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Self-Efficacy, Metastasis, Treatment, and Demographics as
Predictors of Functional Performance Status of
Adult Colorectal Cancer Patients

A Thesis

by

Dollie A. Husfeld

Submitted to the Graduate School of the
University of Texas-Pan American
In partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

August 2004

Major Subject: Nursing

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by


Dollie Husfeld


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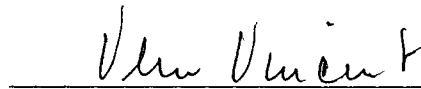
Self-Efficacy, Metastasis, Treatment, and Demographics as
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by
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August 2004

ABSTRACT

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Master of Science (MS), August, 2004, 54 pp., 8 illustrations, references, 31 titles.

The purpose of this study was to assess self-efficacy as a predictor of functional performance status in order to discover correlations that could be used to improve care of the colorectal cancer patient. Thirty participants were accessed through three outpatient cancer clinics during a two-week period. Data was collected through a demographics questionnaire, the Cancer Behavior Inventory Long Form, and the Karnofsky Performance Scale Index. Stepwise multiple regression was used to identify and relationships between the dependent variable, functional performance status, and the independent variables, self-efficacy, age, gender, residence, treatment, and metastasis ($p=.05$). Pearson's correlation showed a relatively low correlation among the variables. Results showed self-efficacy ($p=.003$) as the number one predictor of performance status, with metastasis following ($p=.000$). Future studies are recommended to reinforce these findings. Development of a program to promote self-efficacy for colorectal cancer patients is recommended.

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CHAPTER I

INTRODUCTION

STATEMENT OF THE PROBLEM

Cancer is perceived to be a life-threatening disease. Newly diagnosed patients face a crisis that emphasizes their own mortality (Landmark, Strandmark, & Wahl, 2001). The patient's beliefs of the associated side effects and suffering influences outcomes (Landmark, Strandmark, & Wahl, 2001).

Colorectal cancer is the second leading cancer diagnosis in the United States. It has been found that patients with colorectal cancer suffer more from the effects of disease and treatment than those diagnosed with lung and breast cancer (Given, Given, Azzouz, & Stommel, 2001). Older adult colorectal patients were found to have the highest level of functional performance prior to diagnosis, with a 61% decline following diagnosis based on the Karnofsky Performance Scale (Given, et al., 2001). This decline was noted to be highest in the six activities of daily living, which include eating, grooming, sleeping, exercising, working, and engaging in social relations (Given, et al., 2001).

The ability of the colorectal cancer patient to maintain a functional performance level has been a long-standing issue in regard to care. The quality of life in patients with cancer directs and enhances treatment modalities and outcomes (Schultz & Winstead-Fry, 2001). The patient has a right for a quality life, not just a life; therefore when quality life

declines, treatments must be modified so as to maintain functional performance and quality life (Schultz & Winstead-Fry, 2001). Internal adaptive processes influence the colorectal patient's quality of life (DeCosse & Cennerazzo, 1997). Many times patients are able to adapt and overcome obstacles related to colorectal cancer and treatment effects to maintain functional performance (DeCosse & Cennerazzo, 1997). Also, Cunningham, Phillips, Stephen, and Edmonds (2002) found that "psychological and spiritual self-help work is associated with greatly improved quality of life" (p. 147). Patients that routinely practice self-help techniques increase their functional performance status and respond better to treatment (Cunningham, et al., 2002).

Self-efficacy is a person's beliefs about his/her own capabilities and influence over events in life (Bandura, 1994). Self-efficacy may influence a person's performance status, which could therefore affect his/her quality of life. Clinical practice and research have suggested that lack of motivation is related to negative health behavior (Carter & Kulbok, 2002). The purpose of this study was to assess self-efficacy as a predictor of functional performance status in order to discover correlations that could be utilized to improve care of the colorectal cancer patient.

RESEARCH QUESTION

One research question guided this study. The question was as follows: Does self-efficacy predict the functional performance status of adult colorectal cancer patients?

Research by Beckham, Burker, Lytle, Feldman, and Costakis (1997) has suggested that patient expectancies about control over cancer related symptoms were related to patient functioning. Knowledge regarding the relationship between self-

efficacy and functional performance status would be beneficial in directing care and treatment plans to assist in maintaining patient performance and functioning.

Perceived self-efficacy may affect the performance status of adult colorectal cancer patients.

THEORETICAL FRAMEWORK

The Revised Health Promotion Model by Nola Pender was utilized as the frame of reference for this study. This framework was useful in presenting an understanding of how a person's self-efficacy can promote an action or behavior. The Revised Health Promotion Model systematically directs and moves the reader through the different stages of a person's action or behavior when that person is faced with an obstacle in relation to their health (Pender, 2002). The model relates prior related behavior and personal factors, including biological, psychological and sociocultural, behavior specific knowledge and feelings that impact achievement of a health promoting behavior. The prior related behavior could include previous attempts at weight loss or smoking cessation for example. The personal factors could relate to age, self-esteem, or family history. These prior related behaviors and personal factors affect behavior specific knowledge and feelings including perceived benefits and barriers of action, perceived self-efficacy, activity-related affect, and interpersonal and situational influences. All of these factors influence the commitment to a plan of action for a particular health promoting behavior. Competing demands and preferences can interfere with a person's sustainability to achieve his/her health promoting behavior.

Psychological, sociocultural, and biological factors influence a person's self-efficacy (Pender, 2002). The person's perceived self-efficacy is also addressed and described as one's "judgment of personal capability to organize and execute a health-promoting behavior" (Sakraida, 2002). This self-efficacy then influences the person's perception of barriers. An intervention to these barriers can be developed through understanding of this perception (Sakraida, 2002).

