is positive changes after the diagnosis of breast cancer. This study examined 277

breast cancer survivors who were over the age of 18 years. The sample included 197 Canadian and 92 women from the United States. Buxton (2011) revealed lower level education was correlated to women with higher post-traumatic growth ($p<.001$). Depression and post traumatic growth may be on different ends of the spectrum in terms of good and poor mental health, however, these variables were statistical significant with the level of education of women diagnosed with breast cancer.

Marital Status. Marital status demonstrated a statistically statistical significance relationship ($F=3.15$, $p=0.03$) to dysfunctional career thoughts. However, after completing a Tukey test there are no significant difference data between any pair-wise categories of marital status at significance alpha level of 0.05 given the number of pair wise comparison. This means all of the items under marital status (married, divorced, not married, other) were not different in terms of their significance. Previous literature (Carver, Smith, Antoni, Petronis, & Weiss, 2005; Hershman et al., 2011; Wittenberg, Yutsis, Taylor, Giese-Davis, Bliss-Isberg, Star, & Spiegel, 2010) revealed an association with marital status and another variable similar to the current finding of Bahamian women diagnosed with breast cancer. Wittenburg et al. (2010) conducted a study that examined the marital status of breast cancer survivors who were diagnosed early called sojourners and trained breast cancer survivors called navigators. After completing a 6 and 12 month assessment, these sojourners and navigators who were married were both found to have a lesser depressive symptom than single/not married. Although, sojourner ($p=0.01$) and navigators ($p=0.02$) single women were associated with depressive symptoms, the results yielded worsened depressive symptoms than married women. Also, Wittenburg et al. (2010) indicated married/partnered sojourners were seen to have

improved their emotional well-being (p=0.008) as a breast cancer survivor than single/not married women. Although the positive vibes of the findings (improved emotional well-being and lesser depressive symptoms) of Wittenburg et al. (2010) was different to the current finding where dysfunctional career thought (negative vibe) was related to marital status both were related in some way. Another study done by Carver et al. (2005) also noted a correlation with partnered relationships and depression of women diagnosed with breast cancer. A surprising result noted in this study (Carver et al., 2005) was that partnered relationships were related to less depressive symptoms (p<.001), less mood disturbance (p<.02), and less social disruption (p=.002). This study also revealed one's marital status was positively correlated with one's subjective well-being (p<.001; Carver et al., 2005). Although, the variables for each one of these studies were different, being married seems to have positively impacted the life of women diagnosed with breast cancer.

Ethnicity. The dysfunctional career thoughts of Bahamian women diagnosed with breast cancer were not correlated with ethnicity (F=1.76, p=0.18). In order to examine how ethnicity plays a role in this study, we will describe the ethnicity of the general population. The ethnicity of the Bahamian women in the present study is somewhat similar to the make-up of the present study. Central Intelligence Agency (2013) stated the Bahamas has an ethnicity 85% black, 12% white, and 3% Asian and Hispanic. The ethnicity of the present study is Caribbean/Black (91.94%) and White/Caucasian (8.06%). The majority of White Bahamians in this study were from Abaco.

Race and ethnicity have shown different variation in American population (Ma &

Jemal, 2013). However, ethnicity is another variable that has been examined in a plethora of studies (Bradley, Nemark, & Schenk, 2007; Carver et al., 2005; Lewis et al. 2012) and

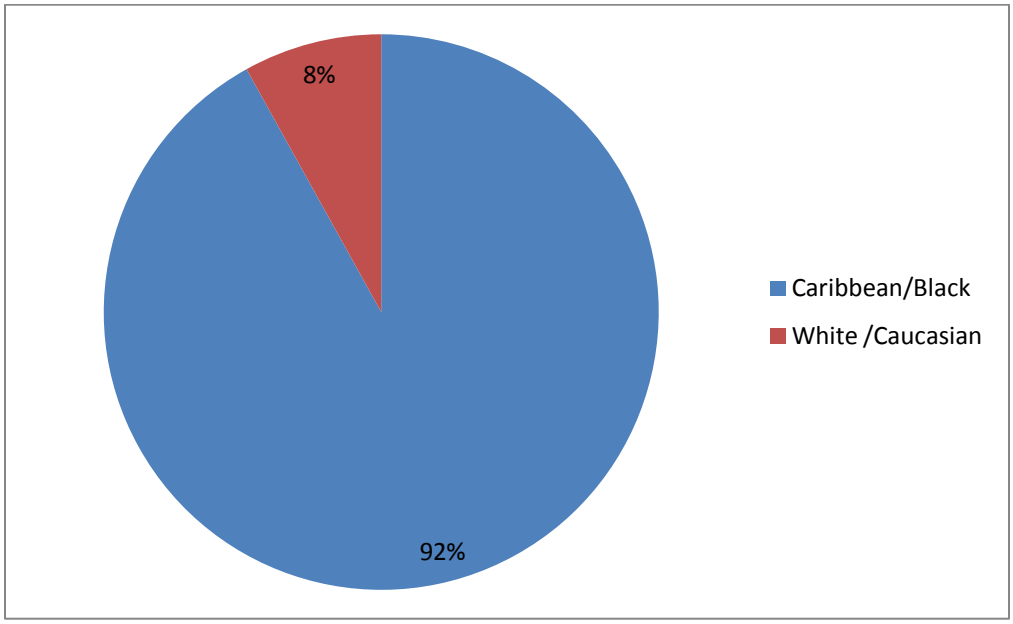

Figure 5.1

Ethnicity of Bahamian Women Diagnosed with Breast Cancer

breast cancer participants. Previous literature with ethnicity, other variables, and breast cancer participants demonstrated opposite results to the present study findings. Carver et al. (2005) revealed ethnicity was associated with follow-up depression and social disruption with Hispanic and Non-Hispanic Whites generating higher scores of these variables (Carver et al., 2005). In addition, the breast cancer survivors after surgery experienced less depression, less social disruption, and less mood disruption.

Bradley, Neumark, Bednarek, and Schenk (2005) and Bradley, Nemark, Luo and Schenk (2007) conducted two longitudinal studies of women diagnosed with breast

cancer and its effect on ethnicity and probability of employment. Bradley, Nemark, Bednarek and Schenk (2005) examined the effects of how employment has affected the lives of women with early stage breast cancer and their findings were not the same as those of the present finding. Bradley, Nemark, Bednarek and Schenk (2005) found race/ethnicity was statistically related to the probability of employment (-.0.12, p=0.01). African American breast cancer survivors were found to have negative effects when employed. This was found during the second interview of the study. In addition African American women were more likely to be unemployed 6 months following the diagnosis of breast cancer than other races. In addition, Bradley, Nemark, Bednarek and Schenk (2005) stated White Americans with breast cancer compared to a control group of White Americans were also seen to be less likely to be employed 6 months post diagnosis.

In comparison to Bradley, Nemark, Bednarek and Schenk (2005), Bradley, Nemark, Luo and Schenk (2007) found, "…relative to White women, breast cancer's influence on the transition from employment to non-employment appeared to be twice as strong for previously employed African American women, but the reason for this difference was unclear…" (p. 49). Therefore, contrary to the findings that among Bahamian women ethnicity is not associated with dysfunctional career thoughts of women diagnosed with breast cancer other studies have found some statistical significant difference with another career variable such as employment.

Dysfunctional Career Thoughts. Dysfunctional Career Thoughts have been examined with ethnicity in non-breast cancer survivors' studies. Osborn, Howard and Leierer (2007) investigated the race and ethnicity of college freshmen with their scores of dysfunctional career thoughts. Although, the demographics used 158 college freshmen is

quite different from the Bahamian women diagnosed with breast cancer, the findings were similar. In that Osborn, Howard and Leierer (2007) revealed a non-statistical difference to dysfunctional career thoughts and ethnicity with 117 college freshmen women. Osborn, Howard and Leierer (2007) also examined the relationship among course outcome and race/ethnicity that showed no statistical significant difference with each other. These students were in a six week Career Development Course and their dysfunctional career thoughts were examined pre and post assignment. Although, the demographics were quite different from the present study, the findings of ethnicity and dysfunctional career thoughts being not statistical significant were similar.

Hypothesis 2. Hypothesis two states there is a relationship between participant's pre and post diagnosis career variables and their career thoughts. The three pre and post diagnosis breast cancer variables included employment, occupation, and salary. The following section will combine the discussion for pre and post diagnosis variables.

Pre/Post Employment. Partial association with one of the pre-diagnostic variable (pre-employment) was seen to be related to career thoughts. The present findings revealed a statistical relationship between pre-employment and career thoughts ($p<0.01$). Bahamian women who were employed pre-diagnosis was ($n=186$; 87.73%) and not employed was (n=22; 10.38%; Figure 5.2). The means of the two groups (women employed versus women not employed) were examined. Bahamian women who were not employed showed a higher dysfunctional career thoughts than the women who were employed pre diagnosis. Again no studies to date were done with dysfunctional career thoughts and pre-diagnostic breast cancer variable such as pre-diagnosis employment. Also, there was no significant correlation between employment ($F= 2.11$, $p=0.30$) post

diagnosis and dysfunctional career thoughts. Therefore, we will examine studies done with pre-and post-diagnostic breast cancer variables with women diagnosed with breast cancer.

