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NON-PHARMACOLOGICAL PAIN TREATMENT STRATEGIES:

DOES PERSONALITY TYPE INFLUENCE CHOICE?

by

Julie Ann Quam

THESIS

Submitted in partial satisfaction of the requirements for the degree of
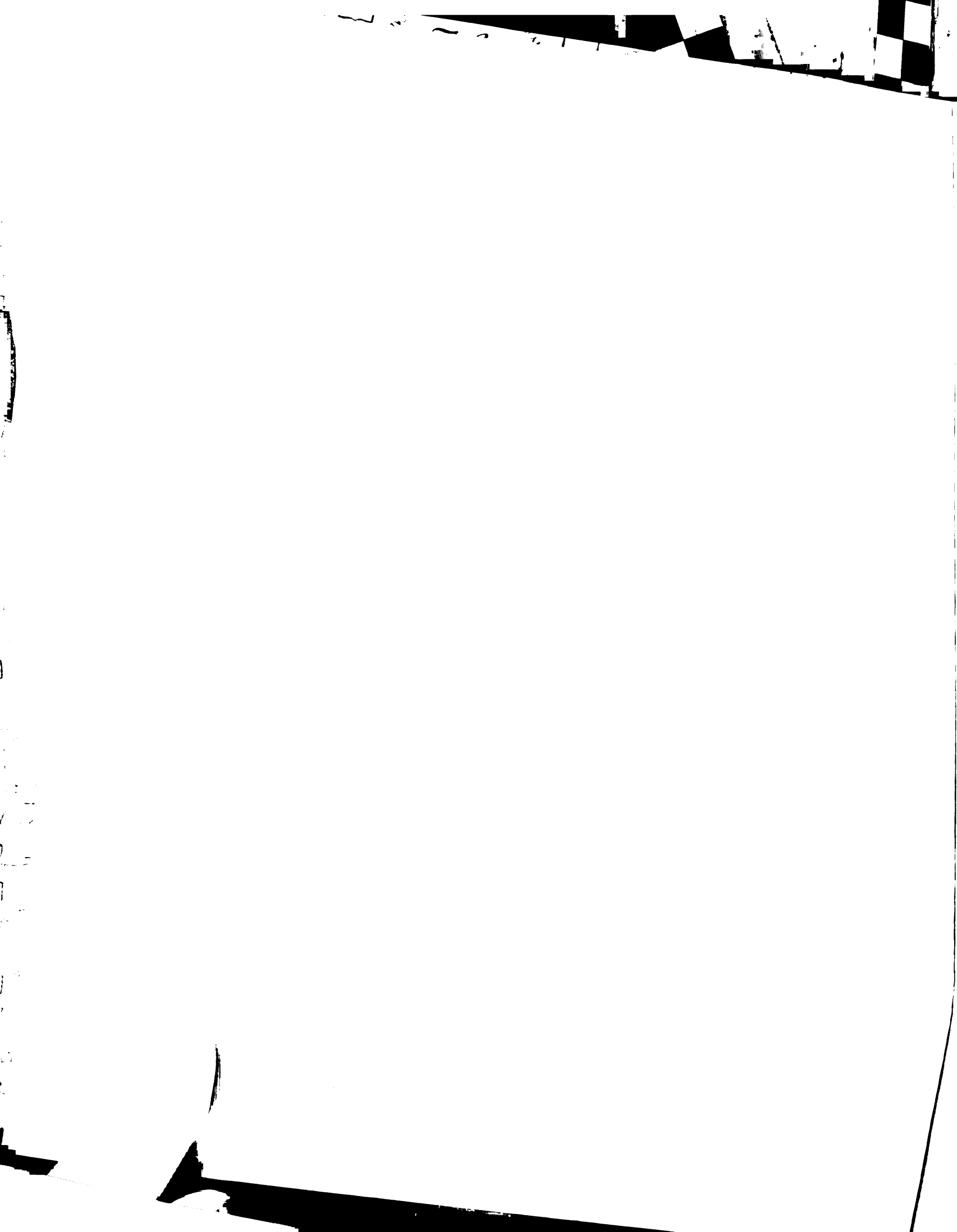
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. San Francisco

DEDICATION

This thesis is dedicated to the many patients and families that have contributed so much to my personal and professional life. Without your inspiration, and perspective on life and death, I would not have been encouraged to pursue a better understanding of health, illness, and my role in improving both. To Pat Brown, who continues to remind me that life is precious, and that friends are forever. To Susie Douville, who allowed me entrance into the most private parts of her life and heart. And to the countless others who have granted me the great privilege of entering their sacred ground.