SIGNIFICANCE OF THE PROBLEM

The ability of the colorectal cancer patient to maintain an effective performance level is imperative to the treatment plan. A patient's performance status can affect his/her quality of life. One major goal of treatment with colorectal patients is to effectively treat the patient while maintaining quality of life (DeCosse & Cennerazzo, 1997). When the patient becomes unable to continue with the activities of daily living, or the quality of life declines, the treatment must be modified. Modification may decrease efficacy of treatment, which becomes a significant issue for patient recovery (DeCosse & Cennerazzo, 1997).

Increased patient self-efficacy is linked with increased adherence to treatment, increased self-care behaviors, and decreased symptoms (Lev, Paul, & Owen, 1999). With this positive reaction, the practitioner would be able to effectively treat the patient without the need for modifications. The nurse would be able to use this knowledge of self-efficacy to plan interventions in order to assist the colorectal cancer patient in preventing a decline in self-efficacy during the course of treatment (Lev, Paul, & Owen, 1999).

ASSUMPTIONS

There were six assumptions that applied to this study. They are as follows:

1. Self-efficacy influences peoples' behaviors and beliefs (Bandura, 1994).
2. Self-efficacy influences peoples' choices and actions (Bandura, 1994).
3. Self-efficacy affects a person's functional performance status (Beckham, Burkner, Lytle, Feldman, & Costakis, 1997).
4. The higher a person's self-efficacy, the higher their functional performance status, with the inverse also being true (Cunningham, Phillips, Stephen, & Edmonds, 2002).
5. All participants will answer questionnaires truthfully.
6. The instruments utilized, the Karnofsky Performance Scale and the Cancer Behavior Inventory Long Form, provide accurate information and results.

LIMITATIONS

There were three limitations that applied to this study. They are as follows:

1. The sample was drawn from a rural area and may not be representative of the population as a whole. Therefore it may be difficult to apply findings of this study to the population as a whole.
2. Cultural beliefs and attitudes may affect the participants' responses to the scales that were utilized.
3. Some of the participants were not permanent residents of the rural area in which the sample was drawn; therefore their culture and beliefs might have been different, thus affecting their responses.

DEFINITION OF TERMS

There were five definitions and terms that applied to this study. They are as follows:

1. Adult was defined as follows:
 - a. Young adult, which is a person who is 18 through 35 years of age (Tucker, 2004).
 - b. Middle-aged adult, which is a person 36 through 65 years of age (McNeill, 2004).
 - c. Older adult, which is a person 66 years of age or older (Dowdall & Taplay, 2004).
2. Cancer was defined as a group of diseases characterized by uncontrolled growth and spread of abnormal cells (American Cancer Society, 2004).
Tumor is another way of describing cancer (American Cancer Society, 2004).
3. Metastasis was defined as cancer that spreads to other sites in the body and begins new growth and destruction at that site (American Cancer Society, 2004).
4. Colorectal cancer was defined as a cancer/tumor of the large intestine (Bland, 1997).
5. Colorectal cancer patient was defined as any person who was a diagnosed with colorectal cancer, contained or metastatic in nature.

OPERATIONAL DEFINITION OF TERMS

There were two operational definitions used in this study. They are defined and explained as follows:

1. Self-efficacy was defined by Bandura (1994) as people's beliefs about their capabilities and how this influences events in their lives. This was measured by the Cancer Behavior Inventory (Merluzzi, Nairn, Hegde, Martinez-Sanchez, & Dunn, 2001).
2. Functional performance status was defined by Bennett, Stewart, Kayser-Jones, and Glaser (2002) as a person's functional ability to carry out the activities of daily living. This was measured by the Karnofsky Performance Scale (Karnofsky, 2003).

CHAPTER II

REVIEW OF RELATED LITERATURE

CANCER

Cells are the structural units of all living things. Cells make it possible for us to carry out all kinds of functions of life: the beating of the heart, breathing, digesting food, thinking, walking, and so on, however, only normal healthy cells can carry out all of these functions. Some cells stop functioning or behaving as they should, serving no useful purpose in the body at all, becoming cancerous cells (American Cancer Society, 2004).

The most fundamental characteristic of cells is their ability to reproduce themselves. They do this simply by dividing. One cell becomes two, the two become four, and so on. The division of normal and healthy cells occurs in a regulated and systematic fashion. In most parts of the body, the cells continually divide and form new cells to supply the material for growth or to replace worn-out or injured cells. In contrast, cancer cells divide in a haphazard manner. The result is that they typically pile up into a non-structured mass or tumor (American Cancer Society, 2004).

Malignant tumors often destroy the part of the body in which they originate and then spread to other parts where they start new growth and cause more

destruction. This characteristic distinguishes cancer from non-cancerous or benign growths. Although benign tumors may grow quite large and press on neighboring structures, they do not spread to other parts of the body. Frequently, they are completely enclosed in a protective capsule of tissue and they typically do not pose danger to human life, as do malignant tumors (American Cancer Society, 2004).

Although cancer is often referred to as a single condition, it actually consists of more than 100 different diseases. These diseases are characterized by uncontrolled growth and spread of abnormal cells. Cancer can arise in many sites and behave differently depending on its organ of origin. Breast cancer, for example, has different characteristics than lung cancer. It is important to understand that cancer originating in one body organ takes its characteristics with it even if it spreads to another part of the body. For example, metastatic breast cancer in the lungs continues to behave like breast cancer when viewed under a microscope, and it continues to look like a cancer that originated in the breast (American Cancer Society, 2004).

COLORECTAL CANCER

Colorectal cancer is a tumor of the large intestine. It is the second most common tumor in both men and women (Bland, 1997). Individuals have a one in twenty risk of developing colorectal cancer in their lifetime (Hempel, 1999).

Colon cancer often develops from small non-cancerous growths in the colon called polyps. Studies have shown that undergoing a test called colonoscopy and having colon polyps removed can prevent up to 90% of all colon cancer cases (Hackensack Digestive Disease Associates, 2004).