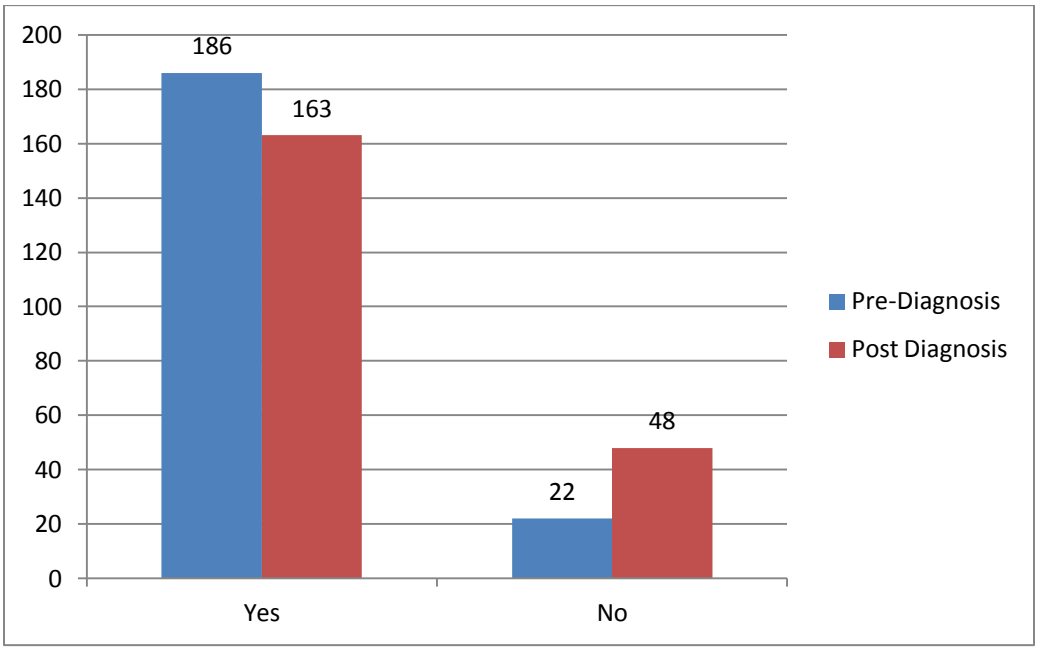

Figure 5.2

Employment and Non Employment Pre and Post Diagnosis of Breast Cancer

National and International breast cancer studies (Ell, Xie, Wells, Nedjat-Haiem, Lee, & Vourlekis, 2007; Sharp, & Timmons, 2011) are somewhat consistent partially with the present findings and revealed relationships with other variables. Ell et al. (2007) studied four hundred and eighty-seven Hispanic low income women diagnosed with breast cancer that examined the economic stress on women diagnosed with breast cancer and gynecological cancer. Forty-eight point five percent (48.5%) were women diagnosed

with breast cancer. Ell et al. (2007) revealed women who were unemployed were more likely to have more major depression symptoms than those who were employed. This finding is similar to the present finding that found women who were unemployed experienced higher levels of dysfunctional career thoughts similar to Ell et al. (2007) that found women who were unemployed at diagnosis experienced higher depressive symptoms. The variables (depressive symptoms and dysfunctional career thoughts) are different, but the women from both studies may have some negative thought process be it career or mental distortions.

The hypothesis for this question showed a relationship with pre-employment before diagnosis, the present finding was consistent with previous research (Sharp & Timmons, 2011: Bradley et al., 2007; Bradley, Neumark, Bednarek, & Schenk, 2005). The present finding revealed Bahamian women were employed pre-diagnosis (Figure 5.2) at a higher percentage (87.73%) than women post diagnosis (77.25%). Also, Sharp and Timmons (2011) indicated out of the two hundred and forty-six women diagnosed with breast cancer about 1/3 between the ages of 31-40 years had decreased their employment post diagnosis. The Bahamian women were not asked to state the reason for not being employed after the diagnosis of breast cancer but it may be due to a combination of many medical, social, and financial reasons. Bradley, Neumark, Bednarek, and Schenk (2005) who also revealed a higher percentage of pre-employment prior to the diagnosis determined some reasons for the decrease in employment after diagnosis. Bradley, Bednarek, and Schenk (2005) performed further testing of various reasons for the decrease in employment such as "…job activities (time spent sitting, standing, walking, and climbing stairs)… the number of people who worked for their

employer…and the presence and duration of paid sick leave" (p. 155), and found all of these variables were statistical insignificant. Therefore, the present finding indicated the employment pre-diagnosis showed significance but with women who were not employed.

Another meta-analytic study confirms the present finding that more women are employed pre-diagnosis than post diagnosis. de Boer, Taskila, Ojajärvi, van Dijk, and Verbeek (2009) examined unemployment outcomes of cancer survivors. A meta-analysis of twenty-six articles with over 20,366 cancer survivors from the United States, Europe and five other countries were examined. Out of the twenty-six articles, ten of the articles were specifically done with breast cancer survivors. Although, de Boer et al. (2009) revealed cancer patients were more likely to be unemployed than healthy individuals, breast cancer survivors had a higher risk for unemployment. Although, the study did not mention taking findings post diagnosis, it indicated the cancer patients or more specifically breast cancer patients were at risk of unemployment.

As mentioned in chapter 4, results revealed a statistically significant difference between women being employed versus women not employed pre-diagnosis. On the other hand, employment post diagnosis shows no statistically significant difference with dysfunctional career thoughts. Although, statistical significance was not seen in post diagnosis, a significant founding was seen in the amount of women employed pre versus post diagnosis. Women diagnosed with breast cancer 2007 or earlier accounted for 58% of the participants in this present study. We need to highlight that the 11% decrease in post-diagnosis employment was higher than the unemployment rate (7.9%) in the Bahamas at that time (Central Intelligence Agency, 2013). Therefore, this present study shows a significant effect rather than a statistical significant effect with the Bahamian

women's employment plans post diagnosis that indirectly affect their dysfunctional career thoughts. The significance is in concordance with de Boer, Taskila, Ojajärvi, van Dijk, and Verbeek (2009) finding. In that, more women are employed pre-diagnosis than post diagnosis of breast cancer.

Pre /Post Occupation. Results revealed non significant relationship with dysfunctional career thoughts and occupation pre-and post-diagnosis. The finding for the present study is quite different from previous studies (Amir, Moran, Walsh, Iddenden, & Luker, 2007; Bouknight, Bradley, & Luo, 2006; Talamini, La Vecchia, Decarli, Franceschi, Grattoni, Grigoletto, Liberati, & Tognoni, 1994). But these studies show that women return to work and sometimes return to the same position they held pre-diagnosis. Bouknight, Bradley, and Luo (2006) examined 416 Detroit newly diagnosed breast cancer patient about the correlation of return to work. Although Bouknight, Bradley, and Luo (2006) found women who were from the Black race, with poor health, and advance stage of breast cancer negatively affected the return to work status, all of these Detroit women returned to work in the same occupation they held previously. The disparity of the types of occupation was similar to the present findings in that the majority of the individuals were professionals such as managerial/professional positions, followed by non-professionals such as technical/sales/administrative jobs (Figure 5.3). The present findings indicate a slight drop in occupation type post diagnosis, but this is the same as employment post diagnosis. It was most interesting to observe from Bouknight, Bradley, and Luo (2006) that the 86% of the women noted their employers were perceived to be quite accommodating after their return to work.

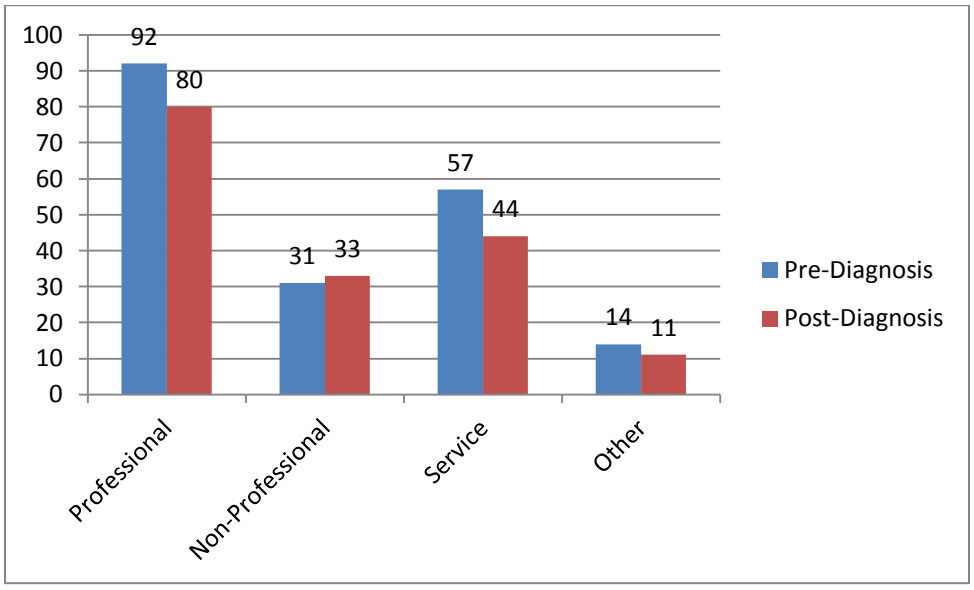

Figure 5.3

Occupation Pre and Post Diagnosis of Bahamian Women Diagnosed with Breast Cancer

Another study (Amir, Moran, Walsh, Iddenden, & Luker, 2007) observed the return to paid work of British cancer patients that revealed individuals returned to the same occupation like the study done by Bouknight, Bradley, and Luo (2006). Although this study surveyed persons with colorectal, prostate, and lung cancer, 48% (127) of the 267 patients were diagnosed with breast cancer. Amir et al. (2007) noted the rate of return to work was statistically correlated to those who had undergone surgeries compared to those who did not. Although, the current study did not differentiate if the women who were employed post diagnosis had surgery or not, the current study revealed 92.35% of the Bahamian women who participated had surgery and 77.25% were still

employed post diagnosis (Table 4). Also, Amir et al. (2007) found the participants had a strong relationship with length of sick leave and same employer return post diagnosis.