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And most of all, to my husband, Jeff, who has supported my goals, and accepted the additional responsibility of a full-time student. Your love and friendship sustain me.

ABSTRACT

Non-Pharmacological Pain Treatment Strategies:
Does Personality Type Influence Choice?
by Julie Ann Quam

The high incidence and severity of cancer-related pain necessitates close examination to develop better methods of pain relief. Despite the availability of pharmacological treatments, many patients with cancer-related pain experience unrelieved pain. Pharmacological treatment strategies alone have been inadequate in treating cancer-related pain. Non-pharmacological strategies have been recommended as adjuvant methods to pharmacological methods. The multidimensional model of cancer-related pain describes the many factors that influence pain sensation, expression, and resulting behaviors. The role of personality in the behavioral dimension of cancer-related pain is unknown. This study explored the role of personality type in choice of non-pharmacological treatment strategies for cancer-related pain. Using Jung's typology which describes preferential ways of being, thinking, and acting, this study was conducted to describe the use of non-pharmacological treatment strategies by different personality types. Participants in this study were recruited from a network of ambulatory centers. Participants were instructed to complete a demographic questionnaire that included a Myers-Briggs Type Indicator (MBTI). Project Coordinators reviewed medical records of the participants to obtain medical data related to the cancer diagnosis. Study participants with cancer-related pain, were given an additional questionnaire to complete, detailing their pain characteristics. Two of the four MBTI scales were evaluated in relation to choice of non-pharmacological pain treatment strategy. Introverts were compared to Extroverts, and Judgers were compared to Perceivers in regard to demographic data and pain characteristics. No statistically significant differences were detected between either pairs regarding demographic or pain characteristics. A greater percentage of Extroverts used each non-pharmacological strategy compared to the Introverts. A greater percentage of Perceivers used all but three strategies, compared to the Judgers. The results of the study are discussed, including the limitations, implications for nursing, and recommendations for future research.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

LIST OF TABLES

LIST OF FIGURES

Chapter I

The Study Problem

Introduction

At the time of their diagnosis, as many as 50% of cancer patients experience pain, while up to 90% of patient's with advanced disease experience pain (Bonica, 1990). Between 38 and 50% of ambulatory cancer patient's report the symptom of pain (Ahles, Ruckdeschel, & Blanchard, 1984; Foley, 1979; Portenoy, et al, 1992). Among patients who have advanced disease, 40-50% have been shown to have moderate to severe pain, while 25-30% have been shown to have very severe to excruciating pain (Bonica, 1990). This high incidence and marked severity of cancer-related pain necessitates careful attention from oncology practitioners.

A purely physiologic, unidimensional model of pain has been inadequate to encompass the multiple causes of and responses to cancer-related pain, and has led to a multidimensional model of pain (Ahles, Blanchard & Ruckdeschel, 1983; McGuire, 1987; Melzack & Wall, 1965). While Melzack & Wall (1965) introduced the multidimensional model, Ahles has expanded the model and has related it to cancer pain.

Ahles, et al. (1983) proposed five dimensions to cancer pain, namely a physiologic component, as well as affective, sensory, cognitive, and behavioral components. Realizing the need to incorporate the influence of ethnic background and demographic factors, McGuire (1987) added a sociocultural component to the multidimensional model. It is important that health care professionals evaluate the potential contribution of each component of the model to the individual's total pain experience.