Most people with early cases of colon cancer have no symptoms and feel fine. Symptoms that can develop include rectal bleeding, abdominal pain, constipation, diarrhea, and weight loss (Hackensack Digestive Disease Associates, 2004).

TREATMENT

The treatment for cancer is multidimensional. It can include surgery, chemotherapy, and radiation. These treatments can be given alone or in combination. In surgery, the tumor is removed to the line of normal tissue (Itano & Taoka, 1998); however, this can lead to a different appearance in the patient. For example, the breast cancer patient could have one breast removed, the colorectal patient could have a colostomy, and the bone cancer patient could have a limb removed.

Chemotherapy is a chemical or biochemical medication that is administered to the patient by mouth, as an injection into the tissue, as an infusion into a body cavity, or as an infusion into the vein (Itano & Taoka, 1998). This form of treatment can cause numerous side effects for the patient, such as nausea and vomiting, diarrhea, loss of hair, changes in skin color, and loss of the ability to fight infection (immune response). Radiation therapy is the emission of a radioactive wave directed to the specific tumor site (Itano & Taoka, 1998). This can also cause multiple side effects such as color changes to the skin, diarrhea, nausea and vomiting, and loss of ability to fight infection (immune response).

QUALITY OF LIFE

Quality of life is described as an important outcome of health care interventions (Herth, 2000). It comes from a person's sense of well-being that stems from satisfaction or dissatisfaction of life situations that are important to the person

(Herth, 2000). It refers to the patient's perception and ability to carry out his/her activities of daily living while dealing with issues such as pain, depression, and side effects of treatment (Bland, 1997). Quality of life also refers to the patient's perception of the psychosocial, emotional, and physical effects of treatment (Bland, 1997). These feelings of well-being are interpreted by the patient through his/her own personal life experiences and expectations. These psychological issues affect the performance status and quality of life of colorectal patients (Bland, 1997). There are many aspects in regard to a patient's quality of life. Some examples would be a patient's inability to interact with his/her family because of physical pain or the inability to work because of the side effects of treatment. The presence of metastasis, site of tumor, and potential need for surgery and adjunctive therapies are the most important determinates of each patient's subsequent quality of life (Bland, 1997). Each patient has his/her own adaptive responses that determine how he/she will react to these demands (Bland, 1997). Interventions are required to assist the colorectal cancer patient adapt to the demands of therapy and associated side effects (Bland, 1997).

Older colorectal patients have been found to have the highest level of functional performance prior to diagnosis, with a 61% decline following diagnosis based on the Karnofsky Performance Scale (Given, et al., 2001). A decline in functional performance status has been related to the patient's response to side effects cause by treatment (Given, et al., 2001). This decline was noted to be highest in the six activities of daily living, which include eating, grooming, sleeping, exercising, working, and engaging in social relations (Given, et al., 2001).

The goal of treatment for all cancer patients, including colorectal, is to provide a cure. This goal can also be explained as increasing survival and maintaining quality of life for the patient (Isikhan, et al., 2001). The inability to maintain quality of life has been a major concern for cancer patients (Isikhan, et al., 2001). It is understood by the general population that cancer has an uncertain prognosis and can recur at any time. This leads to the uncertainties that cancer patients hold, which can affect their quality of life even when it is maintained.

Practitioners are using quality of life more frequently as an outcome variable in the evaluation of cancer nursing care (Herth, 2000). Nursing and medical interventions should be directed at the influences on the cancer patient's life quality, including self-perceptions, social support, and hope (Herth, 2000).

FUNCTIONAL PERFORMANCE STATUS

Physical activity can be evaluated by a person's performance and activity level (Nies & Kershaw, 2002). Performance refers to a person's ability to perform an activity; where as activity level refers to the quantity or degree of the physical activity (Nies & Kershaw, 2002). Self-efficacy is another determinate of physical activity (Bandura, 1994). Self-efficacy has been shown to be related to maintenance of physical activity (Nies & Kershaw, 2002).

Functional performance status is a patient's ability to perform and achieve their activities of daily living (DeCosse & Cennerazzo, 1997). In order to maintain functioning, the patient must be able to carry out those activities that are important. These activities are different for each patient. For one patient, this could be the

ability interact with their family. Another patient may perceive this as being able to go to work each day. Others may have the need to be able to care for themselves.

Symptoms of cancer and subsequent side effects of treatment such as nausea and vomiting, anemia, ulceration of the gastrointestinal tract, diarrhea, and fatigue can also influence a patient's performance status. Bennett, Stewart, Kayser-Jones, and Glaser (2002) noted that it is the manifestations of the disease that affect functioning and performance of many individuals. Patients under stress have an internal adaptive process that assists in controlling for these disease manifestations so as to maintain functioning and quality of life (DeCosse & Cennerazzo, 1997).

A study by Nies and Kershaw (2002) investigated the psychosocial and environmental influences on physical activity and psychophysiological health outcomes in women. A sample of 198 self-described sedentary women aged 30-60 years was obtained. The results showed that self-efficacy, age, race, and income correlated with physical performance, and restructuring plans, relapse prevention, and age related to physical activity level, and self-efficacy had a direct effect on performance; therefore psychosocial determinates are important factors related to physical activity and performance (Nies & Kershaw, 2002).

SELF-EFFICACY

Bandura (1994) defined self-efficacy as people's beliefs about their capabilities and how this influences events in their lives. More recently Kear (2000) described self-efficacy as a conscious awareness of a person's ability to effectively control actions or outcomes. The underlying premise of self-efficacy is self-regulation of behavior by knowledge, feelings, and motivation (Kear, 2000). A

person's sense of self is obtained and influenced by social influences and experiences, which is a global description of personal essence (Kear, 2000).

Self-efficacy has two aspects of control. These are locus of control and self-actualization (Bandura, 1994). Locus of control refers to a person's belief regarding outcomes (Bandura, 1994). These outcomes occur either by chance, external locus of control, or by direct effort, internal locus of control (Bandura, 1994).