One of the earlier breast cancer studies done by Talamini et al. (1984) was opposite to the current study. Talamini et al. (1984) examined the social factors, diet and breast cancer of 368 Italian breast cancer patients. The results revealed a statistical significant risk level with women employed as housewives and non-manual workers as compared to agriculture workers. The current study did not reveal a statistical significant difference between occupation pre or post diagnosis and career thoughts with Bahamian women diagnosed with breast cancer. However, some of the studies (Amir, Moran, Walsh, Iddenden, & Luker, 2007; Bouknight, Bradley, and Luo, 2006) revealed a high rate of return to work in the same occupation with women diagnosed with breast cancer.

Pre/Post Salary. The results revealed for both hypotheses the relationship for both pre-and post-salary were not related to dysfunctional career thoughts. In order to compare the salaries pre-and post-diagnosis of Bahamian women examined the mean income of women in the Bahamas and with a Bahamian study done with a breast cancer theme. According to the Bahamas Department of Statistics (2008) women who comprise about 40% of the total income in Bahamian household earned a mean average of $34,860. This figure is appropriately the same mean category noted in the pre and post incomes of Bahamian women diagnosed with breast (Figure 5.4). The income category ($0-$40,000)

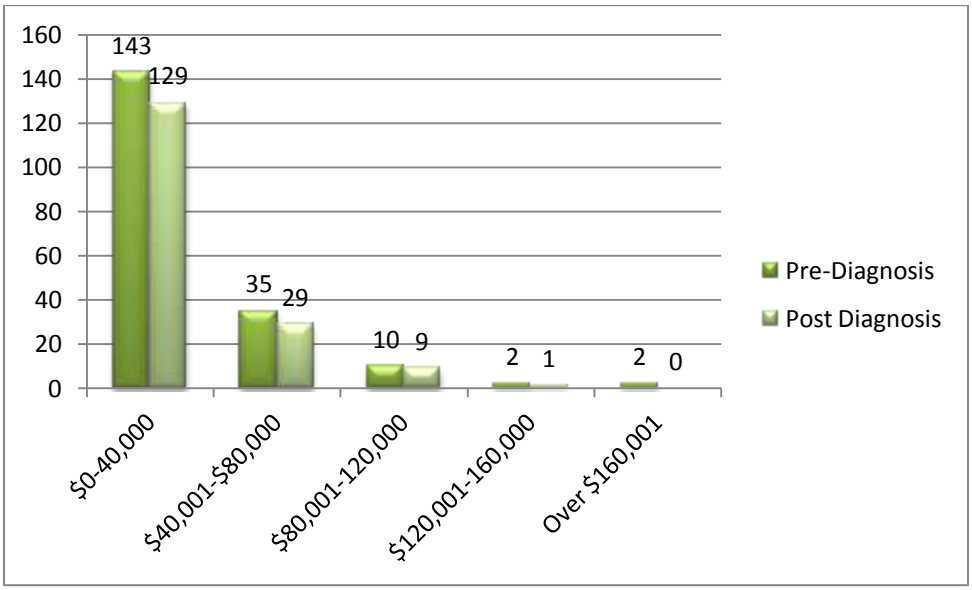

Figure 5.4. **Salary Pre and Post Diagnosis of Bahamian Women Diagnosed with Breast Cancer**

yielded the highest amount of earnings for the women with pre-salary (*n*=143, 74.48%) and post salary (*n*=129, 76.79%). In addition Mobeley (2011) although only surveyed 2.8% of Bahamian women diagnosed with breast cancer, the researcher surveyed Bahamian women nevertheless. The study revealed similar salary levels as the present finding. The majority of the women were earning between $0-40,000, as the present finding.

The hypotheses for how pre and post salary correlated with dysfunctional career thoughts were not significant with Bahamian women diagnosed with breast cancer. However, the percentage of women in each salary category (Figure 5.4) had a slight decrease. In the $0-40,000 pre-diagnosis salary range 143 (74.48%) of the women diagnosed with breast cancer has decreased slightly to 129 (76.79%) post-diagnosis. The

$40,001 - $80,000 category pre-salary 35 (18.23%) decreased slightly to 29 (17.26%) of Bahamian women diagnosed with breast cancer. The figures mentioned above only indicates the decrease in each category pre-post diagnosis of salary of the Bahamian women diagnosed with breast cancer, but this figure is not suggesting the same women were employed or not employed pre- and post-diagnosis. Further investigation of each participant's instrument under employment history pre- and post-diagnosis will determine if the same individual has lost wages post diagnosis. One previous finding was conclusive of the present finding in terms of the decrease in salary post diagnosis. Lauzier et al. et al. (2008) also noted Canadian women diagnosed with breast cancer lost approximately 66% of their total annual earnings because of their diagnosis or being absent from their work for breast cancer related activities. Lauzier et al. (2008) also found that loss of wages was significantly related with lower education, lower social support, being self-employed, more invasive stage of cancer, part-time work, and taking chemotherapy. Even though the present study did not find a statistical significant differences with dysfunctional career thoughts, Lauzier et al. (2008) explained the investigation of salary or wage loss is important because losing their salary is viewed as a strain, more and more women are diagnosed in the working age, and new treatment and technology for cancer increases in cost overall. This present study can also help with determining dysfunctional career thoughts and help one improve them while improving one's occupation status thus increasing salary.

Some studies did not reveal out right decrease in income or salary but a few indicated decrease in productivity cost (Bradley el al, 2008) and increase in disability benefits such as disability pension (Hauglann et al., 2012). These indications show some

form of decrease in salary or income because of the cancer diagnosis. Bradley, Yabroff, Dahman, Feuer, Mariotto and Brown (2008) examined the productivity loss of cancer patients (inclusive of breast cancer). This productivity loss was calculated by "…the value of lost earnings per year, by sex and 5-year age groups, from paid employment as well as non-paid caregiving and housekeeping activities" (Bradley et al. 2008, p. 1763) where working-age individuals and earnings are heavily used for this calculation. The overall productivity lost for all cancers were $142 billion and breast cancer accounts for 7.64% ($10.9 billion; Bradley et al. 2008). This study also revealed breast cancer was noted to be the highest for productivity lost in the age groups of 30-54 year old. This present study did not examine the productivity loss of the Bahamian women diagnosed with breast cancer. However, it was indicated by two of the nurses on Oncology Unit and the medical ward who had assisted me in the data collection that three of the women had died who had participated in this study. Therefore based on their earnings, non-paid caregiving and housekeeping activities there would be a loss noted.

Hauglann, Benth, Fossa, and Dahl (2012) also indicated a decrease in salary or income loss through the acceptance of a disability pension. The disability pension mentioned in this Norwegian breast cancer research is a basic pension for women who have been disabled due to their disease process. Hauglann et al. (2012) noted women with advanced breast cancer, low educational level, low income, and older age group were more prone to receiving the disability pension. The researchers noted disability pension is basic pension therefore, a notable decrease in their regular income. Therefore, the present finding shows there is a decrease in salary post diagnosis can be seen in the similar increase of disability pension of women diagnosed with breast cancer (Hauglann et al.,

2012). Again, salaries pre-post diagnosis along with career thoughts with women diagnosed with breast cancer have not been studied so there are no comparisons for these findings.

Hypothesis 3. Hypothesis three states there is a relationship between participants' stage of breast cancer diagnosis and their scores on the Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) subscales of the CTI. The present findings did not reveal a statistical significant relationship between the subscales of CTI and the three different stages of breast cancer. This may indicate that it does not matter what stage of breast cancer the women are at, that it does not influence their decision making confusion process, commitment anxiety, or external conflict processes. However, the present findings of this research about the subscales and the stages of breast cancer of the Bahamian women have mixed findings found in previous results (Keim, Strauser, & Ketz, 2002; Rodriquez, 2011; Slatten, 1999). These studies revealed that the different subscales of DMC, CA, and EC either were related or not associated with dysfunctional career thoughts and other variables.

Dysfunctional Career Thoughts Studies. Dysfunctional Career Thoughts are negative thoughts, assumptions associated with career development and planning (Reardon et al, 2011). Although dysfunctional career thoughts studies have not been done with the breast cancer survivors and thus not with stages of breast cancer, this section examines other studies done with low socioeconomic status, substance abuse, religiousness, disability, and sense of coherence. Keim, Strauser, and Ketz (2002) examined women with different socioeconomic status with some disability. Although different findings, as the present findings of Bahamian women, there was statistically

significant difference among the CTI subscales. A Tukey test revealed lower scores were noted for those women who were not seeking work compared to the disability group and the Decision Making Confusion (DMC; Keim, Strauser, & Ketz, 2002). Another study (Rodriquez, 2011) revealed a relationship with dysfunctional career thoughts and the different subscales of career thoughts. Rodriquez (2011) predicted a relationship between intrapersonal and interpersonal religious commitment and decision making confusion, commitment anxiety, and total dysfunctional career thoughts. However, external conflict was not showed to have an association with those religious variables. The result that external conflict variable was not related to the religious variables, is the same as the present findings. However, decision making confusion and commitment anxiety variables had strong relationships with the religious variables in this study.

An earlier study done by Slatten (1999) examined the dysfunctional career thinking, age, and related appraised problem-solving ability with substance abuser. These results noted decision making confusion and external conflict were statistically related with approach avoidance variable in this study. However, age was not statistical related with commitment anxiety level and external conflict. Again with the approach avoidance variable, commitment anxiety like the Bahamian women diagnosed with breast did not relate to dysfunctional career thoughts. Also, like age in Slatten (1999) study this present finding was also not related to commitment anxiety and external conflict. Finally, Lustig and Strauser (2008) measured the relationship of sense of coherence on career thoughts subscales as medium and large. Results revealed a strong relationship with decision making confusion and external conflict subscales of CTI. However, a medium relationship with sense of coherence and commitment anxiety, commitment anxiety was

not statistically significant. These studies were not done with breast cancer stage variables but with subscales of CTI as variables. Therefore, some similarities and differences can be seen.