Personality has been defined as an individual's patterns of behavior, and methods of relating to, perceiving, and thinking about self and the environment

1

(Wilson & Kneisel, 1988). Personality theorists have differentiated between personality traits and personality types. While personality traits are reflected by an individual's tendencies of action or reaction, personality type is a more complex representation of an individual that consists of multiple traits (Lazarus, 1971). Personality theorists, such as Jung, suggest that personality type is a reflection of preferred ways of thinking, making decisions, and acting (Jung, 1971).

The role of personality in the pain experience remains unclear. Ahles & Martin (1992) have speculated that personality has an effect on the affective component of the pain experience. Theoretically, it seems likely that personality may also effect the expression of cancer pain and/or the behaviors associated with the pain.

Chronic pain has been evaluated in relationship to personality traits, using measurement tools such as the Minnesota Multiphasic Personality Inventory (MMPI) and the Eysenck Personality Inventory (EPI) (Armentrout, Moore, Parker, Hewett, & Feltz, 1982; Bond, 1971; Bradley, Prokop, Margolis, & Gentry, 1978). However, research, to date, has been inconsistent and even contradictory regarding the correlation between personality measures and the dimensions of cancer-related pain (Bond, 1971; Fotopoulos, Graham, & Cook, 1979). Most cancer pain research that has attempted to evaluate the role of personality factors, have focused on what are generally considered to be negative personality traits, such as neuroticism and hypochondriasis.

Though the sensory dimension of cancer-related pain, as measured by pain intensity, has been correlated with personality traits such as, neuroticism, introversion, hypochondriasis, and locus of control, no studies have described the relationship between personality type and any of the dimensions of cancer-

2

related pain. (Bond, 1971, 1973; Fotopoulos, Graham, & Cook, 1979; Jacox & Stewart, 1973).

The effect personality type may have on any dimension of the cancer pain experience is unknown. It is conceivable that the behavioral aspects of pain, such as pain expression and pain behavior, may be related to personality type. In addition, one could speculate that personality type could affect the pain treatment strategies used by an individual and the potential success of any given strategy.

Non-pharmacological treatment strategies for cancer-related pain have received some scientific attention due to the inadequate results of pharmacological treatments (Black, 1979; Turner & Chapman, 1982). However, anecdotal evidence suggests that the effectiveness of non-pharmacological treatment strategies for cancer pain varies among cancer patients also. One explanation for this difference among cancer patients may be related to the personality type of the individual. It may be that some personality types are more likely than others to employ certain non-pharmacological pain treatment strategies. In addition, personality type may affect how comfortable a patient may feel utilizing certain non-pharmacological treatments and therefore influence the outcome of the intervention. If relationships were established between the use of non-pharmacological interventions and certain personality types, health care professionals might be able to target these types of interventions to certain personality types of patients with cancer-related pain. These non-pharmacological interventions, that were in a sense "personality specific", might enhance the efficacy of pain management for these individuals.

Purpose

The purpose of this study was to describe the use of non-pharmacological pain control strategies by different personality types of ambulatory oncology

3

patients with cancer-related pain. With a greater understanding of the use of non-pharmacological pain relief strategies in this population, more effective pain relief may be achieved.

Assumptions

The following assumptions were used in this study:

1. Pain is a multidimensional phenomenon.

2. Personality type is a measurable phenomenon.

3. Personality type affects behavior.

Definition of Terms

The following operational definitions were used in this study:

1. Non-pharmacological pain relief strategies - all non-drug interventions reported being used by the patient to relieve pain chosen from a list of 19 interventions. Additional interventions, used but not included in the provided list, could be noted by the patient.

2. Personality type - an introvert/extrovert or judger/perceiver as measured by the Myers-Briggs Type Indicator (Myers & Briggs, 1987).

3. Ambulatory oncology patient - a patient receiving outpatient treatment for cancer (not AIDS-related) with any single or combination of the following modalities: (a) chemotherapy, (b) radiation therapy, (c) hormonal therapy, and/or (d) biotherapy.

4. Cancer-related pain - is pain caused by cancer or cancer treatment as determined by a review of the medical record and by the patient's self-report.

4

Chapter II

Review of the Literature

The literature review for this study focuses on 1) the multidimensional model of pain, 2) personality theory, 3) management of cancer-related pain, and 4) the relationship between personality type and non-pharmacological pain control strategies.

