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ABSTRACT

This exploratory, descriptive study was designed to describe health care preferences among cancer patients receiving radiotherapy for the first time. In addition, the relationship between selected demographic variables and patients' health care preferences was examined as was the relationship between patients' anxiety and their health care preferences.

A convenience sample of forty newly-diagnosed cancer patients was selected from the population of patients receiving radiotherapy at a large urban cancer treatment facility. The sample included 21 women and 19 men ranging in age from 36 to 79 years. From medical records, the researcher collected relevant demographic information. Patients completed the Health Care Preference Survey, a seven-item forced-choice questionnaire. Each item presented a clinical situation and offered a choice between a cognitive or an affective nursing intervention. Anxiety was measured by the subjects' responses to the State-Trait Anxiety Inventory (STAI).

In most situations, patients preferred cognitive over affective interventions and the preference for cognitive interventions was largely independent of demographic variables. Clinical situation and timing may have affected intervention preference. Patients'
anxiety levels significantly affected their preferences for health care interventions. Patients who had high State anxiety scores preferred affective rather than cognitive interventions.

Incidental findings included subjects' comments about participation in the study and attitudes toward their illness experiences and obtaining information. Implications for nursing practice and recommendations for further research are discussed.
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CHAPTER 1
INTRODUCTION

Overview

The diagnosis and treatment of cancer are generally acknowledged to be stressful psychosocial experiences for patients. Fear, anxiety and emotional distress are often the consequences of the public perception of cancer as a life-threatening illness. Over and above the emotional threats posed by the disease itself are the often equally potent threats posed by the diagnostic procedures, surgery and chemotherapy or radiotherapy. Health care workers have a choice of interventions for dealing with the psychosocial problems of cancer patients. For the purposes of this study, these have been placed in two categories, affective and cognitive. The primary goal of affective interventions is the amelioration of the emotional distress which usually accompanies the diagnosis and treatment of cancer. The primary objective of cognitive interventions, on the other hand, is to assist patients to understand and cope with the multiple, complex and unfamiliar procedures involved in the treatment of cancer. Although not the primary aim, the latter may also serve to ameliorate emotional distress. Given limited resources of time, energy and materiel, the health care worker often faces a choice between putting effort into affective or
cognitive interventions. The literature does not provide much guidance for delivering appropriate, timely and effective interventions. Likewise, there is little literature on which type of health care intervention patients themselves prefer.

**Background and Significance**

A survey in the USA noted that people ranked the fear of cancer higher than the threat of a nuclear holocaust or violent crimes (Cantor, 1978). The diagnosis of cancer evokes many powerful emotions and is generally acknowledged to be a very anxiety-provoking experience (Gullo, Cherico & Shadick, 1974; Vettese, 1976; Blumberg, Flaherty & Lewis, 1980). Cantor (1978) describes the anxiety response as one of the most disruptive of the emotional reactions to cancer.

The anxiety evoked by the disease can become the primary experience of the disease. When this happens, anxiety has not prepared us for action, it has produced an apprehensive self-absorption that obscures the very nature of what threatens us. (p. 19)

However, it is not just the disease which brings on anxiety. Bond (1982) found that patients had significant levels of anxiety and depression as a result of having radiotherapy as the primary mode of treatment.

Over 50% of cancer patients will receive radiotherapy at some point in their illness (Sarna, 1981). A consensus exists among health care workers that these patients should be given some form of preparatory
information (Creech, 1975; Peck & Boland, 1977; Johnson & Flaherty, 1980; Battles, 1981; Bouchard-Kurtz & Speese-Owen, 1981; Cassileth, Heiberger, March & Sutton-Smith, 1982). This information may take many forms, but has the overall goal of helping the patient to effectively cope with the disease and treatment experience.

Before a course of treatment begins, health care workers are legally bound to meet requirements of informed consent, namely the complete and reasonable disclosure of potential risks, benefits and side effects of the proposed treatment (Rozovsky, 1979; Magnet-Rogers, 1980; O'Connor, 1981; Storch, 1982). During the course of radiotherapy, additional information should be presented to enable the patient and his family to effectively manage the predictable side effects of treatment which can occur when the patient returns home (Webb, 1979). All of this information must be carefully tailored to the needs and abilities of patients to comprehend it (Bahnaon, 1975). Information they are given may not correspond with what they want or need. Lauer, Murphy, and Powers (1981) noted that patients and health care workers differ significantly in perceptions of learning needs and of what constitutes important information.
Several authors have observed that anxiety from whatever source interferes with learning new information (Izard & Tompkins, 1966; Lader & Marks, 1971; Pohl, 1978). It is not surprising, therefore, that recent research has documented that cancer patients, in particular, retain little of the information that is imparted to them (Dodd, 1982a; Dodd & Mood, 1981; Israel & Mood, 1982; McIntosh, 1974).

Cancer poses threats to a patient's biological, psychological and social integrity. It is to cope with the last two of these threats that many of the same authors who promote the provision of preparatory information, Bahnson (1975) and Creech (1975) in particular, also recommend the provision of emotional support to cancer patients. Affective health care interventions have two benefits for cancer patients. The first and most direct effect is to help the patient feel more comfortable, less anxious and less emotionally distressed. The second, concurrent effect is to help create the emotional conditions in which learning can best take place. Affective interventions may include listening, encouraging the ventilation of feelings, identifying fears and concerns, teaching stress reduction or relaxation techniques and talking about outside aspects of a patient's life (Gordon, Friedenberg, ...

Thus, health care practitioners are faced with a dilemma. Are they to focus their efforts on cognitive interventions or affective interventions, or both? Much of the literature, as will be seen in Chapter 2, recommends a comprehensive intervention program to address psychosocial problems, but does little to identify patients at greatest risk or in greatest need of the different kinds of intervention. Does the chronological order of the types of intervention make a difference? There are recommendations for affective interventions (emotional support) before information is provided, but the opposite recommendation is also made. Furthermore, literature concerning patient preferences provides very little information about whether patients prefer cognitive or affective interventions or what demographic or psychological factors may affect the preference.

Problem

Little is known about preferences of cancer patients for cognitive or affective interventions prior to or during a course of radiotherapy or how anxiety may affect these preferences. Therefore, this study seeks to add to available knowledge in these areas.
**Purposes**

The study is designed to fulfill the following purposes:

1. To describe health care preferences, as measured by the Health Care Preference Survey [HCPS], among cancer patients receiving radiotherapy for the first time.

2. To examine the relationship between selected demographic variables and patients' health care preferences.

3. To examine the relationship between patients' anxiety, as measured by the State-Trait Anxiety Inventory [STAI], and their health care preferences.

**Definition of Terms**

Health Care Preference: The selection of or preference for a cognitive health care intervention or for an affective health care intervention as described in the items of the HCPS.

Cognitive (Health Care) Intervention: is defined by the items of the HCPS as the provision by a health care worker of facts, information or the explanation of procedures.

Affective (Health Care) Intervention: is defined by the items of the HCPS as the provision by a health care worker of emotional support.
State Anxiety: Defined by Spielberger, (1977) for the STAI as:

a transitory emotional state or condition of the human organism that varies in intensity and fluctuates over time. This condition is characterized by subjective consciously perceived feelings of tension and apprehension, and activation of the autonomic nervous system. Level of A-State should be high in circumstances that are perceived by an individual to be threatening, irrespective of the objective danger; A-State intensity should be low in circumstances in which an existing danger is not perceived as threatening. (p. 39)

Threat: Defined by Spielberger (1977) as:

an individual's idiosyncratic perception of a particular situation as physically or psychologically dangerous. The appraisal of a situation as dangerous or threatening will be determined, in part, by an individual's personality disposition and past experience with similar situations. (p. 30)

Trait anxiety: Defined by Spielberger, (1977) for the STAI as:

relatively stable individual differences in anxiety proneness, that is, to differences in the disposition to perceive a wide range of stimulus situations as dangerous or threatening and in the tendency to respond to such threats with A-State reactions. A-Trait may also be regarded as reflecting individual differences in the frequency and the intensity with which A-States have been manifested in the past, and in the probability that such states will be experienced in the future. (p.39)
Assumptions and Limitations

There are four major assumptions in this study:

1. Both affective and cognitive interventions are vital components of a cancer patient’s radiotherapy treatment.

2. Anxiety is a common emotional response to the diagnosis and treatment of cancer and individual patients vary in the amount and extent of their anxiety response to the disease and treatment.

3. Subjects will truthfully and accurately respond on the data-gathering instruments.

4. The instruments used in the study are reliable and valid.

The major limitation of the study is that the sample population represents only a small subset of all cancer patients in the Cancer Control Agency of British Columbia [CCABC] catchment area and the findings are comparable only to those for similar populations of cancer patients.
CHAPTER 2
REVIEW OF RELEVANT LITERATURE

Introduction

Cancer patients cope with many real and imaginary threats in the course of their diagnosis and treatment. Cancer is often seen as an unexpected death sentence (Quint, 1965; Creech, 1975). It is not surprising that newly diagnosed cancer patients have a predominance of life and death concerns (Weisman & Worden, 1976). Cancer carries a connotation for individuals of fear, prolonged pain, loss of bodily function and mutilation (Creech, 1975). Not only does the disease signify a threat to individual survival but the treatments for cancer according to Holland (1976) "...are sometimes as formidable as the disease itself" (p.264). Rotman, Rogow, Deleon & Heskel(1977), looking at patients undergoing radiotherapy, observed that "Few therapeutic modalities in medicine induce more misunderstanding, confusion and apprehension, than the use of irradiation therapy in cancer treatment." (p.744). Many researchers agree that cancer patients receiving radiotherapy experience high degrees of stress, anxiety and depression (Peck & Boland, 1977; Rotman et al., 1977; Forester, Kornfeld & Fleiss, 1978). While other cancer treatment modalities may evoke similar emotional
responses, the focus of this literature review will be on the concerns of radiotherapy patients.

In addition to the very real threats posed by the diagnosis and treatment of cancer, many patients have frightening fantasies about their futures because the disease is seen as mysterious, intractable and of unknown etiology. Sontag (1977) aptly describes it as "...the disease that doesn't knock before it enters, cancer ... an illness experienced as a ruthless, secret invasion" (p. 5). Sontag further argues that the mysterious character of the disease arouses dread, shame and the fear of contagion in patients and others.

When cancer patients are threatened by new and unfamiliar diagnostic tests and treatments, Friel (1981) considered that a probable response would be a dysfunctional increase in anxiety. Johnson and Blumberg (1984) cite many emotional responses, including shock, anger, guilt, anxiety, depression, grief, bitterness, and self-pity which may correspond to different phases of the cancer experience. During surgery and treatment, commonly reported emotional responses are alienation, fears of mutilation, mortality and denial.

Health care workers recognize the impact of the biological and psychological threats confronted by cancer patients. The clinical dilemma for health care workers is how best to intervene in order to help the
patient cope with the experience of the disease and treatment. There is a range of interventions used by health care workers. For the purposes of this study, only interventions which can be categorized as cognitive or affective will be considered. In this chapter, the researcher will selectively review literature on cognitive and affective interventions, patient preferences for intervention and the effects of anxiety.