Control of self is sought by persons to maintain self-concept (Kear, 2000). It is motivational process of experiences and knowledge influence personal action and goal attainment (Bandura, 1994). A person with high self-efficacy believes that he/she is capable of a behavior or action and is willing to pursue the activity in spite of the obstacles (Bandura, 1994). A low self-efficacy hinders a person's action when there may be obstacles that hinder him/her (Bandura, 1994). Thus, successful performance determines a person's self-actualization (Kear, 2000).

Self-efficacy beliefs are the basic determinates of a person's behavior (Kear, 2000). Self-efficacy produces specific levels of performance that influence events affecting one's life (Bandura, 1994). These beliefs determine how a person feels, thinks, and motivates his/her behavior (Bandura, 1994). A person with a strong sense of self-efficacy has a higher level of accomplishment and well-being.

It is necessary for cancer patients to have or acquire the ability to self-manage cancer related symptoms and manifestations. A patient's self-efficacy with regard to self-management and coping with his/her disease is one critical factor which impacts the patient's ability to undertake self-care actions that may be necessary for

optimizing his/her performance and quality of life (Cunningham, Phillips, Stephen, & Edmonds, 2002).

A strong sense of efficacy enhances a person's accomplishment and personal well-being (Bandura, 1994). This efficacious outlook reduces stress and lowers vulnerability (Bandura, 1994). Promoting the colorectal cancer patient's self-esteem and sense of well-being promotes quality of life and performance (Bland, 1997). Consequently, the cancer patient with strong self-efficacy, self esteem, and sense of well-being is likely to have an increased ability to manage self-care and maintain functional performance.

Lev (1997) investigated the application of self-efficacy to cancer prevention and adaptation to cancer utilizing self-efficacy theory and review of literature. Findings from examination of the research and application of Bandura's theory of self-efficacy in oncology suggest a relationship between self-efficacy and cancer prevention and adaptation (Lev, 1997). Increased self-efficacy is related to increased adherence to treatment, increased self-care behaviors, and decreased side effect and symptoms (Lev, 1997).

Klemm, Miller, and Fernsler (2000) investigated the most common and intense demands of illness in people with colorectal cancer. A sample of 121 participants who were treated for colon, rectal, or anal cancer was utilized. The main research variables were demands of illness, time since treatment, perception of illness state, activity level, and age. Results showed that colorectal cancer imposed significant psychosocial and existential concerns and hardships on the patient, thus affecting quality of life and performance. The demands of illness were found to be

more significant in the personal meaning domain, with the patient focusing on their value of life and how long they might live (Klemm, Miller, & Fernsler, 2000).

Lev, Paul, and Owen (1999) investigated cancer patient's self-care self-efficacy and measures of adjustment over time, as well as the role of self-care self-efficacy with measures of adjustment. A primary sample of 307 participants was utilized, with 181 participating four months later, and 124, eight months later. The data was analyzed using analysis of variance and canonical correlations. The results of this research demonstrated that without intervention, cancer patient's measures of self-efficacy and adjustment declined over time, and that patient's self-efficacy influenced their adjustment (Lev, Paul, & Owen, 1999).

Cunningham, et al. (1986) investigated the effects of psychological self-regulation strategies, including relaxation, mental imaging, cognitive restructuring, and meditation, on prolonging life. Twenty-two patients with a variety of metastatic cancers participated in weekly group psychological therapy for one year. Findings showed a significant relationship between psychological work and survival duration; therefore, strong personal involvement of patients in psychological work is associated with longer survival duration (Cunningham, et al., 1986).

Landmark, Strandmark, and Wahl (2001) investigated the experience of living with breast cancer. Ten women were interviewed using open-ended in-depth questions. Data revealed that the will to live was the central factor in the women's experiences (Landmark, Strandmark, & Wahl, 2001). The women's immediate reactions influence their continued existence and, through self-understanding, they were able to move toward the future with a specific goal or purpose in everyday life

(Landmark, Strandmark, & Wahl, 2001). As the women turn toward life, they fight death through resistance by creating a new reality that assists them in coping with the fear of living with breast cancer (Landmark, Strandmark, & Wahl, 2001). This research indicates that self-efficacy is integral to the quality of life of cancer patients.

Merluzzi and Martinez-Sanchez (1997) developed the Cancer Behavior Inventory (CBI), which is a scale utilized in measuring self-efficacy for coping with cancer. The CBI is based on psychometric properties. The factor analysis of the CBI yielded six factors which are maintenance of activity and independence, coping with treatment-related side effects, accepting cancer and maintaining a positive attitude, seeking and understanding medical information, affective regulation, and seeking support (Merluzzi & Martinez-Sanchez, 1997). Merluzzi, et al., (2001) revised the scale with the addition of a stress management category. There is a paucity of research in which the CBI is utilized. It has however been tested and retested.

There is minimal research regarding the relationship between self-efficacy and the disease of cancer and a paucity of literature in reference to the relationship between self-efficacy and functional performance status of the adult colorectal cancer patient. Consequently, research to determine if a relationship exists between self-efficacy and functional performance status in adult colorectal cancer patients would add to the body of literature and serve as a resource for clinicians and patients. Ultimately, information in this area could enhance the healthcare outcomes of colorectal cancer patients.

CHAPTER III

METHODOLOGY

RESEARCH DESIGN

A descriptive, correlational, non-experimental, quantitative design was used to investigate the relationship between self-efficacy and functional performance status of colorectal cancer patients. Control for the variables of age, gender, place of permanent residence, and metastasis was established with the use of a demographic questionnaire (see Appendix A). These variables were compared in order to ascertain if differences between the participants affected the results obtained from the collected data.