Theoretical Framework

Multidimensional model of pain - Melzack & Wall (1965) were the first to suggest a multidimensional model of pain. They described a pain pathway that is influenced by multiple factors, both in terms of pain perceptions and response. Their model, called the gate-control theory of pain, served to direct pain research toward a multidimensional framework.

Utilizing the hypotheses of Melzack and Wall, Ahles, Blanchard, & Ruckdeschel (1983) attempted to elucidate each of the components of cancer-related pain and their inter-relationships in oncology patients. Thirty-seven pain free cancer patients were matched with 40 patients with organic cancer-related pain on the variables of diagnosis, stage of disease, age, sex, and inpatient versus outpatient status. Participants were asked to take part in an interview, which assessed the patients' pain history and current pain status. Participants kept a daily pain diary which contained numeric and visual analogue pain rating scales (VAS), a medication log, and a description of activity level. Patients rated their pain four times during each day; at breakfast, lunch, dinner, and bedtime.

Subjects who were outpatients were asked to complete the McGill Pain Questionnaire (MPQ), the Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI), Symptom Checklist-90 (SCL-90), and a VAS for depression and anxiety. Due to the acuity of their illness, inpatients completed only the MPQ and depression and anxiety VAS. The pain-free control group completed

5

any relevant interview questions, BDI, depression and anxiety VAS, SCL-90, STAI, and the activity level log.

Each psychological assessment reflected at least one component of the multidimensional model of pain, as follows: 1) the sensory component - Numerical Scale Intensity (NSI), pain VAS, pain intensity, sensory MPQ, 2) the affective component - BDI, STAI, SCL-90, depression VAS, anxiety VAS, affective MPQ, 3) the cognitive component - evaluative MPQ, interview question addressing the belief that pain reflects their disease progression, and 4) the behavioral component - medication intake, activity log .

Using ANOVA, statistically significant differences were found between groups regarding certain affective psychological measures. The pain group scored higher on the BDI, the depression and anxiety VAS, and hostility and somatization scales of the SCL-90. Differences were not statistically significant between groups on state-trait anxiety, anxiety or depression, obsessive-compulsion, interpersonal sensitivity, phobic anxiety, paranoid ideation, or psychoticism, as measured by the SCL-90. Interview data, analyzed using the Chi square technique, revealed statistically significant differences between groups with the pain group reporting greater depression and irritability.

Statistically significant differences were also found between the pain and no pain groups on behavioral measures. The pain group spent less time walking/standing than the non-pain group. A Chi square analysis of the interview data revealed a statistically significantly greater number of pain patients reporting less activity.

One-tailed t-tests were done to compare the groups who did and did not believe their pain represented progression of their disease, and the psychological measures. The group who believed their pain represented

6

progression of their disease, scored higher on the STAI, anxiety (SCL-90), BDI, and depression (SCL-90).

Associations between the multidimensional pain components were computed using correlational analysis. Medication intake (behavior) was significantly correlated with NSI (sensory) (0.53), pain intensity VAS (sensory) (0.58), sensory MPQ (0.42), affective MPQ (0.36), and evaluative MPQ (0.42). Activity was negatively correlated with affective and evaluative measures, (-0.38 and -0.43, respectively).

These study findings suggest that there are psychosocial differences between a cancer-related pain group and a control group without pain. It supports the complexity of the pain experience. Generalizability is limited, however, by the small sample size. The unidimensional model of pain, which was prevalent prior to Melzack & Wall (1965), purported that all aspects of pain could be related to pain intensity. This study showed that relationships between psychological variables and pain intensity are not always consistent, and that a multidimensional model may be more representative of the pain experience.

McGuire (1987) added a sixth component to the multidimensional model of pain; the socio-cultural component. Utilizing the early work of Zborowski (1952) and Lipton & Marbach (1984), McGuire formally incorporated the influence of social and ethnic background on the pain experience into the multidimensional pain model. Although the affective and behavioral components of cancer-related pain were the focus of this study, the other dimensions will be discussed briefly.