**Cognitive Interventions: Patient Education**

Lazarus (1977) defines coping as an intra-psychic process in which an individual recognizes a situation as threatening (appraisal) and takes action to modify the threat. In the process of appraisal certain emotions are evoked, and the cognitive process of taking direct action mediates (reduces) the evoked emotion. The actions or strategies that cancer patients employ to deal with threatening situations and the subsequent emotional distress have been studied by many researchers (Weisman & Worden, 1976; Miller & Nygren, 1978; Welch, 1981; Pruyn, 1983; Gotay, 1984). A number of authors, cited below, have identified patients' need for information and their choice of information-seeking as an effective coping strategy.

Pruyn (1983), studying breast cancer patients, found that uncertainty due to a lack of information produced great stress during diagnosis and treatment.
Seeking information was cited as the most common strategy to reduce uncertainty.

Gotay (1984), in a comparative study of early and advanced stage cancer patients, found that information-seeking was the second most common strategy cited by early-stage patients (after "taking firm action") (p.608), but for the advanced stage patients it came much lower on the list. Among those patients who described themselves as being afraid of cancer, information-seeking was the most common strategy. Weisman and Worden (1976), studying cancer patients in the first 100 days of diagnosis and treatment, found that patients commonly used information-seeking as an effective coping strategy. Nurses have effectively used patients' information-seeking as a basis for support interventions by teaching patients and their families about the disease and its treatment. Welch (1981), retrospectively examining the perceptions of supportive nursing interventions among the families of cancer patients, found that information interventions substantially reduced family anxiety and helped family coping.

Friedman (1980) extensively surveyed the literature on how patients react to cancer in order to construct guidelines for interventions by health care workers. Information-seeking was identified as the number one strategy used by patients to cope with cancer. Mengel
(1982) observed that the most common intervention employed by nurses to help patients cope is to improve the resources of the patients, generally by providing information.

There is little literature regarding cancer patient education compared to other topics in cancer care and the majority of the articles on cancer patient education have been published in nursing journals (Green, 1984). Johnson and Green (1981) found that cancer patient education increasingly has become an integral and recognizable aspect of cancer nursing practice.

The latter view has been substantiated by two nursing groups, the Oncology Nursing Society (ONS) and the American Nurses’ Association in their position paper *Outcome Standards for Cancer Nursing Practice* (1979). Patient education is seen as a recognized and required component of the nursing care of the cancer patient. Although many of the ten outcome standards address the issue of patient education, the second is specifically addressed to information. It reads:

> The client and family possess knowledge about the disease and therapy in order to attain self-management, participation in therapy, optimal living and peaceful death. (p.4)

In the rationale for the above standard other useful principles are laid out:

> The rate and the level of information provided to a client and family is determined
by the individual's intellectual capacity and emotional resources. (p.4)

and:

Securing adequate information is a prerequisite to development of functional coping. (p.4)

Johnson and Blumberg (1984) incorporate many of the themes and issues of the ONS standard in their more formal definition of cancer patient education as:

a series of structured or non-structured experiences which are designed to assist patients to cope voluntarily with the immediate crisis response to their diagnosis, with long term adjustments and with symptoms; gain needed information about sources of prevention, diagnosis, and care; and develop needed skills, knowledge, and attitudes to maintain or regain health status. (p. 9)

Patient education starts with the individual patient as the focus of attention (Abrams, 1966; Bahnson, 1975; Creech, 1975). A number of educational researchers have stated that education programs need to be tailored to the specific needs of patients in order to be effective (Johnson & Green, 1981; Watson, 1982; Jones, McLellan, Shani, Pellegrini, Grover & Engstrom, 1982; Johnson & Blumberg, 1984).

The process of patient education includes recognizing the factors which affect learning. These factors fall into two broad categories; one ability-related and one emotional. The first of these is the most clear-cut and easiest to describe. A patient's intellectual resources and variety of educational experiences are
factors which can affect new learning about diagnosis and treatment (Friel, 1981; Brainerd, 1981). The individual's immediate adaptation to diagnosis and treatment depends in part on his/her intellectual ability and knowledge about cancer (Bahnson, 1975). Age and physical condition also affect a patient's ability to comprehend and to participate in learning experiences (Johnson & Blumberg, 1984).

For cancer patients, many of the emotional responses to their disease and treatment can adversely affect their learning (Blumberg, Flaherty, & Lewis, 1980; Johnson & Blumberg, 1984). Anxiety can be an intense emotion which can interfere with the patient's ability to comprehend and process new learning (Redman, 1978). Williams (1981) argues that cancer patients are a special teaching problem because the associations with cancer are so threatening that the subsequent anxiety is disabling. One source of immobilizing anxiety is "...the lack of perceptual or orienting information about the event before its occurrence" (p.123). Williams maintains that learning (i.e., retaining information) in the early diagnostic and treatment phase of cancer, is impeded by the patient's level of anxiety. She suggests that learning is facilitated in this phase of the illness when nurses pay priority attention and respond to the concerns and issues that the patients perceive as
important before proceeding with any formal teaching.
"Once the patient perceives that the nurse regards his pressing agenda as important, he will regard the information given by that nurse as important" (p.127).
Williams observed that information given by nurses and reinforced over successive visits was retained. Dodd (1982a) also found that information was retained when it was reinforced periodically.

**Affective Interventions: Emotional Support**

Authors discussing affective interventions have taken two approaches. The first encompasses theoretical and clinical recommendations for the form, content and timing of affective nursing interventions. This approach is often taken in nursing textbooks. The second approach includes investigative efforts to identify appropriate affective intervention strategies and evaluate their effectiveness.

Examples of the first approach include Marino and Kooser (1981) and Yasko (1982) discussed below. Marino and Kooser (1981) argue that cancer patients require additional emotional support in periods of high risk such as the diagnosis and treatment phases of their illness. They recommend a range of interventions, including both cognitive and affective. However, they do not provide any guidance as to which interventions should be used first in these high risk phases.
Yasko (1982) recommends that nurses intervene to provide emotional support to radiotherapy patients before they provide information in order to facilitate effective coping. She defines emotional support as nursing behaviors (interventions) such as active listening, exploring thoughts and feelings, and other actions which facilitate the cancer patient's verbalization of cares and concerns. The patient is given necessary feedback from the nurse to initiate and facilitate the coping process.

Clinicians have used other affective interventions to decrease anxiety. Cobb (1984) advocates the use of relaxation techniques. She reports that, although there are no controlled studies in this area with oncology patients, there may be benefits for patients in reducing anxiety and side effects associated with treatments. In Gotay (1984), discussed earlier in the section on cognitive interventions, it was seen that patients and their families sought information. Seeking social support (affective interventions) was also a commonly chosen strategy for patients and their mates at both early and late stages of the disease.

There are few studies of affective interventions in isolation. They are usually studied in combination with cognitive or other interventions. There is not a lot of valid and reliable research because of methodological
problems including possible bias because the researcher is also practitioner, lack of control groups and purely anecdotal evaluations of the success of interventions.

Worden and Weisman (1980) maintain that the relative effectiveness of affective and cognitive interventions is unknown. They attempted to identify "at risk" cancer patients who accepted affective counselling and to differentiate them from a cohort group. They question the use of blanket emotional support programs when the efficacy of counselling in "high risk" cancer patients is unknown.

Gordon et al. (1980) developed and evaluated a variety of affective and cognitive intervention strategies based on an extensive literature review. The researchers evaluated a variety of intervention strategies: 1) provision of information, 2) counselling about the patient's reactions and feelings towards the disease and treatment and 3) environmental manipulation which included referrals and financial support. They reported that both the intervention and control groups experienced improvement over time in psychosocial problems. However, the intervention group evidenced a more rapid decrease in negative affect and experienced both short and long term benefits from the interventions.

Cain, Kohorn, Quinlan, Latimer, and Schwartz (1986) studied the effectiveness of a thematic counselling
model with gynecology patients in both individual and
group formats. The program consisted of a series of
structured thematic sessions in which both cognitive and
affective interventions were combined with a problem-
solving component. Women in the intervention groups had
substantially less psychosocial distress six months and
one year later.

Patient Preferences for Health Care Intervention

The assessment of patients' need and preference for
intervention has often been filtered through the
perceptions of health care workers. Most early research
concentrated on patient preferences within the category
of cognitive interventions. Linehan (1966) was one of
the first researchers to ask what patients wanted to
know about their disease, the treatment and its effect
on their activities of daily living.

They wanted simple answers, and fewer medical
terms. They wanted more explanations of what
was done to them and why; what to expect after
an operation or treatment; more explanation of
nursing procedures. (p.1068)

Dodge (1969), in a study of patients' perceptions
of their cognitive needs, found that patients placed a
higher priority on information that was seen as essen-
tial to their physical and emotional survival. Medical
and surgical patients were interviewed half-way through
their hospital experience and asked to prioritize the
"kinds of information that they felt they should be
given and the relative importance they attributed to receiving various kinds of information" (p.504). She learned that "Patients were particularly concerned with receiving the kinds of information which would enable them to plan realistically for their immediate and long-range lives" (p.509).

Lauer, Murphy, and Powers (1981) found that nurses and cancer patients differed in their perceptions of learning needs. In their study, nurses and patients differed on the rank ordering of 20 general information items. Nurses identified patients' learning needs as: 1) availability of financial assistance; 2) self-care at home and work; and 3) psychosocial issues of communication with friends and families about their concerns. Patients identified learning about their diagnosis as their first concern, followed by 2) plan of care, 3) self-care at home and work; and 4) what their experiences would be like during diagnosis and treatment.

Cassileth, Zupkis, Sutton-Smith & March (1980) studied a mixed sample of 256 cancer patients in the period after their first diagnosis. The patients completed an Information Styles Questionnaire in which they indicated, on a five point Likert-type scale, how much they agreed or disagreed with statements about the amount, type (good news and/or bad) and source of information presented to them. The authors were trying
to determine the degree to which patients preferred to become informed about and participate in their medical care. The study showed that as age increased (the median age was 55.5), the desire for detailed information and for active participation decreased. They also found an increased preference for information among whites, the better educated, and those more recently diagnosed. Sex and performance status were unrelated to information preference.

Levenson, Pfeifferbaum, Copeland and Silberberg (1981) used a more retrospective approach. They looked at a group of cancer patients in a pediatric (age 11 - 20) outpatient setting. After the patients had been through a multi-disciplinary educational program they were asked to answer questions related to amount and source of knowledge and the means by which it was acquired. They were also asked if they would have wanted more information for themselves or for their families. Many (65%) of the patients said they did not feel that more information would have been helpful for themselves personally but 42% said they wanted more information for their families. Sex and diagnosis did not affect the results, as in Cassileth's study, but time since diagnosis and ethnicity did. Specifically, Hispanic patients wanted more information for their parents. In contrast to the findings of the Cassileth study, the
most recently diagnosed were less likely to view additional information as personally helpful.

Few researchers have looked at the timing of giving information to cancer patients. Abrams (1969), examining doctor-patient communications, argues that the style and content of patient communication changes during different phases of the illness. Information, according to Abrams, should be given when the patient offers "...the clues to how much or how little or how often he wishes to discuss his diagnosis and prognosis" (p.317).

Several cancer educators suggest that patients be given anticipatory information prior to diagnosis and treatment in order to decrease anxiety (Marino, 1981; Bouchard-Kurtz & Speese-Owens, 1981; Williams, 1981).