The hypothesis for this study was that perceived self-efficacy affects the performance status of adult colorectal cancer patients. Therefore, the independent variable was self-efficacy and the dependent variable was functional performance status. The research focused on whether self-efficacy influenced the colorectal patient's functional performance status; however, there were other independent variables that must be included such as demographics, metastasis, and treatment.

SAMPLING PLAN

The sampling plan included a population of 30 adult colorectal cancer patients accessed through three different sites of South Texas Cancer Center, a subgroup of US Oncology/Texas Oncology Physicians Association, an outpatient cancer clinic. Verbal and written consent to recruit participants and conduct the research (Appendix B) was obtained from Texas Oncology Physicians Association.

Criteria for inclusion was that the participant was diagnosed with colorectal cancer and was an adult age 18 years or older. Participants were recruited by invitation to all adult patients diagnosed with colorectal cancer at each office during a two-week period. Following a verbal explanation of the study, the researcher obtained written consent of each participant (see Appendix C). Dignity for human subjects was protected by confidentiality and respect. The researcher has also completed a course review on ethics and Institutional Review Board criteria (see Appendix D) and has obtained approval from the University of Texas-Pan American Institutional Review Board.

DATA COLLECTION METHODS

Data was collected through the use of two instruments. These instruments were the Cancer Behavior Inventory Long Form (CBI-L) (see Appendix E) and the Karnofsky Performance Scale Index (see Appendix F).

The Cancer Behavior Inventory Long Form (CBI-L) was used to measure the general perceived self-efficacy of the participants (Merluzzi, et al., 2001). The CBI-L is a 33-item Likert scale that is designed to measure a participant's self-efficacy for coping with cancer. The CBI-L has a strong reliability as shown by Cronbach's alpha

of 0.94 with a test-retest reliability coefficient of 0.74. Validity of the CBI-L is supported by correlations with measures of participants' quality of life and coping. The CBI-L is scored by summing the participants' ratings across all 33 items to obtain an overall score. It can also be scored across factors. The higher the CBI-L score, the higher the participant's self-efficacy (Merluzzi, et al., 2001). Written permission to use this scale was obtained from Dr. Tom Merluzzi, co-author of the Cancer Behavior Inventory Long Form (see Appendix G).

The Karnofsky Performance Scale Index measured performance status of the participants. This scale, which ranges from 0, being dead, to 100, being able to carry out normal activities, allows for participants to be classified as to their functional status. Also, it allows for comparison of treatments and to assess prognosis. The lower the Karnofsky score the worse the survival for most serious illnesses. There is no information in the literature regarding the measurements on reliability or validity on this scale. This scale has been in use for over 50 years and has shown practiced based reliability and validity, especially with oncology patients (Karnofsky, 2003). Permission for use is not required (see Appendix H).

DATA COLLECTION PROCEDURES

The researcher contacted eligible participants at their appointment times at South Texas Cancer Center. An invitation to participate in the study was extended to each adult colorectal cancer patient after an explanation of the study has been provided. Written informed consent was obtained from the individual participants once they agreed to participate in the study. The participants were provided ample time and assistance in filling out the scales in a private room at the cancer center.

Data collection was completed by the researcher. Participants completed each one of the two scales following a full explanation of the scales by the researcher. The researcher remained available to the participants to answer any questions concerning completion of the scales.

DATA ANALYSIS

Quantitative measures were used to investigate any relationship between self-efficacy and functional performance status. Predictor variables such as age, gender, permanent place of residence, type of treatment patient is receiving and metastasis also were analyzed using quantitative measures so as to ascertain if any of these variables affected the patient's self-efficacy or functional performance status. Stepwise multiple regression analysis was used to test for a relationship between age of patients, gender, permanent place of residence, and metastasis in relation to self-efficacy with a significance level set at $p < .05$. Multiple regression analysis was chosen to test for a measurable multiple correlation between the group of independent variables (self-efficacy, age, gender, permanent place of residence, type of treatment patient is receiving and presence of metastasis) and the one dependent variable (functional performance status). Stepwise solution was used with the multiple regression so as to ascertain which independent variable had the highest correlation to the dependent variable and which variables were significant. This was done by combining forward and backward solution method for data analysis. Pearson product moment correlation was used to assess for the existence of correlations among the variables. Descriptive analysis was used to investigate any differences found in the demographic data.

CHAPTER IV

FINDINGS

The data were analyzed using descriptive statistics, Pearson's product moment correlation, and stepwise multiple regression. The results are presented in the following sections that address demographics, relationships, and predictors.

DEMOGRAPHIC DATA

Out of the 30 participants, 8 (27%) were young adults, 10 (33%) were middle-aged adults, and 12 (40%) were older adults. Twenty-two (73%) of the participants were white, non-hispanic. The male to female ratio was approximately equal with 16 (53%) males and 14 (47%) females. Twenty-six (87%) of the participants were local residents while only 4 (13%) were from out of the state. Eleven (37%) of the participants had metastatic disease, and 25 (83%) were on multiple treatment modalities. These results are outlined in detail on Table 1 titled Demographic Characteristics.