Hypothesis 4. Hypothesis four states there is a relationship between the mediating factors (optimism and spirituality) and career thoughts in women with breast cancer

Optimism. The present research revealed a positive but weak to moderate relationship between optimism and spirituality. This may indicate that as the optimism level of the Bahamian women increases their spirituality increases. Optimistic women diagnosed with breast cancer appear to be better adjusted therefore, the optimism variable has been used with plethora of breast cancer studies over the years (Buxton, 2011). The present research and other breast cancer studies concluded with similar findings with different variables such as posttraumatic growth (Buxton, 2011), benefit finding or stress related growth (Lechner et al., 2006), positive outlook (Gustavsson-Lilius et al., 2012), and psychosocial adjustment (Young & Sook, 2012). Buxton (2011) studied 277 women over the age of 18 diagnosed with breast with post traumatic growth revealed higher optimistic levels. In addition, two hundred and thirty women diagnosed with non-mestastic breast cancer showed higher levels of benefit finding or stress-related growth with higher levels of optimism a year after surgery and 5-8 years later (Lechner et al., 2006). Last, women diagnosed with breast cancer and their partners' experienced high levels of positive outlook with high level of optimism at 2nd and 6th month post diagnosis (Gustavsson-Lilius et al., 2012). Therefore, the present research with Bahamian women diagnosed with breast cancer is similar to other studies that indicate as optimism level increases other positive variables increases.

Spirituality. The results of the second part of hypothesis 5 reveals there is a negative but weak relationship between spirituality and dysfunctional career thoughts. Even though this is a weak relationship, it appears that as spirituality increases the dysfunctional career thoughts decreases. The present research confirms the findings of previous research with dysfunctional career thoughts (Rodriquez, 2011) and another variable (Buxton, 2011). Rodriguez (2011) with a dysfunctional career thought variable is in agreement with this present finding with Bahamian women diagnosed with breast cancer. Rodriquez (2011) revealed significance relationship to religious commitment and dysfunctional career thoughts. As stated in Chapter 2 we have used religion and spirituality interchageably. Therefore, the similarity of this present finding and Rodriguez (2011) can be noted. Although, the study done with public university students included male and female, out of the two hundred and two students about 71.8 % (*n*=145) were females. Rodriquez (2011) indicated statistical relationship between,

> …intrapersonal religious commitment, interpersonal religious commitment, and total religious commitment (RCI-10 total score) had significant, very weak to weak, negative relationships with decision-making confusion, commitment anxiety, and total dysfunctional career thoughts (CTI total score; p.43).

Bahamian studies have focused on breast cancer variables such as breast self-examinations (Dean, 1985; Mackey, 2001), mammogram and attitudes of breast cancer survivors (Payne & Farrington, 2005), and breast screening practices Mobley (2011). Although limited medical studies such as Donenberg et al., (2011) have used breast cancer participants limited psychosocial studies have been used with breast cancer survivors in the Bahamas. However, although Mobley (2011) used only 2.8% (*n*=18)

women diagnosed with breast cancer and not breast cancer survivors, the researcher has used a total of 646 Bahamian women and the findings were partially similar to the present study. Partial notation was made between Mobley (2011) research and the present study because they both revealed a statistical correlated (positive or negative) with spirituality. The researcher examined "…factors of select demographics (age, income, knowledge, attitude, and spirituality), as possible predictors of breast screening practices among Bahamian women…" (p. 65). Results revealed a positive significant relationship with spirituality and breast screening practices among Bahamian women (Mobley, 2011). This Bahamian researcher also found spirituality to be an "…independent predictor of breast cancer screening practice" (Mobley, 2011, p. 86). This Bahamian study finding is partially similar to the present research.

Dysfunctional Career Thoughts. The result of the third part of hypothesis 5 reveals optimism was not statistical related with dysfunctional career thoughts. Again, there have been limited studies with optimism and dysfunctional career thoughts with women diagnosed with breast cancer. However, many researchers such as (Creed, Patton, & Bartum, 2002; Patton, Bartrum, & Creed, 2004; Saunders, D. E., Peterson, G. W., Sampson, J. P., & Reardon, R. C. , 2000) have examined optimism and other career variables. The present findings and other studies that studied career variables and optimism had opposite findings. Literature has revealed optimism has been positively related to other career variables. Creed, Patton, and Bartum (2002) noted five hundred and four (52% females) experienced higher optimism levels with career exploration, attitude, and planning. In addition although, dysfunctional career thoughts were not used as one of the variables, decision making was one of the subscales, which is also a part of

dysfunctional career thoughts. Decision making certainty was associated with optimistic levels of the participants in this study (Creed, Patton, & Bartum, 2002). Finally it was noted, "...for the career-related variables, those with high levels of optimism (LOT-R Optimism) reported high levels of career planning and exploration, were more decided about their career decisions, and had more career-related goals" (Creed, Patton, & Bartum, 2002, p.55). Another study done by Patton, Bartum, and Creed (2004) female were seen to be more optimistic with their career goals than males. Finally, Saunders et al. (2000) found dysfunctional career thoughts were associated with career indecisions. Although these studies were not done conjointly with optimism and dysfunctional career thoughts, and not with breast cancer Bahamian participants, the literature review was in contrast with the present finding.

Optimism as a Mediating Variable. Although optimism was viewed as a mediating factor in some literature as the present research finding did not find this. Many studies (Carver, , Pozo, Harris, Noriega, Scheier, Robinson et al., 1993; Karademas, 2006;Young & Sook, 2012) showed another mediator that married optimism and other factors (Matthew & Cook, 2009; Wimberly, Carver, & Antoni, 2008).Others indicated a relationship with optimism (Higgins, Dobrow & Roloff , 2010; Rasmussen, Scheier, Greenhouse, 2012; Stern et al., 2010). Confirmation of other studies has revealed optimism acts as a mediator with other variables. Optimism was found to have indirect and total effect with psychosocial adjustment (Young & Sook, 2012). This study was done with women diagnosed with early stage of breast cancer.

Karademas (2006) reported on two hundred and one individuals where 56.7% women working in an insurance company where optimism was used as a partial mediator.

"According to this model, self-efficacy and social support predict depression and satisfaction with life in both ways: directly and indirectly through optimism" (Karademas, 2006, p. 1287). This study noted optimism mediated results between cognitive representations and human functioning. Again this study did not have the same demographic makeup or more specifically someone with a chronic illness, but it represented partial likeness in terms of optimism as a mediator to another variable.

As indicated above some studies have showed other mediators that bridge the optimistic factor to others. Matthew and Cook (2009) noted self-transcendence as the mediating factor between optimism and emotional wellbeing. This indirect effect was statistically significant at $p<0.001$. In this study done by Matthew and Cook (2009) women who participated were breast cancer patients between the ages of 39-79 years undergoing radiation therapy. The demographic statistics were not similar to this Bahamian present study but the findings were not conclusive. Wimberly, Carver and Antoni (2008) also resulted in another mediator (social support at post surgery, 3-month follow-up, 6-month follow up and 12-month follow up) in the relationship between optimism and psychosexual being. One hundred and thirty-six women who were between the ages of 29-79 years underwent chemotherapy and anti-hormonal therapy also used the LOT-R instrument as the present study to determine the optimism relationship. But the findings to the present research were not the same.

Optimism studies in previous research with career variables and chronic illness may be limited but there are a plethora of studies (Higgins, Dobrow & Roloff, 2010; Rasmussen, Scheier, & Greenhouse, 2012; Stern et al., 2010) that indicated a relationship with optimism. Higgins, Dobrow, and Roloff (2010) study revealed persons with early

career psychosocial support and early career support were positively related to optimism. These were business graduates. Stern et al. (2010) studied Israeli adolescent and young adult cancer survivors. Results revealed relationship with dispositional optimism, health vulnerability, and time perspectives with career decision making. Positive relationship was also noted between optimism and quality of life of these cancer survivors.

Conclusions, Limitations, and Implications for Future Research

The relationship of career thoughts, optimism and spirituality of Bahamian women diagnosed with breast cancer was explored. Younger Bahamian women were noted to have experienced higher levels of dysfunctional career thoughts. While, marital status was statistically related to career thoughts, no differences were determined between the pair wise categories. Meaning no differences were seen among the marital status categories (married, not married, divorce, other). Ethnicity and education did not play a role in one's dysfunctional career thoughts but employment pre-diagnosed of breast cancer. Results revealed women who were not employed before being diagnosed had a higher dysfunctional career thoughts. Other pre-diagnosis variables such as occupation and salary were not statistically related to career thoughts. In addition to pre-diagnosis variables being examined in this study, post diagnosis variables such as employment, occupation, and salary were also explored. Final analysis indicated these variables show no statistical significant difference with career thoughts. Decision Making Confusion (DMC), Commitment Anxiety (CA), and External Conflict (EC) along with the different stages of breast cancer were not statistically related to career thoughts. Positive weak relationships of optimism and spirituality were noted. As Bahamian women's spirituality levels increased their optimism levels also increased. Although optimism was not related

to dysfunctional career thoughts, spirituality demonstrated a significant weak negative relationship to career thoughts. Again this inverse relationship indicates as their spirituality level decreases their dysfunctional career thoughts increases. Path analysis results explored the mediation among optimism, spirituality and career thoughts. Optimism was not noted to be a mediating variable that positively affects spirituality and career thoughts. Again, the impact of these results may be significant not only to the Bahamian population because of the first time study but also in helping breast cancer survivors examine further career decisions even after being diagnosed with breast cancer.

Limitations. This study is the first known study to examine the relationship of career thoughts of Bahamian women diagnosed with breast cancer to optimism and spirituality. In addition, this study investigated the potential mediating effect of optimism and spirituality relative to the impact of breast cancer on career thoughts. These potential mediators have been found to improve quality of life of women diagnosed with breast cancer. The findings of this study, however, were not without limitations.