Cancer patients in a number of studies have indicated another factor affecting their learning—the source of information. Adolescents have identified their physicians as their primary source of information about cancer (Levenson et al., 1981). Ambulatory patients have reported that they received their knowledge of their disease and treatment from their physician (Frank-Stromborg & Wright, 1984). They indicated that the discussions with the nurses provided support and reassurance rather than knowledge of their disease and treatment. Bullough (1981) has reported that, although the nursing literature refers to the teaching and
emotional supportive functions of nurses, some breast cancer patients do not always perceive nurses as significant sources of information or of emotional support. Only 20% of a sample of 139 post-mastectomy patients described nurses as a source of information and only 25% identified nurses as a source of emotional support. Bullough attributes this finding to a discrepancy between the nurses' professional image and the actual role that nurses play in the clinical setting.

Dodd (1985), in an exploratory study, attempted to describe cancer patients' preferences for type of information. Preference for information was defined as a preference for cognitive versus behavioral (supportive) information. The study was conducted in an outpatient radiotherapy clinic at a large urban teaching hospital. The researcher examined several variables which might be associated with preference for information, including demographic factors, anxiety and locus of control. Dodd found no significant demographic variables that affected preferences for information and no clear preference was shown for information options (cognitive) over behavioral (supportive) options. She also found no significant relationship between scores on the Health Care Preference Survey [HCPS] and the State-Trait Anxiety Inventory [STAI]. One recommendation of her study was that the HCPS be tested in a variety of
settings to obtain corroborative data on its validity and reliability.

**Anxiety**

Anxiety as it is usually understood is a common emotional state, subjectively perceived as unpleasant in character (Freud, 1936; Groen, 1973). It is often associated with the related feelings of fear, (Mowrer, 1947; Miller, 1948) helplessness, tension and loss of control (Greer, Davidson & Gatchel, 1970). It can be assessed by verbal reports, (Krause, 1961) or by observation of its physiological correlates (Barratt, 1972). Psychologists have demonstrated that anxiety can be a learned response (Mowrer, 1939). Anxiety, when triggered by stress, threat or danger, is a protective response (Miller, 1948). It can activate the organism to a high state of autonomic arousal (Barratt, 1972). When anxiety is out of proportion to the immediate threat, it can be a powerful and potentially disruptive force (Adler, 1950). In many circumstances, anxiety can distort perception and impair problem-solving (Scott, 1983).

Anxiety has not always been understood in this multifaceted manner. For Freud and the psychoanalytic school of psychology, anxiety was a pathological condition, often the result of childhood trauma (Freud, 1936). Later theorists, working from the responses of
healthy people described "normal anxiety." Horney, for example, distinguished normal anxiety as being:

implicit in the human situation of contingency in the face of death....But what characterizes anxiety is the feeling of diffuseness and uncertainty and the experience of helplessness toward the threat. Anxiety is a reaction to a threat to something belonging to the 'core or essence' of the personality. It is a reaction to a threat to some value which the individual holds essential to his existence as a personality. (May, 1950, p.140)

Rollo May (1950) carried the "de-pathologizing" process even further and described normal anxiety as:

that reaction which: (1) is not disproportionate to the objective threat; (2) does not involve repression or other mechanisms of intra-psychic conflict, and, as a corollary to the second point; (3) does not require neurotic defence mechanisms for its management, but can be confronted constructively on the level of conscious awareness or can be relieved if the objective situation is altered.(p. 194)

Psychologists interested in the study of stress have described emotions such as anxiety as based on the "appraisal of threat" (Lazarus & Optin, 1966; Lazarus & Averill, 1972; Lazarus, 1974), especially when that appraisal entails symbolic, anticipatory or other uncertain states. Krause (1961) developed a set of criteria for what he called "transitory anxiety" which included: (1) introspective verbal reports; (2) physiological signs; (3) molar behaviour (restlessness, body posture, distortions of speech); (4) task performance; (5) clinical intuition; and (6) response to stress.
Spielberger (1966, 1972, 1976, 1977) built on Krause's work and differentiated trait anxiety from state anxiety. Trait anxiety was defined by Spielberger (1966) as: "...stable individual differences in a unitary, relatively permanent personality characteristic" (p. 13). State anxiety can be recognized as: "...a transitory state or condition of the organism which varies in intensity and fluctuates over time" (p. 13). This condition is characterized by subjective consciously perceived feelings of tension and apprehension. In Spielberger's theory, state anxiety is usually the result of threat, or the perception of threat which differs from individual to individual depending on personality, disposition and past experience with similar situations.

Husted and Johnson, (1985) found that nurses and patients differ in their perceptions of anxiety. These authors examined the perceptions of nurses and hospitalized oncology patients for transient anxiety, depression and hostility. Their sample population was composed of a mixed group of patients receiving treatment for a variety of diagnoses and at different stages in their disease process. The instrument used was the Multiple Adjective Affect Check List. The care-givers attributed significantly higher levels of anxiety to the patients than did the patients themselves. The researchers found
a negative correlation with client age and client report of anxiety. While the results of the study are interesting, the validity and generalizability of the results are questionable because of a small sample size.

There is a voluminous literature on the subject of anxiety as a common reaction in cancer patients receiving radiotherapy (Peck & Boland, 1977; Rotman, et al., 1977; Forester, et al., 1978). Vettese (1976) acknowledges that the initial period of diagnosis and treatment is the most anxiety-provoking of all phases in the career of a cancer patient. Anxiety occurs at a time when patients must grapple with a large volume of new information related to their disease and proposed treatment. Simultaneously, the information that patients need to cope with the treatment process can be one of the causes of their anxiety depending on their perception of the nature of that information.

Effects of anxiety.

According to Welch-McCaffrey (1985), anxiety interferes with the quality of life of a cancer patient. She describes anxiety as a chronic pervasive condition which manifests itself throughout all phases of the illness. She lists numerous sources for this unsettling emotion such as: the diagnosis itself; change in biopsychological condition; life-style alterations; dependence on health professionals; and treatments.
The symptoms of anxiety can range from objective behaviors and signs to subjective conditions. Wilson and Kneisel (1979) divide the effects of anxiety into three categories—physiological (increased heart rate, elevated blood pressure, tightness of chest, difficulty in breathing, sweaty palms, headache, nausea and/or vomiting, constant state of fatigue, anorexia, diarrhea, urinary frequency, and sleep disturbance); emotional (irritability, restlessness, and diminished initiative), and intellectual (forgetfulness, preoccupation, rumination, lack of concentration, lack of attention to details, and diminished productivity).

Dodd (1982b) observed that cancer patients inappropriately attributed such symptoms as nervousness, irritability, insomnia, and numbness and tingling of hands and feet to the side effects of chemotherapy. She concluded that these symptoms are not unlike those attributed to anxiety by many researchers.

Measurement of anxiety.

The most commonly-used measure of anxiety at the present time is a self-report questionnaire based on Spielberger's State/Trait anxiety theory, the State-Trait Anxiety Inventory [STAI] (Spielberger, Gorsuch, and Luahene, 1970). It has been used extensively. In 1984, Spielberger published a comprehensive bibliography of studies in which the STAI had been used. It has been
used to assess anxiety in many medical areas such as coronary disease, hypertension, diabetes, spinal cord injuries, psychiatry, surgery, obstetrics, gynecology, psychosomatic conditions. Fifteen cancer studies have used the STAI and 80% of these were published in 1979 or later. The studies have included such areas as: decreasing anxiety in mastectomy patients (Baum & Jones, 1978); treatment of insomnia (Cannici, 1980); treating anticipatory nausea and vomiting (Morrow & Morrell, 1982); the use of modelling in reducing situational anxiety arising from procedures (Strnad, 1977); identifying the psychology of radiotherapy patients (Bernay, 1976); identifying demographic variables associated with participation in breast screening programs (Kin, 1981); determining levels of stress and their relationship to the incidence of cancer (Lawson, 1981); emotional responses of pediatric patients to hospitalization (Powazek, Goff, Schyving & Paulson, 1978); and identifying patterns of expression of anger in breast cancer (Morris, Greer, Pettingale & Watson, 1981).

Summary

Cancer and its treatments threaten both the biological and psychological integrity of individuals. The literature indicates that diagnosed patients can be helped to cope with the anxiety and uncertainties that the disease brings by the use of affective and cognitive
Interventions. The literature leaves many questions unanswered as to how nurses can assess what kinds of health care interventions individual patients prefer. Do they prefer cognitive interventions which add to their knowledge and help to familiarize them with the disease and its treatments or affective (supportive) interventions which help them to manage their internal environment? Both types of intervention may help to reduce anxiety. The central issue is that health care professionals lack valid and reliable information about patients' preferences.

A partial solution to this dilemma lies in studies designed to identify patients' preferences for health care interventions in a variety of clinical situations taking into account the influence of anxiety and selected demographic characteristics. This study is designed to address the problem as it relates to a particular group of cancer patients in the hope that nurses can be helped to intervene more effectively.
CHAPTER 3
METHODOLOGY

This study was undertaken to: a) describe health care preferences among cancer patients receiving radiotherapy for the first time; b) examine the influence of selected demographic variables on patients' health care preferences; and c) examine the relationship between patients' scores on a standardized anxiety test and their health care preferences.

In this chapter, the researcher will describe the instruments used to collect the data, the setting for the study, the characteristics of the sample population, the data collection process and the data analysis.

Instruments and Instrument Development

The following instruments were used in the study: a Demographic Questionnaire, the Health Care Preference Survey, and the State-Trait Anxiety Inventory. Each will be discussed in some detail.

Demographic questionnaires.

This instrument, a copy of which is presented in Appendix A, was originally devised by Dodd (1982a). The schedule includes such demographic and treatment variables as age, sex, marital status, ethnic group, diagnosis, disease site, radiation dosage, nature of treatment, performance status as measured on the Karnofsky performance status scale, also included in
Appendix A, and number of radiotherapy treatments, all obtainable from the medical record or, as in performance status, directly ratable. In addition, the subjects were asked to complete a background information sheet listing level of education and occupation, neither of which was otherwise available.

Health Care Preference Survey [HCPS].

The HCPS (see Appendix B) was originally devised by Mood (1982). Her intention was to create a clinically relevant screening and assessment tool for health educators. The HCPS was designed to answer the question: Do patients want affective or cognitive interventions at various points in the diagnosis and treatment process? The survey is a seven item forced-choice questionnaire that is completed by the subject. Each item consists of a clinical vignette describing typical encounters that a patient might have during the course of diagnosis and treatment. Two alternative responses are offered; one includes a cognitive intervention on the part of a health care worker and the other, an affective intervention. The subject is asked to indicate a preference for one of the two.

The HCPS was modified by this researcher with Mood's permission and assistance. The modifications consisted of deleting any specific reference to the gender of the health care provider and rewording Items
3, 4, and 5 for clarity of expression. The content of the items was not altered.

The instrument is scored by assigning 0 to a response which describes an affective intervention and 1 to the response which describes a cognitive intervention. As there are seven items, the possible scores range from zero, indicating seven choices of an affective option, to seven, indicating seven choices for information. Scores between the extremes can be interpreted as either a moderate overall preference for cognitive or for affective interventions, or as a preference for information at some times and for emotional support at other times, depending on the specific items chosen. Included in the HCPS is a concurrent validity item in which the subject is asked to choose one of three types of care that he/she would find most helpful in addition to the medical treatment --an information/education option, an emotional support option and a self-care option.