RELATIONSHIPS

The relationships between the independent (functional performance status) and dependent or predictor variables (self-efficacy, age, gender, permanent place of residence, type of treatment patient is receiving and presence of metastasis) were analyzed by Pearson's product moment correlation (Table 2 titled Correlation

Table 1

Demographic Characteristics

Participants	N=30	Percentage
Age		
Young Adult	8	27%
Middle-aged Adult	10	33%
Older Adult	12	40%
Gender		
Male	16	53%
Female	14	47%
Ethnicity		
White, non-hispanic	22	73%
Hispanic	8	27%
Metastasis		
Present	11	37%
Not Present	19	63%
Treatment		
Single Modality	5	17%
Multiple Modality	25	83%
Residence		
Local	26	87%
Non-local	4	13%

Table 2

Correlation Between the Variables

	Karnofsky	Age	Gender	Ethnicity	Self-efficacy	Metastasis	Treatment	Residence
Karnofsky	1.000	-.017	.333	-.116	.530	-.451	-.301	.132
Age	-.017	1.00	-.149	.254	.239	.060	.049	-.017
Gender	.333	-.149	1.000	-.040	.073	-.157	-.223	-.170
Ethnicity	-.116	.254	-.040	1.000	-.030	.459	.207	.237
Self-efficacy	.530	.239	.073	-.030	1.000	-.124	-.041	.127
Metastasis	-.451	.060	-.157	.459	-.124	1.000	.095	-.095
Treatment	-.301	.049	-.223	.207	-.041	.095	1.00	.154
Residence	.132	-.017	-.170	.237	.127	-.095	.154	1.000

Between the Variables). There was a relatively low correlation among the predictor variables. The highest correlation among the variables was between self-efficacy and performance status with a value of .530. This was followed by metastasis and performance status with a value of -.451. The correlation between metastasis and ethnicity was also moderately high with a value of .459. There was also a notable correlation between performance status and gender with a value of .333, and between performance status and treatment with a value of -.301.

In reviewing the data, a relationship was noted between the age of the participants, presence of metastasis, and functional performance status. Of the eight participants that were young adults, seven scored high on the Karnofsky Index, with five having metastatic disease. Of the ten middle-aged adult participants, nine scored high on the Karnofsky Index, with three having metastatic disease. Of the twelve older adult participants, only two scored high on the Karnofsky Index, with neither of them having metastatic disease. These results are outlined on Table 3 titled Correlation Between Age, Metastasis, and Performance Status.

Table 3

Correlation Between Age, Metastasis, and Performance Status

	N=30	High Karnofsky	Metastasis
Young Adult (18-35 years of age)	8	7	5
Middle-aged Adult (36-65 years of age)	10	9	3
Older Adult (66 years of age and older)	12	2	0

PREDICTORS

Stepwise solution using the forward and backward solution method for data analysis was applied with multiple regression to determine which independent variable had the highest correlation to the dependent variable and which variables were significant. Additionally, Pearson product moment correlation was used to assess for the existence of correlations among the variables. The greatest predictor of performance of the adult colorectal cancer patient was found to be self-efficacy with a p score of .003, with metastasis following with a p score of .000. These results were statistically significant and are outlined in detail on Table 4 titled Predictor Relationship Between Self-Efficacy and Performance Status and Table 5 titled Predictor Relationship Between Self-Efficacy and Metastasis and Performance Status.

Table 4

Predictor Relationship Between Self-Efficacy and Performance Status

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2544.126	1	2544.126	10.921	.003
	Residual	6522.541	28	232.948		
	Total	9066.67	29			

Table 5

Predictor Relationship Between Self-Efficacy and Metastasis and Performance Status

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	3909.171	2	1954.585	10.232	.000
	Residual	5157.496	27	191.018		
	Total	9066.67	29			

CHAPTER V

DISCUSSION, IMPLICATIONS, & RECOMMENDATIONS

This study was completed in order to answer the following research question: Does self-efficacy predict the functional performance status of adult colorectal cancer patients? Although this was a pilot study, there was evidence to support the relationship between self-efficacy and functional performance status of the adult colorectal cancer patient. Findings that support the study are self-efficacy as the greatest predictor of functional performance status with a *p* score of .003, and metastasis as a predictor of functional performance status of the adult colorectal cancer patient with a *p* score of .000. These findings support research by Lev, Paul, and Owen (1999) who found that increased patient self-efficacy is linked with increased adherence to treatment, increased self-care behaviors, and decreased symptoms. It also supports findings by Klemm, Miller, and Fernsler (2000) that significant psychosocial and existential concerns and hardships on the patient affected his/her quality of life and performance, and that interventions to increase or maintain his/her self-efficacy improved his/her performance status. This study also supports findings by Lev (1997) that increased self-efficacy is related to increased adherence to treatment, increased self-care behaviors, and decreased side effect and symptoms.

In this study those patients with metastasis were found to have a high performance status. This result was surprising because generally as metastasis occurs, there is found to be a decline in the performance status of the cancer patient (Given, et al., 2001). This maintenance of performance status has been a long-standing issue in regard to care because the performance status of the patient directs and enhances treatment modalities and outcomes (Schultz & Winstead-Fry, 2001).

There are several factors that could be attributed to the high performance status among patients with metastasis in this study. These include psychological and spiritual factors, past behavior, interpersonal influences, along with age and developmental stage.

According to Cunningham, Phillips, Stephen, and Edmond (2002) psychological and spiritual self-help work improves the of quality of life and performance of cancer patients by assisting the patient to overcome barriers that inhibit him/her from taking action in regard to these barriers. Additionally, Pender (2002) has described how prior related behaviors and personal factors are combined with behavior specific knowledge and feelings along with interpersonal and situational events to overcome barriers and progress toward a positive health goal. Bland (1997) has indicated that promoting the colorectal cancer patient's self-esteem and sense of well-being promotes quality of life and performance (Bland, 1997). Because these factors could be influential in enhancing the quality of life in colorectal cancer patients, it is important that they be included in future studies.

Participants in this study who had a high performance status with metastasis were in the young and middle-aged adult age groups. This result may be due to the

life events occurring during this time of life. Such events could be raising children, managing a career, or strong support from significant others. In these age groups people may feel a strong motivation for life. Tasks in these age groups include raising young children, financing older children through school, or enjoying grandchildren. These age groups may also have more responsibilities such as financial support of the family, establishing or promoting their profession or career, or caring for elderly parents. These age groups are also more physically and socially active. They may be highly involved in community efforts, fundraisers, or enjoying life. Guilt of leaving their families at such a young age or at a time of great need could also influence this patient group. Future research is recommended to further investigate the correlation between patients with metastasis and high performance status.