First, data collection was somewhat challenging among Bahamian participants. A large amount of effort was made to recruit Bahamian women diagnosed with breast cancer. The majority of the participants were targeted through hospitals, cancer support groups, counseling associations, and cancer societies. However, persons who do not attend these psychosocial and medical groups may not have been reached. Second, collecting data was attempted throughout the islands of the Bahamas. Donenberg et al. (2011) stated the Bahamas is made up over 700 hundred islands. Only a few are inhabited by people. Therefore, the challenge to reach all of the women on the different islands who are diagnosed with breast cancer was difficult. The presidents of the various

Bahamian cancer societies noted it was difficult to recruit all of the women diagnosed with breast cancer to attend the monthly meetings. Therefore, the data collection for women on the Family Islands of the Bahamas was low. In addition, generalization of all Bahamian women diagnosed with breast cancer can be done but cautious should be noted. All of the islands of the Bahamas have their own unique Bahamian culture and difficulties with medical and social help when faced with the breast cancer issues. The way the women respond to the different questions from the different islands may have varied because of their different experiences. Comparing the career thoughts of the women from the different islands will be done in a future study.

Third, the self- reporting instruments may be highly sensitive (breast cancer history) and he wording of Career Thoughts Inventory may appear highly negative. The breast cancer history such as one's operation, treatment, diagnosis etc. may have influenced the way women answered the questions. Also, the question such as, "*I've tried to find a good occupation many times before, but I can't ever arrive at good decisions*" from the CTI instrument may have appeared negative to the women. Inaccuracies such as answering all of the questions as "*strongly disagree*" because of the negativity to the questions may have affected the results. Last, the data collection was slow at the beginning of recruiting period because the principle investigator did not target the Oncology Unit where the majority of the women were recruited. The recruitment of the Bahamian women participants could have been more effective if the same Oncology Unit were targeted earlier in the study. More women could have been recruited sooner especially on the Oncology Unit.

Implication for Future Research. The implication for future research can be noted in two different disciplines singularly or in conjunction with each other. Career Counseling and Oncology medicine are perhaps the two disciplines that can benefit from the findings of this study. Career counselors can help individuals deal with the unplanned medical event in their life to construct a positive and satisfying quality of life (Krumboltz, 2009) and thus improve career thoughts. Younger women were seen to have higher dysfunctional career thoughts then older women in this current study. New and innovative career programs can assist younger women before the diagnosis of breast cancer and just after the result have been shared with the individual. Sampson, Peterson, Lenz, Reardon, and Saunders (1996) have noted that individuals with higher dysfunctional career thoughts may need a structured counseling that may involve cognitive restricting, rehearsal and practice, along with progressive relaxation and guided imagery. This new finding can also help create personalized counseling sessions targeted for improving higher dysfunctional career thoughts with the use of the CIP intervention processes (Reardon et al., 2009).

Bahamian women diagnosed with breast cancer in this study were also seen to have improved optimism with increased spirituality levels. Approximately 86.54% (*n*=180) Bahamian women in this study identified with a spiritual group. In addition, the women's spirituality level and optimism level were positively related to each other. Seligman (2006) noted that less optimistic women can learn to be optimistic. Therefore, we can maybe help those Bahamian women who have lower levels of optimism level to become more optimistic. Also, Purdy and Dupey (2005) noted the women with lower levels of spirituality level can use a Holistic Model of Spirituality wellness to help

improve their spirituality thus improving their optimism and hopefully the way they view the diagnosis of breast cancer. Also, more optimistic interventions mentioned by Seligman (2006) can also be used to help improve one's career thoughts.

The medical arena that includes medical, nursing and oncology staff members can view these results and attach career counseling to their already existing medical models. As oncology units become more and more advanced with different types of treatment, treatment for the psychological, spiritual, financial, emotion and career development needs more attention. This study can set precedence in the development of career decisions of patients diagnosed with cancer of any sort. Further studies with other cancer conditions such as cancer of the lungs, liver, and prostate cancer and be investigated with career thoughts. In addition new studies with other chronic diseases such as End Stage Renal Disease, diabetes, heart disease, can be done in the Bahamas and the United States with career thoughts to help improve career decisions.

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Appendices

Appendix A

Demographic Information Questionnaire

Part I:

Instructions: The following questions will help us ensure that a wide variety of people have been surveyed and that the results will reflect many different experiences. Please provide us with the following information about yourself. There is no right or wrong answers, and all responses will be kept anonymous and confidential.

Place circle the appropriate number that best describes you.

1. **Please specify place of residence**

    1. Bahamas
    2. Florida
    3. Other

2. **If you are from the Bahamas please indicate the island: _____**

3. **If you are from the Florida please indicate the city: _____**

4. **Ethnic Group**

    1. Caribbean
    2. White/Caucasian
    3. Black/African-American
    4. Other_____

5. **Age (in years) _____**

6. **Please indicate the highest grade or level of education you have completed**

    1. Completion of elementary and junior school
    2. High school graduate
    3. Attended College / University
    4. Other (please specify): _____

7. Please indicate current marital status by selecting the appropriate category

1. Married
2. Not-married
3. Divorced
4. Other (please specify): _____

8. Do you identify with a spiritual group or religion?

1. Yes
2. No

If yes, please specify: _____

9. What is your current status?

1. Non/Student
2. Student
3. Retired
4. Volunteer
5. Employed
6. Other: _____

Part II: Breast Cancer History

We are interested in finding out about the many different experiences women have following a diagnosis of breast cancer. Please provide the following information about the breast cancer diagnosis. There is no right or wrong answers, and all responses will be kept anonymous and confidential.

10. Please indicate the number of years that have passed since you were first diagnosed with breast cancer

1. 1 – 2 years

2. 3 - 4years

3. 5– or more years

11. What stage are you presently?

1. Stage 0: (earliest form of breast cancer)
2. Stage I: (The tumor is 2cm and has not spread to lymph nodes)
3. Stage II: (The tumor is 2cm and has spread to auxiliary or mammary lymph nodes.
4. Stage III: (The tumor is not more than 5 cm across or larger than 5 cm across but does or does not grow into the chest wall. The cancer hasn't spread to distant sites.
5. Stage IV: (The cancer can be any size and may or may not have spread to nearby lymph nodes. It has spread to distant organs or to lymph nodes far from the breast. Common sites spread are the bone, liver, brain, or lung.)
6. Don't know

12. Please indicate type(s) of operation(s) you have received by circling each applicable

1. No surgery
2. Lumpectomy (lump remove out of breast)
3. Single mastectomy (one breast off)
4. Double mastectomy (two breasts off)

5. Other_____

13. Please indicate all the treatment type(s) that you have received by circling the appropriate options below

1. No treatment received
2. Radiation therapy
3. Chemotherapy
4. Alternative treatment (e.g., naturopath, acupuncture, etc.)
5. Other (please specify): _____

14. Have you finished treatment?

1.Yes
2. No

15. Has your physician told you that you are in remission (there is no sign of cancer left in your body)?

1. Yes
2. No
3. Don't know

16. If yes, in what year were you told you were in remission? _____

17. Are you or have you been a member of a breast cancer support group

1. Yes
2. No
3. Don't know

18. If the answer for question 17 is yes please state what breast support group you are a part of. _____

Part III: Employment History:

We are interested in finding out about the many different experiences women have following a diagnosis of breast cancer. Please provide the following information. There are no right or wrong answers, and all responses will be kept anonymous and confidential.

PRE-DIAGNOSIS OF BREAST CANCER

Circle the correct answer

19. Were you employed before the diagnosis of breast cancer?

1. Yes
2. No

20. If yes, what category best describes your occupation pre diagnosis of breast cancer?

1. **Professional** (e.g., teacher/professor, nurse, lawyer, physician, engineer, manager/administrator,)
2. **Non-professional** (e.g. laborer, maintenance factory workers, farmers, truck drivers, clerical secretaries, clerks, or mail carriers, homemakers)
3. **Service** (sales persons, agents, and brokers, police, cooks, waitress, or hairdressers)
4. **Other** (please describe)_____

21. What was your approximate salary/income annually pre-diagnosis?

1. $0 - $40,000
2. $40,001 - $80,000
3. $80,001 - $120,000
4. $120,001 - $160,000
5. Over $160,00

POST-DIAGNOSIS OF BREAST CANCER

Circle the correct answer

23. **Are you employed after the diagnosis of breast cancer? Or Are you presently employed?**

1. Yes
2. No

24. **If yes, what category best describes your occupation after diagnosis of breast cancer?**

1. **Professional** (e.g., teacher/professor, nurse, lawyer, physician, engineer, manager/administrator,)
2. **Non-professional** (e.g. laborer, maintenance factory workers, farmers, truck drivers, clerical secretaries, clerks, or mail carriers, homemakers)
3. Service (sales persons, agents, and brokers, police, cooks, waitress, or hairdressers)
4. Other (please describe)_____

25. What is your current approximate salary/income annually?

1. $0 - $40,000
2. $40,001-$80,000
3. $80,001- $120,000
4. $120,001-$160,000
5. Over $160,001

Appendix B

Life Orientation Test – Revised (LOT-R)

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no wrong or right answers. Answer according to your own feelings, rather than how you think "most people" would answer. Place the letter from the items from the top to complete the bottom part.

A = I agree a lot
B = I agree a little
C = I neither agree nor disagree
D = I disagree a little
E = I disagree a lot

_____ 1. In uncertain times, I usually expect the best.

_____ 2. It's easy for me to relax.

_____ 3. If something can go wrong for me, it will.

_____ 4. I'm always optimistic about my future.

_____ 5. I enjoy my friends a lot.

_____ 6.It's important for me to keep busy.

_____ 7. I hardly ever expect things to go my way.

_____ 8. I don't get upset too easily.

_____ 9. I rarely count on good things happening to me.

_____10. Overall, I expect more good things to happen to me than bad.

Appendix C

The Functional Assessment of Chronic Illness Therapy Spiritual Well-Being Scale (FACIT-Sp)

Definition: Spirituality means having meaning, purpose, and fulfillment to life suffering and death, will to live, and person's belief and faith in God (Renetzky, 1979).