State-Trait Anxiety Inventory [STAI].

The STAI was developed by Spielberger to assess feelings of apprehension, tension, nervousness and worry. A copy of the Inventory is available from the publisher (Consulting Psychologists Press, 577 College Avenue, Palo Alto, California 94306). It has been used
extensively since its development in 1964 and underwent a major revision in 1976 (Spielberger, 1983).

The Inventory consists of 2 scales of 20 statements each. The subject is asked to rate the statements according to how he/she feels right now (State scale) and then to rate the other 20 statements according to how he/she generally feels (Trait scale). A numerical score is constructed from the weighted score of 1-4 assigned to each response. A rating of 1 indicates a low level of anxiety and 4 the presence of a high level of anxiety. The range of possible scores is from 20 to 80. Spielberger (1983) reports that working adults in a non-stressful situation have mean State anxiety scores in the range of 32.20 to 36.54 while the Trait anxiety scores are in the range of 31.79 to 36.75. In both cases, older subjects have lower mean scores and subjects under stress, whether from medical or surgical treatment, or diagnosed with anxiety reactions, have much higher mean scores.

Setting

The study took place in Vancouver, B.C. in an outpatient radiotherapy department of the A. Maxwell Evans Clinic (AMEC) of the Cancer Control Agency of B.C. (CCABC). This facility treats over 400 radiotherapy patients monthly and is the primary radiotherapy center for the province of B.C. It serves a heterogenous,
multicultural urban population and is the referral facility for the mainland of the province as well as the Yukon and Northwest Territories.

Subjects

The subjects for this study were cancer patients receiving radiotherapy for the first time. They had no previous experience with other cancer treatment modalities with the exception of surgery. They were selected according to the following criteria: 1) able to give legal consent 2) diagnosed as having cancer 3) able to read and write the English language 4) physically able to participate 5) receiving radiotherapy for the first time as a primary treatment or adjunctive to surgery 6) not on medication which could affect anxiety levels, i.e., major or minor tranquilizers or steroids 7) within the first week of treatment.

The first six criteria were those used by Dodd (1985) in her study of health care preferences. The seventh criterion was added on the principle that side effects of treatment, which become more severe after the first week, might confound the data.

The subjects were approached in person by the researcher during their second or third appointment after referral to the AMEC. The subjects who were approached represented a small fraction of all possible radiotherapy patients. Potential subjects were screened
and rejected if their appointments did not coincide with the researcher's availability and/or they failed to meet one or more of the seven criteria. Only a few (five) refused to participate in the study when approached and two either did not complete the questionnaires or filled them out so incompletely that the results had to be discarded. Four hundred patients were treated with radiotherapy during the period from January 14, 1985 to February 14, 1985 and 40 subjects were obtained for the study.

The sample population is neither random nor completely representative—it is a sample of convenience. If this were a larger study, aimed at confirming or rejecting some experimental hypothesis, the nature of the sample might qualify the conclusions or render them invalid (Abdellah & Levine, 1965). This is, however, an exploratory study and its aims are to discover whether relationships exist between the variables under study and to describe the comments and preferences of the subjects. Phillips (1971) has said about this sort of study that:

If the definition of the problem emphasizes the context of discovery, a superior strategy (to a random sample) for a given problem might be to secure detailed data on a non-probability sample. (p. 95)

Human Rights and Ethics
The subjects were contacted by the researcher in person during their second or third clinic appointment at the AMEC. The purpose of the study was explained to them and they were asked to participate. Each subject was informed verbally and through a letter of introduction (see Appendix C) that participation was voluntary. The subjects were given the letter and a patient information sheet (see Appendix D) to take home for their consideration. They were personally contacted again the next day to obtain written consent and to complete the questionnaires.

Data Collection

The subjects completed the questionnaires in a variety of places including the waiting rooms of the AMEC radiotherapy department and at their homes (two subjects). The majority of the patients filled them out after completing their radiotherapy treatment for the day. In all cases, except those who took the questionnaires home, the researcher was present while the forms were completed.

Many subjects spent a great amount of time trying to clarify and explain their responses to the researcher. With few exceptions, the subjects were eager and wanted to talk to the researcher about their experiences and feelings. The researcher listened carefully to their comments and tried to answer their
questions where it was possible to do so without compromising the responses to the instruments. The content of these discussions was recorded and will be reported as incidental data.

The researcher coded the questionnaires and removed all personal identifiers from them to preserve the patients' anonymity. Subjects' names and addresses were kept separate from the data proper so that they could be sent an abstract of the results.

Data Analysis

The analysis proceeded according to the three objectives of the study. 1) The HCPS was scored to determine the subjects' health care preferences. 2) The relationship of the several demographic variables to scores on the HCPS was examined on an item-by-item and overall score basis. 3) STAI scores were examined in relationship to HCPS scores to ascertain their degree of association.

The data from the questionnaires were compiled using the Lotus 1-2-3 (Copyright Lotus Development Corporation, 1983) computer program. The data sorting and statistical functions of the program were used to calculate the means and standard deviations of the variables studied for the whole sample and for various sub-groups as well as for all other calculations.
The statistical tests used depended on the type of data available and on the way(s) it was assigned to different categories. Many of the data collected were nominal in that they could be assigned to different categories but no value or rank could be given to the different groups. Some examples of nominal data included sex, disease site, home region, occupation, ethnic group, and marital status. Other data collected could be called ordinal in that subjects could be ranked as to the number of treatments they had received or number of information choices made on the HCPS. Some of the data could be called interval data because the subjects were not only rankable, but the differences in rank represented known differences in some external measure such as years of education, age, or score on the STAI.

For the purposes of this study and the statistical manipulations carried out all interval data are treated as if they were ordinal. Some power is lost through the use of non-parametric tests, but the loss is more than compensated for by the reduced sample size requirements, and the independence of the resulting probabilities from the shape of the population distribution. Fewer unwarrantable assumptions need to be made about the populations involved and the relationships between them.

Five different situations arose in the examination of relationships between different types of data. Each
situation called for a different statistical test: 1) Where a relationship between two sets of dichotomously grouped data was to be examined, the chi-square test for two independent samples (Siegel, 1956 p 104-111) was carried out; 2) Where one of the data sets included more than two categories, the chi-square test for 'k' independent samples (Siegel, 1956 p 175-179) was used; 3) Where one of the data sets could be treated as two independent samples and the other was rankable, the Mann-Whitney U test was used to find the strength of the relationship; 4) Where one of the data sets included several different classes and the other was rankable, the Kruskal-Wallis one-way analysis of variance (Siegel, 1956 p 184-193) was used; 5) Where both classes of data were at least rankable, the Spearman rank correlation coefficient (Hopkins and Glass, 1978, p 117-119) was computed.
CHAPTER 4

PRESENTATION AND DISCUSSION OF RESULTS

Introduction

The results of the study are reported and discussed in five sections. The initial section is a detailed description of the sample. The next three sections correspond to the three research questions. Section 2 includes a presentation and discussion of the responses to the Health Care Preference Survey. In Section 3 the relationships between scores on the Health Care Preference Survey as a whole and on separate items and the demographic variables are presented and discussed. Similarly, in Section 4 the associations between scores on the Health Care Preference Survey and State-Trait Anxiety Inventory scores are described and discussed. Other findings of the study are presented and discussed in Section 5.

Section 1 - The Sample

Forty outpatients completed the data-gathering instruments. All were newly diagnosed cancer patients who were receiving radiotherapy for the first time. In addition to the instruments completed by the subjects themselves, the researcher collected the following demographic information from their medical records: age, sex, marital status, education, ethnicity, occupation, home town, performance status as measured on the
Karnofsky scale, disease site, numbers of radiotherapy treatments, and nature of treatment. It should be noted again that the subjects constituted a sample of convenience and were not chosen to be representative of the population of cancer patients in B.C.

Age and sex.

The sample included 19 men and 21 women. The age range was from 36 to 79 years with a mean of 61, and both the median and mode were 64 years. Men tended to be somewhat younger (M = 59.7) and women somewhat older (M = 62.1), but the medians for the two groups were similar and the difference was not statistically significant. Complete data on the age and sex of participants are presented in Table I.

Marital status.

Marital status is designated as married and not now married. The latter group includes those who were widowed, divorced, separated or never married. More than one-half of all of the subjects were married with the ratios of married to not married similar for men and women. A summary of sex and marital status for the sample is shown in Table II.

Educational level.

Most of the subjects had 12 or more years of schooling. The range was from 8 to 20 years with mode and median of 9 and 12 years, respectively. Women had
Table I

Distribution of Subjects by Age and Sex

<table>
<thead>
<tr>
<th>Age</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-39</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>40-44</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>45-49</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>50-54</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>55-59</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>60-64</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>65-69</td>
<td>6</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>70-74</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>75-79</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

19 21 40

Table II

Marital Status

<table>
<thead>
<tr>
<th></th>
<th>Not Now</th>
<th>Married</th>
<th>Married</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>12</td>
<td>7</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Women</td>
<td>12</td>
<td>9</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>16</td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>

slightly more years of formal education (M = 11.90 vs M = 11.32) but the difference was not significant. The data are summarized in Table III.
Table III

Educational Levels

<table>
<thead>
<tr>
<th>Years of Education</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-8</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>9-10</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>11-12</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>13-14</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>15+</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

|                  | 19  | 21   | 40    |

Ethnicity.

Only 35 of the 40 subjects indicated an ethnic background on their admission sheet. The sample divided into two groups with those claiming a British background forming one group ($n = 20$) and those with other backgrounds the other group ($n = 15$). The patients included in the other group included many other European backgrounds. There were no Asian, African or Latin American patients in the sample.

Occupation.

The majority of the subjects indicated that they were retired at the time of the study although they had previously held a variety of occupations such as nurse, accountant, teacher or rancher. The occupations which they previously or currently practiced were grouped into
categories by the researcher for convenience. The summary of occupational groupings is presented in Table IV.

Table IV

<table>
<thead>
<tr>
<th>Occupational Group</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemaker</td>
<td>12</td>
</tr>
<tr>
<td>Professional/managerial</td>
<td>10</td>
</tr>
<tr>
<td>Skilled trades</td>
<td>9</td>
</tr>
<tr>
<td>Clerical work</td>
<td>4</td>
</tr>
<tr>
<td>Farmer</td>
<td>4</td>
</tr>
<tr>
<td>Unskilled manual labor</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

**Home region.**

For statistical convenience, the subjects were assigned to two groups based on the home addresses listed on their charts. The first group included 18 subjects from Greater Vancouver urban area and the second included 22 from the remainder of British Columbia.

**Performance status.**

All of the subjects were assigned a performance score by the interviewer following the procedure laid out by Karnofsky and Burchenal (1949) and confirmed as
valid by Yates, Chalmer and Mckegney (1980). The score is based on the subject's description of his or her daily activities. For inclusion in the study, the subjects were required to be ambulatory and coping reasonably well with the activities of daily living. In keeping with that requirement, all 40 subjects scored between 70 and 90 out of 100 on the Karnofsky scale as shown in Table V. The mean score was 79.8 while the median and mode were 80.