The physiological dimension of cancer pain has been well described (Baines & Kirkham, 1989; Bonica, 1990; Foley, 1979). Three aspects to the physiological component of pain in cancer patients have been characterized; the etiology of the pain, the type of pain experienced, and other physiologic factors

that may effect the pain (McGuire, 1987). The etiology of pain in cancer patients can be a result of disease related factors (e.g., tumor infiltration of the bone, nerves, or viscera), treatment or procedure related factors (e.g., post-surgical pain, radiation-induced neuropathies, or chemotherapy-induced toxicities), or other factors indirectly or not related to the cancer (e.g., Zoster pain syndromes, rheumatoid arthritis); (Ahles & Martin, 1992; Foley, 1979). The type of pain cancer patients experience can range from acute to chronic and include pain of somatic, visceral, or neuropathic origins (McGuire, 1987; Portenoy, 1989). Other physiologic factors, such as fatigue and disease symptoms, may aggravate the pain (Bressler, Hange, & McGuire, 1986; McGuire, 1987).

The sensory component of cancer-related pain involves the quality, the intensity, and the location of the pain (Ahles & Martin, 1992; McGuire, 1987). The sensory component is a subjective evaluation of the pain and includes the descriptive terminology used by the patient to communicate their pain experience (McGuire, 1987). Identification of the sensory components of cancer pain has been facilitated by the development of the McGill Pain Questionnaire which asks patients to select the adjectives which describe their pain from a list of sensory words, such as dull, heavy, gnawing, or burning (Melzackl, 1975).

The cognitive component of cancer pain consists of how the person thinks about their pain, the meaning they associate with the pain, and their understanding of the pain (Ahles & Martin, 1992; McGuire, 1987; Weisenberg, 1989). The meaning an individual patient ascribes to the cancer pain experience can have a profound effect on that individual's pain experience (Craig, 1989). For example, patients who attribute their pain to disease recurrence or progression report greater pain intensity then patients who think their pain is due to a benign process (Ahles & Martin, 1992).

The affective component of cancer pain includes the psychological factors associated with pain, the feelings that precipitate a pain response, and the emotional reactions to the pain experience (Ahles & Martin, 1992; McGuire, 1987). Anxiety and apprehension have been associated with greater pain, and theoretically, feelings of isolation, loneliness, and fear, due to the disease or treatment, may cause anxiety and apprehension in the cancer patient, which may result in greater pain (Melzack, Abbott, Zackon, Mulder, & Davis, 1987). The role of personality characteristics in the pain experience is yet unclear, but may modulate the pain experience (Ahles & Martin, 1992; Craig, 1989).

The behavioral component of cancer pain can include the actions that are used to communicate the pain, relieve the pain, or that aggravate the pain (Ahles & Martin, 1992; McGuire, 1987). Behaviors such as guarding, moaning, or grimacing, are used in response to pain and communicate to others the pain experience (Ahles & Martin, 1992; Wilkie, Lovejoy, Dodd, & Tesler, 1988). Actions such as increasing or decreasing activity level and medication intake, are used to alleviate pain (Wilkie, Lovejoy, Dodd, & Tesler, 1988).

The sociocultural component of cancer pain includes the demographic characteristics, ethnic background, and social support that may effect the pain experience (Ahles & Martin, 1992; McGuire, 1987). Cancer pain behaviors can vary among individuals and may be culturally determined (Lipton & Marbach, 1984; Zborowski, 1952). The socio-cultural meanings associated with a disease or treatment and culturally acceptable pain behaviors may influence the pain patient's experience or their response to the pain (Jacox, 1977).

While the multidimensional pain model provides a framework for evaluating cancer-related pain, each dimension of the model is complex. Relationships between each of the dimensions of the multidimensional model

9

likely exist. These complex relationships between components warrant clarification by further research.

Ahles & Martin (1992) provide an excellent review of the literature on each component of the pain experience. They support the need for further research on the affective component of the pain experience, including the role of personality in the pain experience.