Below is a list of spiritual statements that other people with your illness have said are important.

	SPIRITUAL WELL-BEING	Not at all	A little bit	Some-what	Quite a bit	Very much
Sp1	I feel peaceful……	0	1	2	3	4
Sp2	I have a reason for living…….	0	1	2	3	4
Sp3	My life has been productive……..	0	1	2	3	4
Sp4	I have trouble feeling peace of mind…….	0	1	2	3	4
Sp5	I feel a sense of purpose in my life……	0	1	2	3	4
Sp6	I am able to reach down deep into myself for comfort……..	0	1	2	3	4
Sp7	I feel a sense of harmony within myself…….	0	1	2	3	4
Sp8	My life lacks meaning and purpose……	0	1	2	3	4
Sp9	I find comfort in my faith or spiritual beliefs……	0	1	2	3	4
Sp10	I find strength in my faith or spiritual beliefs……..	0	1	2	3	4
Sp11	My illness has strengthened my faith or spiritual beliefs……	0	1	2	3	4
Sp12	I know that whatever happens with my illness, things will be okay……	0	1	2	3	4

Appendix D

Online Study Recruitment Flyer

Title: The Relationship Among Career Thoughts, Optimism, and Spirituality in Women Diagnosed with Breast Cancer

eIRB #: 8443

Survivor or Diagnosed with Breast Cancer For More Than Five Years?

PARTICIPANTS NEEDED

For an on-line questionnaire based research study
Regarding Career Thoughts, Optimism, and Spirituality of women with Breast Cancer

Should take approximately 30- 45 minutes to complete
Participation is confidential

As a thank-you for your participation,
participates will be placed in three $50 raffles and $3 donation
will be made toward your breast cancer support group or organization.

Please contact Levette S. Dames at
Email: dameslevette@yahoo.com

To receive link and password for access to the study

Questions, comments, concerns? Feel free to contact me by email

Appendix D Continued

Paper/Pencil Flyer

Title: The Relationship Among Career Thoughts, Optimism, and Spirituality in Women Diagnosed with Breast Cancer

eIRB #: 8443

Survivor or Diagnosed with Breast Cancer For More Than Five Years?

PARTICIPANTS NEEDED

For a questionnaire based research study
Regarding Career Thoughts, Optimism, and Spirituality of women with Breast Cancer

Should take approximately 30- 45 minutes to complete
Participation is confidential

As a thank-you for your participation,
participates will be placed in three $50 raffles and $3 donation
will be made toward your breast cancer support group or organization.

Please contact Levette S. Dames at
Email: dameslevette@yahoo.com

To receive link and password for access to the study

Questions, comments, concerns? Feel free to contact me by email

Appendix E

Online Introduction and Informed Consent

Women have been diagnosed with breast cancer in the Bahamas and the United States. The purpose of this study is to determine the impact of breast cancer on women's career thoughts and potential mediating factors.

Levette Dames (MA) of the University of South Florida and Doctoral Candidate and Instructor would like to invite you to be a part of this study, "The Relationship Among Career Thoughts, Optimism, and Spirituality in Women diagnosed with breast".

If you agree to be a part of this study you will be asked to complete a few questionnaires about your experience pre and post diagnosis of breast cancer and some of your career thought processes.

The survey has many pages, and I expect will take no more than 20 – 30 minutes to complete.

While you may not receive any direct benefit for participating, the hope is to seekhelpforwomen who have and will experience the diagnosis of breast cancer especially in the field of improving career thoughts while assisting with the medical aspect. Also different cancer affiliated organization may also may use these results to be added to existing interventions.

You will not be asked any identifying information aside from birth country (i.e., country – for reporting purposes).

Participating in this study is completely voluntary. Even if you decide to participate now, you may change your mind and stop at any time. You may choose to not answer an individual question or you may skip any section of the survey. Simply click "Next" at the bottom of the survey page to move to the next question.

If you have questions about this research study, you can contact my major professors, Drs. Herbert Exum (hexum@usf.edu)and Carlos Zalaquett (carlosz@usf.edu) at University of South Florida, Tampa, FL, EDU 380. 813-974-3515.

If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the Division of Research Integrity and Compliance of the University of South Florida at (813) 974-9343.

If you agree to participate in this study, please click on next to continue.

(You are advised to only use these questions for the purpose of this research)

Appendix F

Feedback Questions for Pilot Test (Iraossi, 2006,90-92)

Please take a few minutes to complete some questions about how we can improve the various instruments for this present study. There are no right or wrong answers.

1. How long did it take you to complete the instrument?
2. What do you think this instrument is about?
3. Do you feel comfortable answering the questions?
4. Is the wording of the survey clear?
5. Are the directions clear? If no explain
6. Are the instructions clear on what to do with the instrument after completing it?
7. Are the answer choices compatible with the respondents' experience in the matter? If no explain
8. Do any of the items require them to think too long or hard before responding? If so, which ones?
9. Is there any words/language in the instrument that you did not understand?
10. Did you find any of the questions to be unnecessary or too sensitive?
11. Do any of the questions generate response bias? If so, which ones?
12. For what purposes do you think this information will be used?
13. Is there enough diversity in the answers received?
14. According to you have any other important issues been overlooked?
15. What problems, if any, did you have completing the instrument?
16. Were any questions difficult to answer?
17. Is there anything you would change about the instruments?

Appendix G

Paper/Pencil Introduction Script

Levette S. Dames is a Doctoral Candidate in Counseling Education at University of South Florida. She is currently performing research to study the impact of breast cancer on women's career thoughts and potential mediating factors. This information can help individuals such as medical personnel, nursing staff, career counselors, counselors, and psychologists on how the impact on women's career thoughts may be mediated by optimism and one's spirituality. This project will be reviewed and approved by the USF Institutional Review Board.

In order to insure an adequate sample size for the proposed research, a large number of participants is needed. With your permission, I would like to give five short surveys to you which will take about 30 minutes. Your participation is completely voluntary. You can withdraw at any time of this study. Please read and sign the consent form first. Then complete the demographic survey, the CTI, the LOT-R scale, and the FACTS-SP. Ensure all of the instruments have the same number at the top right hand of the first page. After you have completed the surveys please place in the envelope provided. Make sure the number on the envelope is identical to the number on the surveys. The participants after completion of the instruments will be given a thank you page, breast cancer support groups, a breast cancer website, and crisis center number.

Appendix H

Thank you

Thank you for taking the time to help us collect information regarding the "The relationship among career thoughts, optimism, and spirituality in career thoughts of women diagnosed with breast". I appreciate your time.

Please find the following information for Cancer Society Information.

Bahamas Cancer Society

Address: East Terrace, Centreville
P.O. Box SS-6539
Nassau Bahamas

Website: www.cancersocietybahamas.org

Telephone: 1-242-323-4441 or 1-242-323-4482

American Cancer Society, Florida Division, Inc.

Address: 3709 West Jetton Avenue
Tampa, FL 33629

Website: www.cancer.org

Telephone: 1-813-349-4295&1-800-227-2345

Support Groups

Bahamas Support Group

Southern Community Center - Soldier Road

P.O. Box CB- 13645;

Telephone: 242-326-1929; 376-0054; 376-0058; Fax: 242-326-1934

Email: sister_sisterbreast@yahoo.com

Florida Support Group

FORCE: Facing Our Risk Of Cancer Empowered

16057 Tampa Palms Blvd W # 373

Tampa, Florida 33647

Tel: 866-288-7475

Email: suefriedman@facingourrisk.org.

Young and Young at Heart

jersey-girl@live.com

Appendix I

Incentive Slip

Title: The Relationship Among Career Thoughts, Optimism and Spirituality in Women Diagnosed with Breast Cancer

eIRB #: 8443

Are you interested in winning $50, please complete the information below. You will be contacted if you are the winner.

Please complete the information below:

Name: _____

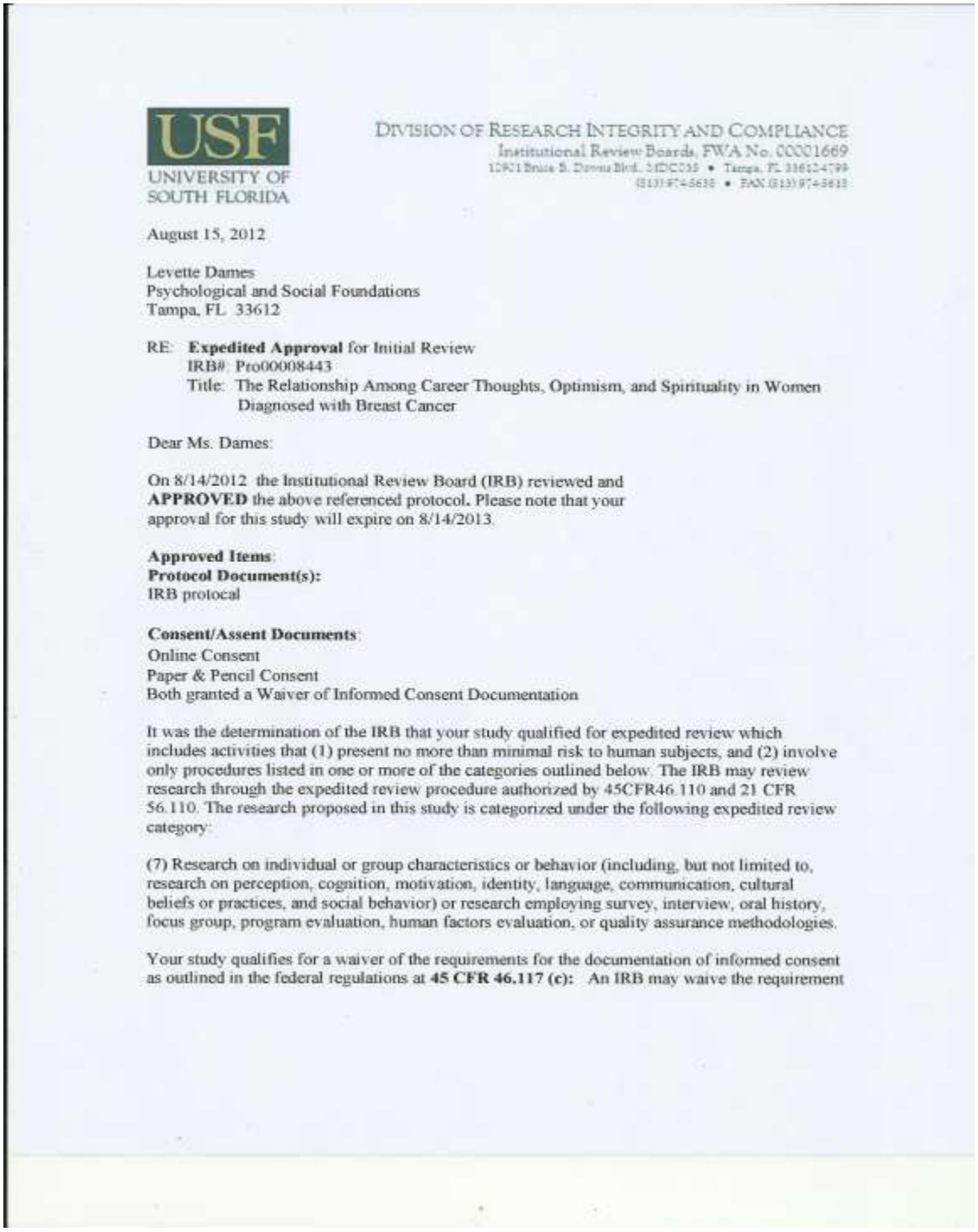
Address: _____

Telephone Contact: _____ Cell Phone: _____

Email Address: _____

Appendix J

Approval Letters



USF
UNIVERSITY OF SOUTH FLORIDA

DIVISION OF RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-5618

August 15, 2012

Levette Dames
Psychological and Social Foundations
Tampa, FL 33612

RE: **Expedited Approval** for Initial Review
IRB#: Pro00008443
Title: The Relationship Among Career Thoughts, Optimism, and Spirituality in Women Diagnosed with Breast Cancer

Dear Ms. Dames:

On 8/14/2012 the Institutional Review Board (IRB) reviewed and **APPROVED** the above referenced protocol. Please note that your approval for this study will expire on 8/14/2013.

Approved Items:
Protocol Document(s):
IRB protocal

Consent/Assent Documents:
Online Consent
Paper & Pencil Consent
Both granted a Waiver of Informed Consent Documentation

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110 and 21 CFR 56.110. The research proposed in this study is categorized under the following expedited review category:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at **45 CFR 46.117 (c):** An IRB may waive the requirement

for the investigator to obtain a signed consent form for some or all subjects if it finds either: (1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or (2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval by an amendment.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John A Schinka, Ph.D.

John Schinka, PhD, Chairperson
USF Institutional Review Board

Sister Sister Breast Cancer Support Group

April 26, 2012th, 2012

Levette S. Dames
Doctoral Candidate and Instructor
President FCDA 2011-2012
University of South Florida

RE: DISSERTATION RESEARCH ENTITLED

"Study of the Impact of Breast Cancer on Women's Career Thoughts and Potential Mediating Factors"

Dear Ms. Dames,

This is to certify that I, Andre Sweeting, President of Sister Sister Breast Cancer Support group grant permission for you to involve our group members for the above mentioned research. The Sister Sister Breast Cancer support group meets on a monthly basis in the Southern Community General Clinic owned and operated by Dr. Locksley Munroe. You are granted permission to attend our monthly meetings to introduce and distribute the questionnaires to our members. Also, I will send your survey monkey link to our members to complete the questionnaires if they are not present at the meeting.

Your study as mentioned in your proposal will be conducted on Bahamian and American women who have been diagnosed with breast cancer for more than five years and between the ages of 18-65. The process of your research will be submitted to the Internal Review Board (IRB) of University of South Florida where you are presently attending.

In this regard, while we at the Sister Sister Breast Cancer Support Group granted you access and will assist as best as we can regarding participants we will not be solely responsible for this aspect of the project. Also, you will have access to distribute a flyer to our meetings prior to the actual data collection. I will also pass this information on to my executive members of Sister Sister group.

If further information is required please do not hesitate to contact me at 324-6624/376-0054 or via email

Sweeting54@coralwave.com.

Southern Community Center - Soldier Road
P.O. Box CB- 13645;
Telephone: 242-326-1929; 376-0054; 376-0058; Fax: 242-326-1934
Email: sister_sisterbreast@yahoo.com

CANCER SOCIETY OF THE BAHAMAS

P. O. Box SS-6539, Nassau, Bahamas
Telephones: (242) 323-4482 or 323-4441, Fax: 323-4475
Toll Free Number from the Family Islands 1-242-300-0277
Website: www.cancersocietybahamas.org
E-Mail: cancersociety@hotmail.com
HEADQUARTERS: East Terrace, Centreville (2 Doors South of ZNS)

February 21, 2012

Levette L. Dames
Doctoral Student and Instructor
President FCDA 2011-2012
University of South Florida

RE: RESEARCH REGARDING BREAST CANCER

Dear Ms. Dames,

As previously discussed and mentioned in your email dated February 16th 2012, along with submission of a Cancer Society of the Bahamas Special Events Form, the Cancer Society of the Bahamas grants permission for you to use the facility of the Cancer Society of the Bahamas located East Terrace, Centreville for your research study.

Your study as mentioned in your email will be conducted on Bahamian and American women who have been diagnosed with breast cancer for more than five years and between the ages of 18-65. The process of your research will be submitted to the Internal Review Board (IRB) of University of South Florida where you are presently attending.

In this regard, while we at the Cancer Society of the Bahamas will assist as best as we can regarding participants we will not be solely responsible for this aspect of the project. Also, you will have access to use the facility for interview purposes and or distribute of applications/flyers. We will also pass this information on to our Family Island Branches and see how best they will be able to assist.

In addition, we would request that you note on your application forms that we the (Cancer Society of the Bahamas) have no ties to the said research and would not be held responsible for any matters pertaining to the said research.

We would like to thank you for considering the Cancer Society of the Bahamas to be a part of this impressive Research regarding Breast Cancer and wish you success in this venture.

If further information is required please do not hesitate to contact the undersigned at 242-677-9037, 242-424-5268 or the Administrator, Ms. Tammy Sands at 242-323-4441, 242-323-4482 or via email tsands@cancersocietybahamas.com.

Warm Regards,

Earle R. Bethell
President...

cc: Tammy L. Sands
Administrator

Family Island Branches:
Freeport, Central Eleuthera, San Salvador, South Andros, Central Andros, Cat Island and Exuma

Appendix K

Amended Approval Letter for CSENT and Online Recruitment

Dear Educators,

I am Levette Dames, a Doctoral Candidate, in Counselor Education at the University of South Florida. If you are a survivor of breast cancer, I would like to invite you to be a part of this study entitled, "***The Relationship among Career Thoughts, Optimism, and Spirituality of Women Diagnosed with Breast Cancer***". I would appreciate if you would distribute this call for participation to agencies, hospitals, and survivors of breast cancer. This study has been approved by University of Florida's eRIB #8443. In addition, the Career Thoughts Inventory has been adapted and reproduced online by special permission of the Publisher, Psychological Assessment Resources, Inc.

In order to be eligible for this study you or either participants must meet all of the following criteria:

a) Survivor or diagnosed with breast cancer (more than one year)
b) Live in the Florida (US) or The Bahamas (Caribbean) area
c) Between the ages of 18-65 years

The purpose of this study is to help surviving women diagnosed with breast cancer improve the career thoughts and advance the career development.

The survey has small pages, but it usually takes 30 – 45 minutes to complete. While you may not receive any direct benefit for participating, we hope the study will help women who have or will experience the diagnosis of breast cancer especially, in the field of improving career thoughts while assisting with the medical aspect. Also different cancer affiliated organizations may also use these results to be added to existing interventions.

I can be contacted at 813-974-3515 (leave a message with Sandy Turner). If you have questions about this research study, you can contact one of my major professors, Dr. Herbert Exum (hexum@usf.edu) or Dr. Carlos Zalaquett (carlosz@usf.edu) at the University of South Florida, Tampa, FL.

As a thank-you for your contribution, a $3 dollars donation per participant will be made toward the Florida or the Bahamas Cancer Society Divisions, and participants will be placed in a raffle to win one of three $50.00 dollars vouchers.

If you would like to participate please email Levette S. Dames at dameslevette@yahoo.com to receive the link, password to access the survey, and additional information about the study.

Thank you in advance for your participation.

193

USF
UNIVERSITY OF
SOUTH FLORIDA

DIVISION OF RESEARCH INTEGRITY AND COMPLIANC
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813)974-5638 • FAX (813)974-5618

October 12, 2012

Levette Dames
Psychological and Social Foundations

RE: **Approved** Amendment Request
IRB#: MS1_Pro00008443
Title: The Relationship Among Career Thoughts, Optimism, and Spirituality in Women Diagnosed with Breast Cancer

Dear Ms. Dames:

On 10/10/2012 the Institutional Review Board (IRB) reviewed and approved your Amendment by expedited review procedures.