Of the participants, 22 (73%) were white, non-hispanic. This was an unexpected finding. The population in which the data were collected is primarily hispanic, with white, non-hispanics being the minority. More white, non-hispanic participants in this study could be related to the educational level of those who elected to participate. The average educational level for hispanics in this area is approximately eighth grade (U.S. Department of Education, 2004). The average educational level for white, non-hispanics is high school graduate or higher (U.S. Department of Education, 2004). Increased education may make individuals more willing to participate because they may feel less intimidated due to a better understanding of the benefits of research. Educational level was not included in the

demographic questionnaire in this study. Future studies should include educational level in the demographic questionnaire.

Even though evidence was found to support the relationship between self-efficacy and performance status, future studies are recommended with larger samples so as to reinforce the results found in this pilot study. This would lead to a solid foundation for developing interventions to promote high levels of self-efficacy in colorectal cancer patients, enabling the patients to maintain a functional performance status. The patients' tolerance for treatment and outcomes would also improve, thus improving control and cure rates.

In light of this information, a program should be developed, tested, and implemented to assist nurses and colorectal cancer patients to increase their self-efficacy. This program could be based on the Revised Health Promotion Model by Nola Pender. This model provides an excellent framework to assess a patient's prior related behavior and personal factors, allowing him/her the capability to organize and execute a health-promoting behavior (Pender, 2002). The use of such a program for self-efficacy would assist the medical community, especially nurses, the patients, and families to meet the goal of treatment for colorectal cancer patients. That goal is to increase survival while maintaining quality of life (Isikhan, et al., 2001). It is necessary for cancer patients to have and acquire the ability to self-manage symptoms related to their treatment and the cancer. Increasing the patient's self-efficacy is one critical factor in the process of increasing the patient's abilities to self-manage and cope with his/her disease.

The results of this study implore the medical community, especially nurses, to consider each colorectal cancer patient's self-efficacy when developing and monitoring a plan of care. Incorporating actions to increase self-efficacy can increase, or at least maintain, the patient's functional performance status, which will have a positive effect on the treatment outcome and ultimately enhance the quality of life.

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APPENDIX

APPENDIX A
DEMOGRAPHICS

Demographics

Age: _____ Gender: Male / Female

Race: White, non-Hispanic

Hispanic

African American

Native American

Other, Specify: _____

Address: _____
_____Permanent Address: _____

Diagnosis: _____

Metastases: Yes / NO

Location: _____

Treatment: Surgery

Chemotherapy

Radiation

APPENDIX B
CONSENT FROM
US ONCOLOGY/TEXAS ONCOLOGY PHYSICIANS ASSOCIATION

Husfeld, Dollie A

From: Ekery, Fred N MD
Sent: Tuesday, March 18, 2003 4:36 PM
To: Husfeld, Dollie A
Cc: Richardson, Dianne

Dollie,
I spoke with Dr. Paulson and he does not see a problem with your project.
When you have the things we discussed yesterday, fax them to me at 915-533-4369.
Thanks,
Fred Ekery

APPENDIX C
PARTICIPANT CONSENT

Self-Efficacy, Metastasis, Treatment, and Demographics as
Predictors of Functional Performance Status of
Adult Colorectal Cancer Patients

The University of Texas – Pan American

Consent Form

I, _____, am giving my consent to participate in a research study that will focus on self-efficacy and performance status of adult colorectal cancer patients.

I understand that the research will involve an interview that will use scales to measure self-efficacy and performance status. The researcher has informed me that confidentiality will be guarded with a coding system. The researcher has informed me that there are no risks to me with this study.

I understand that I can withdraw from this study at any time. I have been informed that the results from this study could be published in an article. If I have any questions about the study or of my participation, the researcher has assured me that I can ask questions at any time by contacting Dollie Husfeld, BSN, RN at (956) 399-3505. If I have any research related problems or questions regarding subject's (my) rights, I can contact the Human Subject's Committee through Dr. Mark Grandberry, Chair, at (956) 292-7309.

I have been given a copy of this consent form.

Signature of participant

Date

Signature of Witness

Date

APPENDIX D
IRB COURSE REVIEW

**Human Participant Protections Education for Research****Completion Certificate**

This is to certify that

Dollie Husfeld

has completed the **Human Participants Protection Education for Research Teams** online course, sponsored by the National Institutes of Health (NIH), on 03/27/2004.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
- a description of guidelines for the protection of special populations in research.
- a definition of informed consent and components necessary for a valid consent.
- a description of the role of the IRB in the research process.
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

National Institutes of Health
<http://www.nih.gov>

APPENDIX E
CANCER BEHAVIOR INVENTORY
LONG FORM

CANCER BEHAVIOR INVENTORY (CBI-L)

This questionnaire contains many things that a person might do when receiving treatment for cancer. We are interested in your judgment of how confident you are that you can accomplish those things. Make sure your ratings accurately reflect your confidence whether or not you have done it in the past. So, your ratings reflect your confidence that you can do these things now (or in the near future).

Please read each numbered item. Then rate that item on how confident you are that you can accomplish that behavior. Circle a number on the scale. If you circle a "1" you would be stating that you are not at all confident that you can accomplish that behavior. If you circle a "9" you would be stating that you are totally confident that you can accomplish that behavior. Numbers in the middle of the scale indicate that you are moderately confident that you can accomplish that behavior.

Please rate all items. If you are not sure about an item please rate it as best you can.