Table V

Performance Status

<table>
<thead>
<tr>
<th>Karnofsky Score</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>75</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>80</td>
<td>9</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>85</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>90</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>21</td>
<td>40</td>
</tr>
</tbody>
</table>

Disease site.

The subjects had a variety of disease sites. For convenience, the several different sites have been grouped into broader categories as shown in Table VI.
### Table VI

**Disease Site**

<table>
<thead>
<tr>
<th>Site</th>
<th>GI/GU</th>
<th>Gyn &amp; Breast</th>
<th>Skin</th>
<th>Head &amp; Neck</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>13</td>
<td>15</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**Number of treatments.**

All of the subjects were interviewed during the first week of their radiotherapy treatments. Eight of the subjects were interviewed before their first treatment; the rest had had between one and five radiotherapy treatments each. The mean number of treatments was 2.8 while the median for the entire sample was 4. The mean number of treatments was higher for men at 3.1 than for women at 2.4 although the difference is not statistically significant. Complete information on the distribution of numbers of treatments is presented in Table VII.

**Nature of treatment.**

Radiotherapy was the primary mode of treatment for 16 of the subjects, the only prior surgery having been a diagnostic biopsy. For the remaining 24 subjects, radiotherapy was an adjuvant treatment following surgery.
Table VII

**Number of Radiotherapy Treatments**

<table>
<thead>
<tr>
<th>Number of Treatments</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
<td><strong>21</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

The sample and other populations.

For a variety of reasons, it is difficult to compare the sample directly with either the radiotherapy patient population or the overall cancer patient population. Although the Cancer Control Agency of B.C. sees a great many of the province’s cancer patients and collects some demographic data on each patient seen, its needs and purposes are not the same as those of this study. The Agency does not collect the same demographic information on its patients as has been collected for this study or, at least, it organizes the information along different lines. What can be said is that the sample represents approximately 10% of the new radiotherapy patients treated during the data collection.
period (414), and just under 1% of the patients treated during the last complete year (4729) (CCABC, 1985).

Section 2 - The Health Care Preference Survey

The responses to the HCPS can be considered in two different ways, each of which yields interesting information. When the number of intervention choices is summed to yield an overall score out of seven, that score represents a general tendency to choose the cognitive intervention right through the course of treatment. On the other hand, each individual item may be taken as a test of the subject’s feelings towards a given intervention at a particular stage of the diagnosis and treatment process, and the result is then seven different scores. Each of those scores is an indication of an intervention preference at a particular time or in a particular situation. Before continuing any further with the discussion, it is worth looking at the findings as presented in Table VIII.

Responses to the HCPS.

When the responses to the HCPS are summed for a single preference score, these subjects overwhelmingly preferred the cognitive over the affective intervention, the mean score being 4.98 out of 7. If the subjects had been indifferent to the interventions offered or had preferred an affective intervention, the mean score
would have been 3.5 or less. The scores ranged from 2-7 with the median score 5 and the mode 4.

Table VIII

**Intervention Choices on the Health Care Preference Survey**

**for Individual Items**

<table>
<thead>
<tr>
<th>Item</th>
<th>Intervention</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Subjects (N = 40)</td>
<td>Cognitive</td>
<td>17</td>
<td>28</td>
<td>38</td>
<td>20</td>
<td>32</td>
<td>29</td>
<td>35</td>
<td>199</td>
</tr>
<tr>
<td></td>
<td>Affective</td>
<td>23</td>
<td>12</td>
<td>2</td>
<td>20</td>
<td>8</td>
<td>11</td>
<td>5</td>
<td>81</td>
</tr>
<tr>
<td>Women Only (N = 21)</td>
<td>Cognitive</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td>10</td>
<td>16</td>
<td>15</td>
<td>18</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Affective</td>
<td>13</td>
<td>9</td>
<td>1</td>
<td>11</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>Men Only (N = 19)</td>
<td>Cognitive</td>
<td>9</td>
<td>16</td>
<td>18</td>
<td>10</td>
<td>16</td>
<td>14</td>
<td>17</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Affective</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>33</td>
</tr>
</tbody>
</table>

* Total possible choices are 280, 147 and 133 for all subjects, women and men respectively.

When all items were summed there were 199 choices for cognitive intervention and 81 choices made for the affective intervention. Over the seven items this averages out to 28.4 subjects indicating a preference
for the cognitive intervention on each item. When the items are examined one at a time, some interesting variations from that hypothetical average response pattern appear. The responses to two of the items (3 and 7) were very strongly information-oriented compared to the average of the summed responses. For two other items (1 and 4) the responses lean toward the affective/support intervention. To determine whether the pattern of responses to the variant items was statistically significant, a series of chi-square tests was done. The proportion of subjects choosing the cognitive intervention on any given item was compared to the proportion making the same choice on all the other items combined. As seven different scores went into making up the two by two matrix, the degrees of freedom was set at six. The results are shown in Table IX.

Items 1 and 3 are statistically significant at least at the .05 level and item 4 approaches significance at the .10 level. In item 1, which describes a restless or anxious patient prior to surgery, the subjects chose the affective intervention. In that situation they wanted emotional support and reassurance rather than an cognitive intervention. When advised, as in item 3, that they ought to have radiotherapy, all but two of them chose the cognitive intervention. In item 4, when radiotherapy was to commence in the near future,
they were equally divided between the two options, although that represents a much lower proportion choosing cognitive interventions than the mean for all items.

Table IX

Differences Between Items

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>17/23</td>
<td>28/12</td>
<td>38/2</td>
<td>20/20</td>
<td>32/8</td>
<td>29/11</td>
<td>35/5</td>
</tr>
<tr>
<td>X²c</td>
<td>18.52**</td>
<td>.026</td>
<td>12.99**</td>
<td>10.08*</td>
<td>1.80</td>
<td>.05</td>
<td>6.13</td>
</tr>
</tbody>
</table>

a Items of the Health Care Preference Survey reported for the entire sample (N = 40). b Ratio of cognitive choices to affective choices. c The critical value for X² with df = 6 is 12.6. *p<.10. **p<.05

The subjects did respond to different items in different ways. In an effort to see whether the difference could be accounted for by common features among the items, each item was examined for similarities in content, clinical situation, implied feeling state of the subject, identity of the health care worker involved, type of intervention offered and amount of personal contact involved. The only factor which seemed to affect intervention choice in any meaningful way was the clinical context of the situation presented in the HCPS item. It is interesting to note that the subjects completed the questionnaires during their first week of
radiotherapy treatment. They had passed the diagnostic phase of their illness and were in the active treatment phase. Thus, items 3, 4, 5, 6 and 7 were typical situations that they were currently dealing with. The content of the individual items and the responses to the items are shown in Table X. The literature (Janis, 1958) suggests that the period just prior to surgery can be an anxious time for patients; their preference is for care in the affective realm. Surgery has been described as a threatening event (Johnson, Leventhal & Dabbs Jr., 1971; Johnson & Leventhal, 1974; Cochran, 1984). The difference in wording between items 1 and 3 may be significant. In item 1 the patient has already given permission for surgery and is awaiting both the surgery itself and the diagnostic results it will produce. In item 3, the patient has been advised to take a certain course of treatment. No decision has yet been made and it cannot be made without information. The patient seeks out information in order to make a better decision.

In item 4, the event of radiotherapy is described as in the immediate future. If the subjects view radiotherapy as a threatening event, they may be ambivalent as to their preference for care. In many ways, the situation just prior to radiotherapy is similar to the one just prior to surgery. All decisions have been made and the patients may feel that more
information at that point would be less helpful than 
reassurance. The statistical association for item 4 is 
weakly positive for information as compared to the 
total. Cassileth et al. (1980) suggest that patients 
want information, but the findings do not specify the 
timing of the information. Responses in this study 
suggest that timing may be a critical factor in pat­
ients' preferences for cognitive or for affective 
interventions.

Table X

Content of HCPS Items with Responses.

<table>
<thead>
<tr>
<th>Clinical Situation</th>
<th>HCPS Item</th>
<th>Cognitive/ Information</th>
<th>Affective/ Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-surgery evening</td>
<td>1</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>In hospital-unfamiliar diagnostic test</td>
<td>2</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>Recommendation for radiotherapy treatment</td>
<td>3</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>Prior to radiotherapy commencing</td>
<td>4</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>First treatment</td>
<td>5</td>
<td>32</td>
<td>8</td>
</tr>
<tr>
<td>Concerns about side-effects of radiotherapy</td>
<td>6</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>Family discussions about radiotherapy treatments</td>
<td>7</td>
<td>35</td>
<td>5</td>
</tr>
</tbody>
</table>
Dodd (1985) raises questions about the consistency, the reliability and the validity of the HCPS instrument. Her findings indicated no significant differences in preferences for information among the subjects studied. Dodd used the Coefficient Alpha test (Cronbach, 1951) to determine whether different halves of the test yielded similar results. Her analysis yielded a score for information alpha of .20. She reported that:

Health Care Preference subscales' reliability coefficients were low and would render this instrument suspect of containing noncontributing items. A general rule is that any instrument with an alpha level (Cronbach) lower than .6 is of questionable value. (p.12)

Dodd's use of Cronbach's Alpha assumes that the summed score is equivalent to a preference for intervention. If the HCPS is examined on an item-by-item analysis, the Coefficient Alpha result may not be as powerful an indicator of reliability and validity. Dodd seems to assume that the preference for intervention is or should be consistent over time and in all clinical situations regardless of health care provider or associated feeling state. If the HCPS is measuring patients' preferences for a cognitive or for an affective intervention, it may be picking up a preference at a particular time and in a particular clinical situation. Thus, the HCPS may be a valid and reliable instrument if one takes into account the element of timing.
Concurrent Validity.

In addition to the HCPS, the subjects responded to a concurrent validity item with five options.(see Appendix B) "In general, if you were given a choice by your doctor or nurse as to the type of care you would find most helpful in addition to your medical treatment, which one would you choose?" A summary of the responses is shown in Table XI.

Table XI

<table>
<thead>
<tr>
<th>Concurrent Validity Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
</tr>
<tr>
<td>Number of subjects</td>
</tr>
</tbody>
</table>

The majority of the subjects chose the information option A, "I would want more information." If one includes the subjects that chose option E, "Something different," and then reported that they wanted some combination of information and one of the other choices, the proportion of subjects choosing information is approximately the same as for the overall score of the HCPS.(28/40 = 70%) When the subjects choosing options C and E are kept separate from the rest and a Kruskal Wallis test is done against the ranked HCPS scores (corrected for ties), a significance level of about p = .10 is achieved. The trend indicated by these results
is in the same direction as noted above--people choosing the cognitive intervention on the HCPS also choose option A on the concurrent validity question.

Section 3 - Associations Between the HCPS and Demographic Variables

The variables of age, sex, marital status, level of education, ethnic origin, occupation, home region, performance status, disease site, number of treatments, and primary versus adjuvant treatment were examined to determine whether a relationship existed between any of them and the HCPS as a whole or its individual items. No comparison can be made, based on demographic variables, between this study and Dodd's (1985) study of preferences for information. While Dodd originally intended to look at the relationship between preference for information and demographics, she did not do a demographic analysis because of the low Cronbach Alpha score of the HCPS (M. J. Dodd, Personal communication, April 4, 1985).

Age.