Personality theory - Psychologists have long been attempting to characterize individuals based on their similarities and differences. Personality theorists have attempted to explore and document the patterns of behavior, and methods of relating to, perceiving, and thinking about self and the environment, which comprises a person's personality (Wilson & Kneisel, 1988). Personality trait theorists have classified individuals based on specific tendencies of action or reaction (Lazarus, 1971). Personality traits are described as a disposition to react with a certain response in a given situation (Lazarus, 1971). The trait approach to personality assessment attempts to describe basic properties of an individual that direct their behavior (Atkinson, Atkinson, & Hilgard, 1983). Critics of trait theory have argued that traits vary among differing situations (Atkinson, Atkinson, & Hilgard, 1983).

Type theorists, on the other hand, strive for a more global view of personality. A person is categorized into a particular type by displaying a pattern of traits (Lazarus, 1971). Types are generally made up of complex systems of traits that have been simplified into a few main categories (Lazarus, 1971). One must possess a variety of traits to be classified as a certain type.

Jung's personality typology is a widely recognized personality classification model (Jung, 1971). Jung's theory of personality type classifies individuals according to their dominant preferences. Jungian type theory is a positive, nonjudgmental method of characterizing personality. Unlike many of

10

the personality trait assessment tools, which measure what are typically regarded as negative, disturbed, or pathologic personality traits, Jungian typology describes normal, or non-pathologic, personality preferences.

Jungian theory reflects preferences on four separate scales which consist of 1) where an individual likes to focus their attention, 2) how they acquire information, 3) the way they like to make decisions, and 4) how they orient to the outer world (Myers, 1987). Each scale has two polar preference dimensions, Introversion-Extroversion, Sensing-Intuition, Thinking-Feeling, and Judgment-Perception.

Individuals who prefer Introversion tend to focus on their own inner world, whereas those who prefer Extroversion focus on the outer world of people and are energized by others (Myers, 1987). The Sensing and Intuition scale reflects two methods of perceiving. The Sensing dimension represents a preference to acquire information through the five senses, whereas the Intuition dimension represents a preference for a more creative process of looking for meanings and potentials (Murray, 1990). The Thinking-Feeling scale reflects a preferred method of making decisions or judgments. The Thinking individual prefers to predict the logical consequences and decide objectively. The Feeling individual prefers to make decisions based on personal values (not based on emotion as may be construed). The Judgment-Perception scale reflects an orientation toward the outer world based on a preference for one of the two previous scales. A person takes either a judging (thinking or feeling) attitude or a perceiving attitude (sensing or intuition) toward the outer world. One who takes a judging attitude prefers a planned, orderly way of life, whereas a person who takes a perceiving attitude prefers to live spontaneously and seek to understand life, rather than control it (Myers, 1987).

While personality type, according to Myers (1987), is reflected in a combination of four of the eight preference scale dimensions, this study more closely evaluated two preference scales, namely, the Introvert/Extrovert and Judger/Perceiver scales, and their effect on pain relief behavior. This study may help us to discern whether individuals who prefer to focus their attention on their inner world, and are therefore classified as an Introvert, prefer certain non-pharmacological pain treatment strategies, whereas individuals who focus their attention on the outer world, and are classified as an Extrovert, may use different treatment strategies. In addition, a person's orientation toward the world, and resulting classification as a Judger or Perceiver, may also be related to treatment strategy selection.

Management of cancer-related pain

Pharmacological management of cancer-related pain - The role of pharmacological treatment methods for cancer-related pain has been well documented and is widely accepted as the foundation for the management of cancer-related pain (Agency for Health Care Policy and Research [AHCPR], 1994; Ashburn & Lipman, 1993; Black, 1979; Kanner, 1993).

Pharmacological treatment of cancer-related pain should be based upon the etiology of the pain, its quality, and its intensity. Specific pharmacological strategies include nonsteroidal anti-inflammatory drugs, opiate analgesics, and adjuvant drugs, such as anticonvulsants, antidepressants, neuroleptics, anxiolytics, and corticosteroids (Paice, 1992).