The submitted request has been approved **from date:** 10/10/2012 **to date:** 8/14/2013 for the following:

Protocol Document(s):
IRB protocol Revised(0.03)

1. Change in recruitment:
(A) The original protocol recruited survivors of breast cancer more than five years. After completing the pilot testing the majority of the women encountered were recently diagnosed or more than one year survivor. Inclusion criteria has been changed to one year or more survivor of breast cancer rather than five.
(B) Recruitment letters will be sent to the University of South Florida Counselor Education Students. As a University of South Florida Counselor Education Student, each student is a part of a contact list. PI can send information to this contact list through Dr. Zalaquett who is one of the PI's advisors and a faculty member in Counselor Education. Members of the CESNET are privileged to send information to recruit individuals to all other CESNET prescribers, hence the new the Recruitment Letter was developed at the request of the Counselor Education and Supervision Network (CESNET) distribution network of counselors.
(C) The online and paper/pencil flyers were revised to reflect change in inclusion criteria.
(D) The Bahamas has declared October month as Cancer Month, therefore, the Principal Investigator will like to recruit more women diagnosed with breast cancer by being interviewed by radio or television hosts to promote the research on breast cancer.

2. Protocol revised to reflect changes.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John A. Schinka, Ph.D.

John Schinka, PhD, Chairperson
USF Institutional Review Board

Appendix L

Par License Agreement

IN WITNESS WHEREOF, the parties have executed this Agreement in duplicate on the date first herein above written.

ACCEPTED AND AGREED:

BY: Levette L. Dames

LEVETTE DAMES

Title: Doctoral Candidate & Graduate Assistant

DATE: July 16th, 2012

ACCEPTED AND AGREED:

BY: _____

R. BOB SMITH III, PH.D.

Title: CHAIRMAN AND CEO

DATE: 7.30.2012

PAYMENT RECEIVED: CASH

PAR CUSTOMER No.: 46774

SIGNATURE OF PROFESSOR REQUIRED:

I hereby agree to supervise this student's use of these materials. I also certify that I am qualified to use and interpret the results of these tests as recommended in the *Standards for Educational and Psychological Testing*, and I assume full responsibility for the proper use of all materials used per this Agreement.

BY: _____

Printed Name: CARLOS ZALAQUETT

Appendix M

Pilot Test

Pilot Testing - Sample Demographics

Demographics	*n*	%
Group		
Bahamas	6	100%
Ethnicity		
Caribbean	6	100%
White/Caucasian	0	0.00%
Black/African American	0	0.00%
Other	0	0.00%
Age		
18-28yrs	0	0.00%
29-39	0	0.00%
40-51	6	100.00%
52-62	0	0.00%
63-65	0	0.00%
Level of Education		
Completion of elementary and junior school	1	16.67%
High school graduate	2	33.33%
Attended College/University	3	50.00%
Other	0	0.00%
Marital Status		
Married	6	100.00%
Not Married	0	0.00%
Divorced	0	0.00%
Other	0	0.00%
Spiritual Group		
Yes	6	100.00%
No	0	0.00%
Current Status		
Student	0	0.00%
Retired	0	0.00%
Volunteer	0	0.00%
Employed	6	100.00%
Other	0	0.00%

Pilot Testing –Breast Cancer History

History	n	%
Breast Cancer		
Years Diagnosed		
1-2 years	0	0.00%
3-4 years	0	0.00%
5-or more years	6	100.00%
Stage Diagnosed in		
Stage 0	3	50.00%
Stage I	2	33.33%
Stage II	1	16.66%
Stage III	0	0.00%
Stage IV	0	0.00%
Don't Know	0	0.00%
Type of Operations		
No Surgery	1	16.66%
Lumpectomy	5	83.33%
Single Mastectomy	0	0.00%
Double Mastectomy	0	0.00%
Other	0	0.00%
Type of Treatment		
No Treatment	0	0.00%
Radiation	1	16.66%
Chemotherapy	5	83.33%
Alternative Treatment	0	0.00%
Other	0	0.00%
Completion of treatment		
Yes	5	83.33%
No	1	16.66%
Remission		
Yes	5	83.33%
No	1	16.66%
Don't Know	0	0.00%

Pilot Testing –Employment History

History	n	%
Employment History		
Employed Pre Diagnosis		
Yes	5	83.33%
No	1	16.66%
Occupation Pre-Diagnosis		
Professional	6	83.33%
Non-Professional	1	16.66%
Service	0	0.00%
Other	0	0.00%
Salary Pre-Diagnosis		
$0 - $40,000	5	83.33%
$40, 0001 - $80,000	1	16.66%
$80, 0001 - $120,000 0	0	0.00%
$120,001 - $160,000	0	0.00%
Over $160, 00	0	0.00%
Employment Post Diagnosis		
Yes	5	83.33%
No	1	16.66%
Occupation Post Diagnosis		
Professional	5	83.33%
Non-Professional	0	0.00%
Service	1	16.66%
Other	0	0.00%
Salary Post Diagnosis*		
$0 - $40,000	5	83.33%
$40, 0001 - $80,000	1	16.66%
$80, 0001 - $120,000	0	0.00%
$120,001 - $160,000	0	0.00%
Over $160, 00	0	0.00%

*One person did not report their salary pre-diagnosis, occupation post diagnosis, and salary post diagnosis.

Pilot Test

Question 1– Pilot Test- One-Way ANOVA

Questionnaire – Between Subjects (Bahamian)

Group	***df***	***MS***	***F***
Education	2	224.26	0.80
Error	2	281.33	
Marital	3	281.33	1.65
Error	2	170.00	
Ethnicity	1	156.80	0.59
Error	3	264.00	

**significant at p<.01
*significant at p<0.05

Question 1 – Pilot Test

Correlation Matrix for Predictor and Criterion Variables

	1	2
Bahamas		
1. Age	1.00	
2. Career Thoughts (CTI)	0.69	1.00

**significant at p<.01
*significant at p<0.05

Question 2– Pilot Test- One-Way ANOVA

Questionnaire – Between Subjects

Group	***df***	***MS***	***F***
OPreD	3	132.00	0.34
Error	2	394.00	
SPreD	1	130.67	0.50
Error	4	263.33	

**significant at p<.01
*significant at p<0.05

Question 3– Pilot Test- One-Way ANOVA

Questionnaire – Between Subjects

Group	***df***	***MS***	***F***
OPosD	3	132.00	0.34
Error	2	394.00	
SPosD	3	940.80	0.37
Error	2	2.66	

**significant at p<.01
*significant at p<0.05

Question 4 – One-Way ANOVA (With Stage)

Questionnaire – Between Subjects

Group	***df***	***MS***	***F***
CTI	3	232.33	1.37
Error	2		
DMC	3	60.66	0.93
Error	2		
EC	3	3.27	1.31
Error	2		
CA	3	3.83	3.83
Error	2		

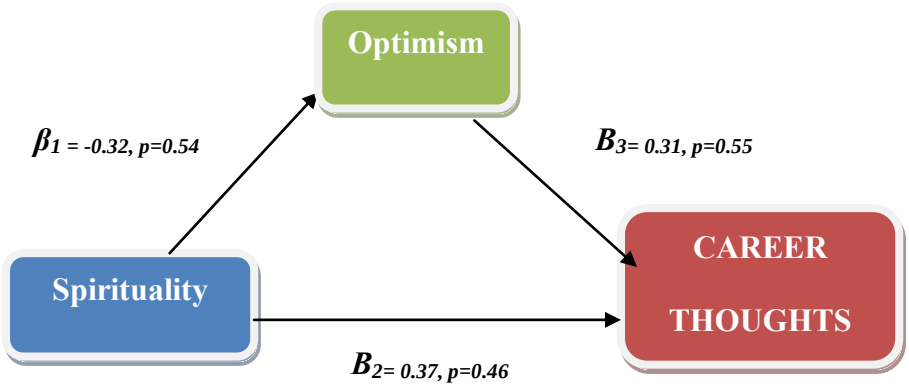
**significant at p<.01
*significant at p<0.05
DMC = Decision Making Confusion; CA = Conflict Anxiety; EC = external conflict; CTI = Career Thoughts Inventory.

Question 5 – Pilot Test

Correlation Matrix for Predictor and Criterion Variables

	1	2	3
Bahamas			
1. Optimism	1.00		
2. Spirituality	-0.31	1.00	
3. Career Thoughts (CTI)	0.30	0.37	1.00

**significant at p<.01
*significant at p<0.05



Question 5 – Pilot Test: Path analysis showing how optimism can mediate the relationship between spirituality and career thoughts

Pilot Testing – Constructive Feedback Analysis

Feedback Question		*n/6*		
Time to Complete Instrument	1	3	16 mins.	
			Yes	**No**
Feel Comportable	3	4	100%	0%
Clarity	4	4	100%	0%
Directions of survey	5	4	75%	25%
Instructions after completion	6	4	100%	0%
Compatibility of experience	7	4	100%	0%
Thinking to Long	8	4	0%	100%
Language or Words Not Understood	9	4	0%	100%
Unnecessary or Too Sensitive Questions	10	4	25%	75%
Bias Questions	11	4	25%	75%
Diversity Questions	13	4	100%	0%
Overlooked Important Issues	14	4	100%	0%
Problems with instrument	15	4	100%	0%
Difficult Questions	16	4	0%	100%
Changes for instrument	17	4	100%	0%

About the Author

Levette S. Dames has been a registered nurse for more than twenty years, and a school counselor for ten years, who has specialized in career counseling. Mrs. Dames has worked in the hospital setting, high school and eventually worked in the elementary schools. Levette has taught undergraduate and assisted teaching in graduated courses. She has developed and organized a Career Development course for student athletes at University of South Florida. Levette's research focus is career development for student athletes, persons diagnosed with a chronic illness, and to help develop programs geared toward improving career thoughts for the previous mentioned group. She will eventually like to focus on improving school counseling programs. You may contact the author at scottlevette@yahoo.ca.