1. Maintaining independence.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
2. Maintaining a positive attitude.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
3. Accepting that I have cancer.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
4. Maintaining work activity.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
5. Asking nurses questions.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
6. Remaining relaxed throughout treatments and not allowing scary thoughts to upset me.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
7. Seeking support from people & groups outside the family.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
8. Maintaining a daily routine.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
9. Asking technologists questions.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9

10. Coping with hair loss.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
11. Using denial.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
12. Remaining relaxed throughout treatment (chemotherapy, radiation).	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
13. Coping with physical changes.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
14. Ignoring things that cannot be dealt with.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
15. Actively participating in treatment decisions.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
16. Sharing feelings of concern.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
17. Remaining relaxed while waiting at least one hour for my appointment.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
18. Expressing personal feelings of anger or hostility.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
19. Seeking information about cancer or cancer treatments.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
20. Expressing negative feelings about cancer.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9
21. Keeping busy with activities.	NOT AT ALL CONFIDENT 1	2	3	4	MODERATELY CONFIDENT 5	6	7	8	TOTALLY CONFIDENT 9

22. Finding an escape.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
23. Reducing any anxiety associated with getting my blood drawn.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
24. Maintaining a sense of humor.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
25. Accepting physical changes or limitations caused by cancer treatment.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
26. Seeking consolation.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
27. Reducing any nausea associated with treatment (chemotherapy, radiation).	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
28. Maintaining hope.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
29. Asking physicians questions.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
30. Doing something, anything.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
31. Managing pain.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
32. Managing nausea and vomiting.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9
33. Controlling my negative feelings about cancer.	NOT AT ALL CONFIDENT	1	2	3	4	MODERATELY CONFIDENT	5	6	7	8	TOTALLY CONFIDENT	9

APPENDIX F
KARNOFSY PERFORMANCE SCALE INDEX

Karnofsky Performance Scale Index

Directions: Circle the most appropriate answer in the following:

General Category Description	Specific Criteria	Index
able to carry out normal activities; no special care required	normal; no evidence of disease and no physical complaints	100
	able to carry on normal activities but has minor signs or symptoms of disease	90
	normal activity with effort; some signs or symptoms of disease	80
unable to work; able to live at home and care for most personal needs; varying amounts of assistance needed	unable to carry on normal activities or to work; but able to care for self	70
	requires occasional assistance from others; but able to care for most needs	60
	requires considerable assistance from others and frequent medical care	50
unable to care for self; requires institutional or hospital care or equivalent; disease may be rapidly progressing	disabled; requires special care and assistance	40
	severely disabled; death not imminent; stay in hospital indicated	30
	very sick; necessary to be in hospital; active support treatment necessary	20
	moribund	10
	dead	0

APPENDIX G
PERMISSION LETTER FROM
TOM MERLUZZI

tmax

From: <TMerluzzi@aol.com>
To: <tmax@rgv.rr.com>
Sent: Saturday, November 15, 2003 1:29 PM
Subject: Re: Cancer Behavior Inventory

Dear Ms. Husfeld, You can download the CBI from

www.nd.edu/~tmerluzz

Here are the two cites to reference.

Merluzzi, T. V., Nairn, R. C., Hegde, K., Martinez-Sanchez, M. A., & Dunn, L. (2001). Self-efficacy for coping with cancer: Revision of the Cancer Behavior Inventory (Version 2.0). *Psycho-Oncology*, 10, 206-217.

Merluzzi, T. V., & Martinez Sanchez, M. (1997). Assessment of self-efficacy and coping with cancer: Development and validation of the Cancer Behavior Inventory. *Health Psychology*, 16, 163-170.

Best of luck with your research, Tom

My name is Dollie Husfeld. I am a RN who specializes in oncology. I am also a graduate student at The University of Texas - Pan American in Edinburg, Texas. I am working on my thesis and am interested in using the CBI. I am investigating if there is a relationship between self-efficacy and performance status in colorectal cancer patients. I would like to use your tool in my research. Please respond and let me know if I have your permission. I also need a copy of the CBI and manuel.

I thank you for your time and assistance. Also, if you would be interested in receiving a copy of my results, I would be more than happy to sare them with you.

Thank you, Dollie Husfeld, RN, OCN

11/20/2003

APPENDIX H
PERMISSION FOR USE OF
KARNOFSKY PERFORMANCE SCALE INDEX

Promoting Excellence : Karnofsky Performance Scale

Instrument Name:

Karnofsky Performance Scale

Author:

D.A. Karnofsky, MD

Author Contact Information:

Not available

References:

Karnofsky, DA & Burchenal, JH. The Clinical Evaluation of Chemotherapeutic Agents in Cancer. Pg. 196. In MacLeod CM (Ed), Evaluation of Chemotherapeutic Agents. Columbia Univ Press, 1949.

To use this tool:

No permission required

To view this tool:

www.acsu.buffalo.edu/~drstall/assessmenttools.html This site provides two versions of the Karnofsky Index. Scroll down to Functional Ability Tools.

Promoting Excellence in End-of-Life Care is a National Program Office of The Robert Wood Johnson Foundation dedicated to long-term changes in health care institutions to substantially improve care for dying persons and their families. Visit PromotingExcellence.org for more resources.

Promoting Excellence
in End-of-Life Care

VITA

Dollie Husfeld

24 Resaca Vista Drive
San Benito, Texas 78586

Residence: (956) 399-3505
Cell: (956) 454-7134

EXPERIENCE:

<u>Valley Baptist Medical Center</u> , Harlingen, Texas Charge Nurse, Oncology Unit	2003-present & 1996-1999
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<u>South Texas Cancer Center</u> , Harlingen, Texas Nurse Manager	1999-2003
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EDUCATION:

Master of Science in Nursing (M.S.N.)	August, 2004
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University of Texas – Pan American, Edinberg, Texas

Bachelor of Science in Nursing (B.S.N.) University of Texas – Pan American, Edinberg, Texas	December, 1995
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CREDENTIALS:

Oncology Certified Nurse Oncology Nursing Society	May, 1999
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Peripherally Inserted Central Catheters The IV Institute, Boerne, Texas	May, 1996
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Registered Nurse, Texas License	1996, Current
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PROFESSIONAL MEMBERSHIP:

Valley Advanced Practice Nurses Association
Oncology Nursing Society
Texas Nurses Association