Despite the acceptance of pharmacological methods for treating cancer-related pain, a survey of cancer patients using pain treatments or medication, found that 13% of the patients reported less than a 30% reduction in pain, 41% reported a 40 to 70% reduction in pain, and only 47% reported a greater than 70% reduction of pain (Daut & Cleeland, 1982). Bonica (1985) suggests that the

12

inadequate knowledge and application of currently available treatment modalities contribute to the high prevalence of inadequately managed pain.

Because of the inadequacy of pain relief provided to cancer patients by pharmacological therapy alone, it is essential that investigators evaluate the use and effectiveness of non-pharmacological pain treatment strategies as well as the variables that may contribute to their effectiveness.

Non-pharmacological pain management strategies - The multidimensional model of cancer-related pain has provided a foundation and impetus for the exploration of non-pharmacological treatment strategies. Non-pharmacological pain treatment strategies consist of non-drug therapies used for the relief of pain. These can be used as the sole form of pain treatment, or as adjuvant therapy with pharmacological techniques.

Non-pharmacological pain treatment strategies have been categorized in several ways. Edgar & Smith-Hanrahan (1992) categorized non-pharmacological pain treatment strategies into peripheral and central techniques. Peripheral techniques utilize skin stimulation and include strategies such as, cryotherapy, heat, massage, acupuncture, and transcutaneous electrical nerve stimulation (TENS). Central techniques alter sensory, evaluative, and affective factors of the pain experience, and include, relaxation, cognitive strategies, imagery, music, distraction, and positive suggestion.

McGuire (1987) categorized non-pharmacological pain treatment strategies based on the component of the multidimensional model of pain that the strategy effects. Physical strategies include surgery and radiotherapy. Cognitive strategies include imagery, stress modulation, and attention diversion. Strategies which alter the sensory component include the psychological interventions. Affective strategies include learning coping strategies, and group

and individual counseling. Behavioral strategies include physical therapy, exercise, and biofeedback.

Non-pharmacological cancer-related pain relief strategies have also been classified into physical and psychological modalities (AHCPR, 1994). Physical modalities include cutaneous stimulation, exercise, immobilization, transcutaneous electrical nerve stimulation (TENS), and acupuncture. Psychological modalities include cognitive and behavioral techniques, such as relaxation, imagery, distraction, hypnosis, and counseling (AHCPR, 1994).

Non-pharmacological pain control strategies for cancer-related pain

Literature regarding the use of non-pharmacological pain control strategies for cancer-related pain is primarily descriptive (Barbour, McGuire & Kirchhoff, 1986; Edgar & Smith-Hanrahan, 1992). A few intervention studies have been conducted and will be reviewed below.

Spiegel & Bloom (1983) studied the effect of group and hypnotic therapy on pain reduction. Fifty-four women with metastatic breast cancer were recruited from a number of oncology practices, and randomly assigned to either a treatment or control group. The treatment group participants were assigned to one of two support groups, each of which met once a week for 90 minutes. One treatment support group included a 10 minute self-hypnosis exercise designed to alter the participants' experience of pain. Eleven women participated in the support group without hypnosis, 19 participated in the support group with hypnosis, and 24 women were in the control group. All groups continued their usual oncological treatments, but the control group received no additional psychological support.

Participants were asked to complete a demographic and psychological questionnaire, a pain rating scale, and the Profile of Mood States (POMS), upon entry to the study. Information was collected at four month intervals for one

year. The pain rating scale consisted of a 0 to 10 rating of the sensation of pain (0 = no pain; 10 = unbearable pain), a 0 to 10 rating of the suffering associated with the pain (0 = no suffering; 10 = unbearable suffering), and the duration and frequency of pain episodes.

Because subject loss was an issue during the study, individual regression analyses were computed on subjects completing at least two test administrations. This technique provided mean slope data which could be subjected to a t-test to determine group differences. Relationships among measures were analyzed using Spearman rank-order correlations.

At baseline, no statistically significant differences were found among the groups in terms of age, education level, time since diagnosis, number of chemotherapy treatments during the study, severity of illness (as measured by death rates among groups), living situation, pain or suffering ratings, or frequency or severity of pain. During the year, the combined treatment groups reported lower pain sensations and less suffering than the control group ($t = 2.5$, $p < 0.02$). There were no statistically significant differences between groups on pain frequency or duration.