A Spearman's rank correlation done between age and the summed score on the HCPS gave a correlation of less than 0.10. Cassileth et al. (1980), working with a slightly younger sample (median age of 55.5 years), found that age was a significant variable affecting patients' preferences. It does not appear to be significant for the sample in this study. When the
sample was divided into approximate thirds by grouping together all those under 58 years, all those over 66 years and all the others, and those groups were chi-square tested against individual HCPS items, no significant differences were found.

Sex.

Overall, in this study, men chose the cognitive intervention option more often than women. The range of scores for men was 3-7 while the mean was 5.2. The range for women was 2-7 and the mean 4.7. The Mann-Whitney test for dichotomous groups gave a U-score of 159 and a corresponding z-score of -1.1. As the critical value for Z-scores in this situation is 1.64, there is no statistically significant relationship between sex and overall HCPS score.

There are significant results when the sexes are compared on an item-by-item basis. Chi-square tests for sex vs. intervention choice for each item gave one strongly significant result. On item 2, women preferred the cognitive intervention only slightly whereas men strongly chose that option. The value of $X^2$ (1, $N = 40$) for this item was 4.88, $p < .03$. This item is a difficult one to interpret as each option includes two different and possibly contradictory types of interaction. The information option has a nurse present the information and then leave. The affective option has
the nurse stay and comfort the patient. It may be the provision of information or comfort, or the presence or absence of someone else in the room which makes the difference for men or women.

**Marital status.**

No significant association was found between scores on the HCPS and marital status using the Mann-Whitney test for dichotomous groups (married, not married) (U score = 195; Z score = .08). When item-by-item comparisons were done using chi-square tests no significant associations were found. This finding is in accord with that of Cassileth et al. (1980).

**Education.**

Using chi-square tests for three groups with different educational levels, 8-10 years of completed education, 11-12 years, and 13 or more years, no significant association was found on an item-by-item analysis. A Spearman’s rank correlation of years of education with the summed HCPS score produced a correlation of less than 0.10.

**Ethnic origin.**

The categories for ethnic origin were reduced for statistical purposes to two—British (n = 20) and Other (n = 15). Five out of the forty subjects did not indicate an ethnic background. A Mann-Whitney test for dichotomous groups was done with significant results.
(U score = 264.5; Z score = 1.74, p < .04). The item-by-item analysis shows that there are significant results for item 1 (p < .03) and almost significant results for item 6 (p < .06). What is interesting about all of these results is the direction. Subjects of British origin chose the cognitive intervention significantly less often than others, or chose the affective/support option more often than others, whether measured on the summed score of the HCPS or on the individual items mentioned above.

**Occupation.**

A Kruskal-Wallis test was done comparing ranked HCPS scores for five occupational categories—professional/managerial, homemaker, skilled trade, clerical and farmer. A p < .06 level of significance was found. While not quite reaching the p < .05 level set for this study, it closely approaches significance. Most of the difference is possibly due to the lower HCPS scores for the homemaker and higher scores for the professional/managerial categories. The numbers in each category were too small to allow a valid item-by-item chi-square test for occupations and there did not seem to be a reasonable way to collapse occupational categories together.

**Home region.**
A Mann-Whitney test was done with the categories Vancouver (18) and Elsewhere (22). No significant difference was found between these two groups. \((U \text{ score} = 200.5; Z \text{ score} = .027)\) The item-by-item analysis likewise revealed no significant relationship between an urban or rural background and preference for intervention.

**Performance status.**

A Spearman's rank correlation between the ranked HCPS scores and the Karnofsky performance status scores was done with the result being a correlation of less than 0.10. When an item-by-item analysis was done, item 2 (new diagnostic test immediately) yielded a result which closely approached significance. As with other demographic variables, the sample was divided into approximately even thirds corresponding to Karnofsky scores below 80, equal to 80, and above 80 (see Table V). The subjects in poorer physical condition (score < 80) preferred an affective/support intervention while those in better condition (score > 80) preferred information by an 8 to 1 margin. For this relationship the \(X^2\) value was 5.57 \((2, N = 40, p < .06)\). If there had been more subjects with scores below 80, or if subjects with scores below 70 had been admitted to the study and the relationship between performance status and preference remained as indicated, the results may
have reached the critical level for this and possibly other items. None of the other items approached significance.

**Disease site.**

A Kruskal-Wallis test was done comparing the ranks of the HCPS scores, corrected for ties, of subjects with GI/GU, Gyn/Breast, Skin and other cancers. The result, with a probability of $p < .055$, ($H = 7.58; df = 3$), was that subjects with Skin cancers were more likely to choose the information intervention than those with Gyn/Breast, or other cancers. The item-by-item analysis revealed no significant differences.

**Number of treatments.**

The number of treatments already received at the time of interview did not seem to be related to either the overall HCPS score or to any of its items.

**Primary or adjuvant treatment.**

Although prior surgery did not affect overall HCPS scores in any significant way, it was a factor in the responses to item 2 (new diagnostic test immediately). All 16 subjects for whom radiotherapy was the primary mode of treatment wanted more information about the upcoming test. Only one-half (12/24) of those subjects who had had prior surgery opted for the information intervention; the rest chose the support option. $X^2 (1, N = 40) = 13.9, p < .001$. 

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Section 4 - HCPS Scores and STAI Scores

The subjects completed the State-Trait Anxiety Inventory 2-5 days after they had begun radiotherapy treatment. Overall, the anxiety scores were low. Out of a possible 20-80 points, the mean State and Trait scores were 33.13 and 32.86 respectively. As shown in Tables XII and XIII, the female subjects had slightly higher mean State and Trait scores; however, the difference was not statistically significant.

Table XII

State Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>40</td>
<td>33.13</td>
<td>10.99</td>
</tr>
<tr>
<td>Women</td>
<td>21</td>
<td>34.05</td>
<td>11.77</td>
</tr>
<tr>
<td>Men</td>
<td>19</td>
<td>32.11</td>
<td>9.97</td>
</tr>
</tbody>
</table>

Spielberger (1983) provides norms for both State and Trait anxiety scores for working adults at a variety of ages, including the age range from 50 to 69 which includes the 2 central quartiles of the study sample. For S-Anxiety, mean scores for men are 34.51 (SD = 10.34) and for women 32.20 (SD = 8.67). In this study, as indicated in Table XII, men's and women's scores are reversed with men having the lower and women the higher
### Table XIII

**Trait Scores**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>40</td>
<td>32.35</td>
<td>8.69</td>
</tr>
<tr>
<td>Women</td>
<td>21</td>
<td>32.86</td>
<td>8.97</td>
</tr>
<tr>
<td>Men</td>
<td>19</td>
<td>31.79</td>
<td>8.33</td>
</tr>
</tbody>
</table>

mean score. For T-Anxiety, Spielberger reports mean scores for men of 33.86 (SD = 8.86) and for women of 31.79 (SD = 7.78). Again, the relationship between men’s and women’s scores and standard deviations is reversed. Spielberger also cites norms for general medical and surgical patients with no psychiatric complications in the low 40’s (State: $M = 42.68$; $SD = 13.76$, Trait: $M = 41.33$; $SD = 12.55$).

If the diagnosis and treatment of cancer are as threatening as the literature indicates and if the perception of threat is a principal cause of State anxiety as theorized by Spielberger (1966), Lazarus (1977) and others, one would have expected State anxiety scores higher than the norms for the age group involved. Thus, the findings of this study are not consistent with those of previous studies. The subjects have responded to the STAI much more like neutrally stressed working
adults than like patients with a life-threatening and anxiety-provoking illness. There are several possible explanations for the discrepancy.

Spielberger’s normative data show a steady decline in mean scores with age for both State and Trait anxiety; however, the oldest subjects he considers are only 69. If the trend is maintained, the older subjects in the study sample, making up almost one quarter of the total might lower the mean score. This possibility is offset somewhat by the tendency of the youngest quarter of the sample population to raise the mean score. In any case, a Spearman’s rank correlation test shows no statistically significant correlation between either State or Trait anxiety and age for this sample.

Another possible explanation is that anxiety is at least partly the result of anticipation and that the subjects are less anxious because their treatments have started. Unfortunately, however, no correlations were found between State or Trait anxiety and number of treatments. This holds true whether it is number of treatments or treatment versus no treatment.

It may be that some other factor, perhaps associated with the administration of the STAI, had the effect of generally lowering anxiety scores and reported anxiety. Some possibilities are discussed in Section 5.
Correlations between S-Anxiety and T-Anxiety scales

Spielberger (1966, 1972) reports that there will be higher correlations between State anxiety and Trait anxiety in social-evaluative situations and lower correlations in physical danger situations. He (1983) cites a median correlation of $r = .65$ for the seven samples which comprise his normative population. The correlation between State and Trait scores in this study is $r = .47$. The difference between the study's findings and those of Spielberger may be due to the more physical nature of the threat implied by the diagnosis of cancer.

HCPS scores and State anxiety scores.

Spearman's rank correlations done between the overall HCPS scores (corrected for ties) and the State anxiety scores give a correlation of $r = -.49$ corresponding to a significance level of $p < .001$. This very strong correlation indicates that subjects with higher State anxiety had low HCPS scores and preferred affective/support intervention to the provision of information. The reverse was also true in that subjects with lower State anxiety scores preferred the information intervention.

In order to get a better grasp of exactly which items contributed to the correlation, a series of chi-square tests was done. The sample was divided into thirds corresponding to low, middle and high State
anxiety scores. These groups were then tested against the cognitive/affective choice for each HCPS item. Significant results were achieved for items 4 and 6 and a very close to significant result for item 2. For item 4 (radiotherapy starts in 2 days) the low anxiety group (State score < 26) chose the information option by an 11 to 1 ratio. In the high anxiety group (State score > 33), only 4 chose information while 12 chose to talk about their feelings. The middle group was almost evenly split between the two options. This pattern is significant as $X^2 (2, N = 40) = 12.66, p < .002$. For item 6 (side effects of radiation) all 12 of the low anxiety group chose information while the high anxiety group was evenly split. The middle group occupied an intermediate position. This is significant as $X^2 (2, N = 40) = 8.65, p < .02$. Item 2 (new diagnostic test immediately) had a $X^2 (2, N = 40) = 5.87, p < .06$. The lower anxiety group chose information on all three items by an overwhelming margin while the higher anxiety group either chose the affective option or was split between the two options.

**HCPS scores and Trait anxiety scores.**

Correlations between the summed HCPS Scores and the Trait Anxiety scores were not significant ($r = -0.20$). When the Trait scores were used to group the sample into approximate thirds and chi-square tests done for the
individual items, no significant relationships were found.

Section 5 - Other Findings

Introduction.

In addition to the information gathered in response to the study questions, the subjects presented the researcher with other, anecdotal, information. As these comments began to present regular patterns, they were recorded by the researcher. A summary and discussion of the subjects' comments is presented in four parts. The first has to do with the attitude of the subjects towards taking part in this or any other study. The second consists of comments about the questionnaire and other forms used in the study. The third part of this section is an examination of the subjects' statements about information and their own information-seeking behaviours. Many of the subjects spoke about their physical problems in gathering information, and these comments are collected in part four of this section.

The findings in this section are derived from voluntary comments and therefore not all subjects are represented. No absolute numerical information is available on how many subjects commented on a given topic. At the same time, it is possible to rank order comments on related topics. Subsequent studies may pursue these ideas further.
Attitudes of subjects.

If there is any overall impression to be gathered from this group of cancer patients it is that they were eager to talk. The researcher was impressed with their eagerness and willingness to talk about themselves and to volunteer comments about the questionnaires and their experiences. For many subjects, this was their first opportunity to look at and examine comprehensively their experiences during the diagnostic and treatment phases of their illness. The subjects volunteered three common reasons for wanting to participate in the study. The reason most commonly given was the desire to learn more about their illness. These subjects remarked that they wanted more information than they had received during the diagnostic period and saw the study as an opportunity to have discussions with a knowledgeable person. This presented somewhat of a dilemma for the researcher who is a clinician with similar patients. Where it was possible without biasing the instrument responses, the researcher answered the patients' questions.

The second most common reason for participation was that they were bored and had plenty of time. More than one-half of the subjects were from areas outside of Vancouver and were staying in local accommodation. They knew few people locally and were either physically unable or unwilling to engage in many activities outside
of their treatments. They saw participation in the study as an opportunity to socialize and as a distraction.

The third most common reason cited for participation was that they welcomed an opportunity to talk about what had happened to them.

Comments about the questionnaires.

The majority of the subjects took longer than the expected amount of time (20 minutes according to Dodd (1985) who had subjects work alone) to complete the instrument. In many situations, it took them forty to sixty minutes to respond to the 7 items because they constantly talked about their own pre-diagnosis and beginning treatment experiences. They seemed to be trying to compare the hypothetical situations on the HCPS with the actual experiences that they had gone through and to come up with a preference for care based on the nursing and medical care that they had actually received.

The subjects took an even longer period of time to complete the STAI. For many of the subjects, the feeling-oriented items provided an opportunity to describe themselves and to talk about the changes in their lives i.e., their illness, death of a spouse, previous major illnesses or surgeries, changes in jobs, divorce. The opportunity to talk out anxiety-related
feelings as they occurred may have contributed to the low mean State anxiety scores.

Comments about information.

None of the subjects volunteered that they had been given too much information or were ever overwhelmed with information from health care workers. Men more often than women tried to explain their choice of a cognitive/information preference or, more accurately, their failure to choose the affective intervention because they as individuals did not overtly express their feelings. If they did (according to the subjects), staff might think them "senile" and not capable of managing their own affairs.

Subjects who had had previous serious illnesses or who had undergone major surgeries (coronary bypass, cardiac surgeries) commented that they used the same patterns of information-seeking as they had done previously. These subjects reported that they had learned from their previous illness the value of information, how to seek it out, who to get it from, and who to convey it to. These subjects reported very low levels of distress and anxiety and strong preferences for information in every situation. This was such a marked association that a question about prior illness or hospitalization should perhaps have been part of the original study design.
Comments about information and sensory problems.

Some of the interest and desire for more information may be associated with the sensory deficits of the older subjects. Many of the subjects reported that they often had trouble reading or hearing. The researcher discovered this when many of the subjects remarked that they had forgotten their "good" reading glasses at home or that the batteries in their hearing aids weren't working well. The subjects had difficulty reading the small print on the HCPS and the STAI questionnaires and the researcher sometimes had to read both the instructions and the items aloud to them.

Some of the elderly subjects reported that they often had difficulty understanding when medical or nursing personnel talked to them and explained something because of hearing difficulties. In a similar vein, some subjects reported that, because of the size of the print, they really could not read the consent forms that they had signed. They were reluctant to tell the health care personnel and expose their inability. Clearly, some of the subjects had difficulty with both oral and written communications because of sensory deficits. In spite of these deficits, they reported a reluctance to ask for additional information or for clarification of information given. Neither men nor women wanted people to think that they were old and not capable of managing
their own affairs. Another reason for some subjects' reluctance to pursue correct information was their unfamiliarity with hospital sources and channels of information. Often subjects had great difficulty navigating through the treatment system and could not identify appropriate and accessible sources of information.

Summary

In this chapter, the sample has been described in terms of age, sex, marital status, educational levels, ethnicity, occupation, home region, performance status, disease site, number of radiotherapy treatments, and nature of treatment.

Responses to the HCPS were examined item-by-item and as a summed score. When presented, on the HCPS, with a choice between receiving information and receiving a supportive intervention from health care workers, the subjects in this sample overwhelmingly preferred the information option. There were significant differences in the pattern of responses to different HCPS items. The difference may be accounted for by the variation in clinical situation presented in the text of the individual items. For instance, Item 1 describes an anxious pre-surgical patient. The majority of the subjects chose the effective option. When radiotherapy is recommended at the treatment of choice in Item 3, 38 out
of 40 of the subjects preferred information. No association was found between the concurrent validity item and HCPS scores.

With only two exceptions, identified below, the preference for information was constant, regardless of the demographic differences between subjects. Ethnicity and nature of treatment were found to be predictive of the preference for information on isolated items. Subjects of British origin preferred the support option over information on Item 1. On Item 2 subjects for whom radiotherapy was the primary treatment preferred information far more than those for whom radiotherapy followed surgery.

Anxiety scores were lower than the literature suggests considering the potentially threatening nature of cancer diagnosis and treatment. Several explanations are offered for the lower than expected scores but none is entirely satisfactory.

A significant negative correlation was identified between State anxiety scores and the summed HCPS score. Subjects who scored higher on the State scale of the STAI were likely to prefer the supportive option while those with lower State anxiety scores preferred information \( p < .001 \). The same relationship held for two individual items of the HCPS. Just prior to commencing radiotherapy (Item 4) and when learning about the
side-effects of radiotherapy (Item 6), the lower State anxiety score group preferred information significantly more \((p < .02)\) than did those with higher anxiety scores.

In the process of conducting interviews and administering the study instruments, the researcher collected a number of incidental findings. The subjects reported several reasons for taking part in the study including; seeking more information for themselves, relieving boredom, and finding an opportunity to talk out their feelings about the diagnosis and treatment process. The administration of the study instruments brought out two sorts of comments; one about the content of the HCPS and STAI items and another about their format. Many of the subjects were prompted by the content of the items to talk about their own experiences and about their feelings. This talking-out process slowed the completion of the instruments but provided many of these incidental findings. Some of the subjects revealed sensory deficits which made it difficult for them to read the instruments and, in other situations, to read other hospital forms or properly hear and understand what was said to them. Subjects with previous serious illnesses or surgeries were better able to access and use information and to find appropriate
sources for information. Subjects without that experience had more difficulty in information-seeking.
CHAPTER 5
SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This study was designed to describe health care preferences among cancer patients receiving radiotherapy for the first time. Several demographic variables and a measure of anxiety were examined for their effect on preference. An overview of the study is presented in this chapter followed by conclusions, implications for nursing practice and recommendations for research.

Summary

A review of the literature on how cancer patients cope with the diagnosis and treatment of their disease indicates that information-seeking and seeking emotional support are among the most common coping strategies. There is little literature on what kinds of interventions cancer patients perceive as helpful prior to or during their radiotherapy or on the effect of anxiety on their preference for interventions.

This descriptive exploratory study was undertaken at the Cancer Control Agency in Vancouver, B.C. using a demographic questionnaire, the Health Care Preference Survey [HCPS], and the State-Trait Anxiety Inventory [STAI]. Data were collected from 40 radiotherapy patients who met the established criteria. Nonparametric statistical measures were used to determine the extent and direction of relationships between the summed and
item-by-item HCPS scores, the demographic variables and the measures of anxiety.

The study sample was described according to age, sex, marital status, educational levels, ethnicity, occupation, home region, performance status, disease site, and number of radiotherapy treatments. The sample was almost equally divided between men and women with an age range from 36-79 yrs. Just over one-half (24) of the sample was married at the time of the study. The educational levels ranged from 8 to 20 years of formal schooling with a median of 12 years. The largest single ethnic group in the sample was British, 20 of the 35 subjects who indicated a background. The rest included German, French and other European backgrounds. Subjects included homemakers, professionals, members of the skilled trades and smaller numbers of clerical and agricultural workers. They were approximately evenly divided between those who came from the Greater Vancouver area, and those who came from the interior of the province.

Karnofsky performance scores ranged between 70 and 90 with the median at 80 indicating that the subjects were able to cope with most of the activities of daily living. Most of the more common disease sites other than cancer of the lung were found among the subjects and they had received 0 to 5 radiotherapy treatments.
each (median 3). For 16 of the subjects, radiotherapy was the primary form of treatment; the rest had had prior surgery.

Information about patient preferences for health care interventions was collected on the Health Care Preference Survey [HCPS]--a 7-item forced choice questionnaire. Each item of the HCPS consists of a short description of a situation a patient might face during the diagnosis and treatment process and the subject is asked to indicate whether, in that situation, he or she would prefer a cognitive or an affective intervention. Responses to the HCPS were examined from two perspectives—as overall scores and on an item-by-item basis. Subjects overwhelmingly preferred information interventions over affective interventions (mean summed score 4.98 out of 7). Two items were found to be significantly different from the others as regards the strength of the preference for the information intervention. Item 1 presents a pre-surgical situation in which the patient is described as restless or anxious. The subjects (23 of 40) chose the affective/support intervention over the cognitive/information intervention. In item 3, the patient has been advised that radiotherapy is the optimum treatment for his condition. In this case, the subjects overwhelmingly (38 out of 40) chose the information option.
Preference for the cognitive/information intervention appeared to be independent of the majority of the demographic variables. Some variables were associated with a preference for the information intervention but only with respect to selected items. Patients who described themselves as being of British descent preferred affective interventions on item 1—anxious before upcoming surgery—more strongly than those with other backgrounds. Patients for whom radiation was the primary mode of treatment preferred the information intervention on item 2—strange new diagnostic test immediately—much more than those for whom radiation was an adjuvant to prior surgery. Also on item 2, men preferred the information intervention much more strongly than women.

The anxiety scores as measured by the State Trait Anxiety Inventory were lower than expected considering the results of other studies in which patients are in stressful situations. Both the normative data presented in the STAI manual and other studies on medical, surgical and psychiatric patients indicate that the means for State anxiety scores, and often the Trait anxiety scores as well, are in the mid to low 40's out of 80. The means for the study were 33.13 and 32.86 for State and Trait anxiety, respectively. These scores compare favourably with those for healthy, unstressed
working adults (State $M = 33.35$, Trait $M = 32.83$). No totally satisfactory explanation for the lower scores is known although several are offered.

Significant associations were found between State anxiety scores and overall HCPS scores and between the State anxiety score and scores on several individual items. Those subjects with high State anxiety scores were found to have low overall HCPS scores, that is, they preferred affective over information interventions from health care personnel while those with lower anxiety scores preferred the information intervention. The relationship between high State anxiety score and a preference for support, and between lower State anxiety scores and a preference for the information intervention holds particularly strongly for items 4 and 6 (just prior to radiotherapy and side effects of radiotherapy, respectively).

Incidental findings were collected by the researcher when the subjects volunteered comments during data collection. The majority of the subjects reported that they had wanted to participate in the study in order to learn more about their disease and treatments. Some of the elderly men reported that they chose the information items more often than those describing support because they did not express their feelings easily. They stated that if they expressed or asked for
support, health care professionals might think them "senile" and incapable of handling their own affairs. Many of the elderly subjects reported sensory deficits which made reading the questionnaires an impossible task. Often, the elderly subjects stated that they could not understand oral communications from health care workers because of hearing problems. Most subjects with these deficits were reluctant to acknowledge them and ask for assistance and they reported signing consent forms that they could not read. They did not want to be considered "old" and not capable of handling their own affairs. Many of the patients expressed a strong need for information but could not identify appropriate and accessible sources of information.

Conclusions

The following conclusions may be drawn on the basis of the study results:

1. Patients prefer cognitive over affective interventions in most situations. Clinical circumstance and the timing of the interventions appear to affect the intervention preference.

2. With a few exceptions, the preference for information interventions is not related to demographic variables. Some demographic or treatment variables are significant predictors of desired interventions in specific situations. Just prior to surgery subjects
with British backgrounds chose the affective intervention more often than those with other backgrounds. Confronted with a new diagnostic test immediately, patients with radiotherapy as their primary mode of treatment were more likely to select information options than those who had had prior surgery. In the same situation, men tended to choose the cognitive option more often than women.

3. Anxiety level is related to the preference for intervention. Patients who had high State anxiety scores preferred affective rather than cognitive interventions especially on items 4 and 6.

4. Given an opportunity, cancer patients want to talk about their experiences and feelings.

5. For any research with an elderly patient population or one which may have sensory deficits, standard instruments may need to be modified with, for instance, larger type faces and the effect of alternate methods of instrument administration (i.e. reading aloud) needs to be evaluated.

Implications for Nursing Practice

1. Cancer patients vary in their preference for health care interventions. Nurses cannot assume that a preference for information or support noted in one assessment will remain constant through all stages of diagnosis and treatment.
2. Nurses need to be knowledgeable about the pathophysiology and treatments for cancer before they can effectively intervene and satisfy the patients' preferences for cognitive interventions.

3. In assessing learning needs, nurses should recognize that the patient's level of anxiety may influence readiness and needs for learning. Patients who have high anxiety levels may prefer supportive nursing interventions rather than informational ones. When patient teaching is absolutely necessary for patient safety or comfort, efforts should first be made to reduce anxiety.

4. Nurses need to assess for sensory deficits in elderly patients. For example, elderly patients may not be able to read the small print when signing consents. They may have other sensory deficits which may hinder their ability to understand patient education materials and even oral communication.

5. Patients indicated that they want information not just from nurses but from every health care professional they meet. Nurses should recognize their role as members of a multidisciplinary teaching team providing consistent and comprehensive information for patients.

6. Patients indicated that they particularly wanted information at the time that radiotherapy was first offered to them as a treatment modality. In the timing
of patient education programs, nurses need to be aware that patient's desire and motivation to learn may perhaps be high at that time.

7. As cancer patients want to discuss their concerns and experiences with a knowledgeable health care worker, nurses need to plan for and provide opportunities to talk with patients.

Recommendations for Further Study

1. A replication of this study should be carried out using a larger overall sample size in order to investigate the several relationships between demographic variables and the HCPS which approached significance. These include: (a) performance status--patients in poorer condition tended to prefer the affective option on Item 2. (b) Occupation--managerial and professional subjects tended to have higher overall HCPS scores while homemakers had lower scores, indicating a preference for affective interventions. (c) Disease site--subjects with skin cancers were more likely to choose cognitive interventions than those with other disease sites.

2. Further studies are needed to pursue the findings of situation specificity in relation to preference for intervention. An expanded instrument, including more clinical situations and a Likert scale instead of the forced choice, might better test the strength and the specificity of the preference for intervention.
3. Since the timing of nursing interventions through the diagnosis and treatment may be a critical variable in patient acceptance of those interventions, further research is needed to identify stages of the diagnosis and treatment process at which different interventions are most effective and the relative success of comprehensive intervention programs which take advantage of what educators call the teachable moment.
BIBLIOGRAPHY


with cancer: Assessment and informational interventions. *Oncology Nursing Forum*, 9(3), 39-44.


APPENDIX A

Demographic Questionnaire

and

Background Information
Demographic Questionnaire

1. Subject Code No.______
2. Age _____
3. Sex _______

4. Marital Status ______
5. Ethnic Group _______________________

6. Physician ____________________________________________

7. Medical Diagnoses other than cancer ______________________

8. Medications patient is taking ___________________________

9. Cancer Diagnosis ______________________________________

10. Purpose of Radiotherapy - Curative __ Palliative ___

11. Anatomical site of radiation therapy _____________________

12. Radiation Therapy dosage ______________________________

13. Radiation therapy is: Primary __ Adjunctive to surgery___

14. Date of Interview _________________________________

15. Performance status at time of interview with investigator

_________________ (use grade)

Grade

Scale

90-100 Fully active, able to carry on all predisease performance without restriction

70-89 Restricted in physically strenuous activity but ambulatory and able to carry out work of a light and sedentary nature, e.g. light housework or office work

50-69 Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours.

30-49 Capable of only limited self care, confined to bed or chair more than 50% of waking hours

10-29 Completely disabled. Cannot carry on any self care. Totally confined to bed or chair.

0 Dead
Code _____

Background Information

What is your occupation? __________________________
______________________________

Please circle the number below that describes your educational experience.

Elementary School  1 2 3 4 5 6 7 8
High School  9 10 11 12 13
Vocational School
or Junior College  1 2 3 4
College  1 2 3 4
Graduate or
Professional school 1 2 3 4 5

Note

Items 2 through 4 and 6 through 13 on the previous page will be completed using the patient’s medical record. Items 5 and 15 will be asked directly of the patient. At no time is the previous page seen by the Subject.
APPENDIX B

Health Care Preference Survey

and

Concurrent Validity Question
Health Care Preference Survey

The following items describe situations a person might encounter while receiving health care treatment. For each story below, decide which one of the two possible responses would be closest to what you would do if you were in this situation. Because these are entirely personal preferences, there are NO "right" or "wrong" answers.

Please circle an answer for each question. Even if you would prefer another solution, please choose the response (A or B) which most closely resembles what you would choose yourself. Your answers are completely confidential and will be used for research purposes only. Thank you for your assistance.

(1) You are in the hospital and scheduled for surgery. The evening before surgery you find yourself feeling restless and pacing the floor. Which do you think would be more helpful to you:

A. To have a nurse come and reassure you?

B. To view a slide-tape explaining what the day of surgery will be like?

(2) While you are still in the hospital your doctor stops by to tell you that there’s a new diagnostic test that he wants you to undergo. He had arranged for you to have the test done immediately. You don’t know what it will be like except that it involves some new kind of machines and takes about half a day to complete. Which of the following two choices would be most likely to make you feel more comfortable about undergoing the test:

A. Having a nurse accompany you to the examination when undergoing the test, explain exactly what the procedure will be like, and then leave.

B. Having a nurse stay with you and comfort you during the whole procedure?

(3) Your doctor has just advised you that radiation therapy is the best form of treatment. For many people this is an upsetting time. Which of these 2 responses is most like what you would do?

A. I would want to talk with someone about what I was feeling.

B. I would want to find out information about what the treatments would be like.
(4) Your doctor has informed you that your series of radiation treatments will begin in two days. You are to report to the radiation therapy department one hour early to meet with the nurse. Which nurse would you prefer?

A. I would prefer to meet with Nurse A to discuss my cares, concerns or fears.
B. I would prefer to meet with Nurse B to tour the radiation unit and see what the process involves.

(5) You are about to receive your first treatment. There are two technicians on the unit. You will keep the same technician for your entire course of radiation therapy. Which technician would you prefer to give your treatment?

A. Technician A greets you warmly, encourages you to talk about any worries you have, assures you that he/she will be right outside the door, and that he/she can talk with you through the intercom should you need him/her.
B. Technician B carefully explains how you will need to lie on the table, where the machine will be placed what sounds you will hear, and that he/she will answer any questions you have.

(6) You have been worrying a lot lately. One of the things on your mind has been the stories you’ve heard about the side effects of radiation therapy. The nurse can help in several ways. Which do you think would be more helpful for you?

A. The nurse can give you pamphlets that explain the side effects of radiation, and what you can do to minimize them.
B. The nurse can teach you a technique that can help you relax when you are worried.

(7) You have sensed that there is something missing in the discussions you have had with your family about your treatments. Would your family benefit more from learning:

A. More details about how the treatments work?
B. How to communicate more openly?
Concurrent Validity Question

In general, if you were given a choice by your doctor or nurse as to the type of care you would find most helpful in addition to your medical treatment, which ONE would you choose?

_____ A. I would want to get more information about my illness or my treatment, about what’s happening to me and what I should expect to happen.

_____ B. I would want to have more opportunity to talk with someone about how I’m feeling, especially when I get blue or sad or angry.

_____ C. I would want to know more about what I can do for myself so that I can relax more easily, and take care of my mind and body.

_____ D. None of these.

_____ E. Something different: (please explain)
APPENDIX C

Letter of Introduction
Hello:

My name is Chris Salton. I am a registered nurse and a graduate student at the University of British Columbia. As part of my course work for my Master's thesis, I am conducting a study with patients who are receiving radiotherapy for the first time. Your name has been selected from the group of patients receiving radiotherapy for the first time at the A. Maxwell Evans Clinic. I would like to ask you to participate in my study.

The purpose of the study is to learn about what kind of information you see as necessary regarding your radiotherapy. Your preferences for information are useful for health care professionals so that, in future, we will be able to make explanations more meaningful and useful.

If you agree to participate in this study, I will ask you to complete two questionnaires which will take about 15 minutes. I will be available to respond to questions you may have after you have completed the questionnaires.

Your responses to the questionnaires will be anonymous and confidential. There are no identifying names on the questionnaires and the information will be pooled. Only my thesis supervisors will see the questionnaires themselves. The results from this study will only be used for scholarly purposes.
Your participation is entirely voluntary. Your consent to participate or your refusal will in no way affect your present or future care at this facility. You may refuse to respond to any question and you may withdraw from participation at any time.

There are no known risks or benefits to you for participating in this study. The information you provide may be very helpful to health care professionals in the future when planning explanations to patients like yourself.

If you decide to participate, please read the attached consent letter which summarizes the information I have given you. After you have signed it we can arrange a mutually convenient time for you and I to complete the questionnaires.

Thank you for taking the time to read this letter and thank you for considering the possibility of participating in my study.

Chris Salton
Master of Science in Nursing Student
APPENDIX D

Patient Information Sheet
PATIENT INFORMATION SHEET

The investigator's study examines preferences for interventions among patients who are receiving radiotherapy for the first time.

If I agree to participate the following will happen: I will meet the investigator at a mutually convenient time and I will complete some questionnaires which will take about 15 minutes each. The investigator will also obtain information regarding my medical history and treatment from my medical record. All information obtained from the questionnaires will be kept anonymous and confidential. The results will be used for scholarly publications and the investigator's thesis.

I understand that there are no risks or benefits to me from participating in this study. The time I spend completing the questionnaire will not interfere with my clinic appointments or my treatment. It is hoped that the results from the study will help health care professionals provide relevant information to future cancer patients who will receive radiotherapy.

I understand that my participation is voluntary. I may withdraw at any time and this will not affect my present or future care at the A. Maxwell Evans Clinic. I have discussed this study with the investigator and my questions have been answered. I may contact Ms. Salton at if I have further questions.