An analysis of variance was performed on the slope scores of each of the four measures comparing the control group and the two treatment groups. Pain sensation rating was statistically significantly different among the groups (F $(2,51) = 3.1$; $p < 0.05$). The hypnosis group had the lowest pain sensation rating, while the control group had the highest.

One of the few prospective, randomized intervention studies, the findings of this study suggest that hypnosis and group therapy are effective non-pharmacological treatment strategies for breast cancer patients with pain. The hypnosis instruction provided an additive analgesic effect.

The generalizability of this study is limited by the potential bias that existed when treatment patients were assigned to the support group with and without hypnosis. The process of assignment was not addressed in the published study and selection bias may have occurred. Also, neither the role of the support group facilitators nor the content of the group sessions were described, and may have been inconsistent, thus jeopardizing intervention control. The lack of definition of the terms "pain sensitivity" and "suffering" allows for potential subjectivity, ambiguity, and errors in comparison.

In a study of 58 cancer outpatients, nonanalgesic methods of pain control and their perceived effectiveness were evaluated (Barbour, McGuire, & Kirchhoff, 1986). Patients were recruited from five University or Veterans Administration hospitals. Patients could be diagnosed with any type of cancer, but could not have received radiation or chemotherapy solely for pain relief within two weeks of the study.

An author-developed questionnaire was utilized to elicit factors that made the cancer pain better or worse, methods used to control the pain, and the perceived effectiveness of the methods. An open-ended format for each question was used.

Twenty-three percent of the sample identified change of position as a method to decrease pain, while 12% identified that "no activity" reduced their pain, 9% reported that heat decreased their pain, and 6% identified that physical/emotional activity (exercise, distraction) was used to decrease their pain.

Distraction was used by 13.6% of the group, with 89% of them stating it helped some. Massage was used by 9%; 67% of them found it helped some, and 33% stated it did not help. Exercise was used by 6%; 25% of them found it helpful, while 75% stated it did not help their pain.

The results of this study suggest that non-pharmacological, patient-selected, treatment methods were efficacious for some oncology patients with cancer-related pain. Further information is necessary to evaluate the reasons that the non-pharmacological strategies were not helpful for some participants. Though this study does not overwhelmingly support the effectiveness of nonanalgesic pain treatment strategies, it does support the need to further explore differences in effectiveness among groups.

Few randomized, prospective intervention studies have been conducted that evaluate the effectiveness of specific non-pharmacological pain relief strategies in cancer patients. One such study was conducted using 28 hospitalized oncology patients (Weinrich & Weinrich, 1990). The purpose of the study was to measure the effect of massage on cancer-related pain in a sample of oncology patients. The authors hypothesized that pain intensity and medication use would be reduced in the treatment group.

Participants were randomly selected from a 30 bed inpatient oncology unit. Participants were matched based on analgesic, antiemetic, and tranquilizer medication use prior to study entry. Participant medication use was categorized as follows: use within the last four hours (n = 2), use within the last four to eight hours (n = 0), use 9 hours or more before entry (n = 16), or no medication use (n = 10). Each pair was split, with one member randomly assigned to receive treatment, and the other member assigned to the control group.

A visual analogue scale, with end points of "no pain" and "pain as bad as it could be", was used to measure subjects reported pain intensity at 4 time points: baseline, immediately after the intervention, one hour after the intervention, and two hours after the intervention. The intervention group received a 10 minute Swedish massage, while the control group received a 10

minute visit by the data collector, without any physical contact. Medication use during the study was obtained by chart review.

The treatment and control group each consisted of 14 members. The treatment group had a higher baseline mean score on pain intensity than the control group, 3.1 and 2.2, respectively. The baseline VAS pain intensity scores for the treatment group were as follows: men, M = 4.19; women, M = 1.65; with a standard deviation of 2.6 and 2.7, respectively. In the control group, the baseline VAS scores were 1.93 for the men, and 2.73 for the women.

Using analysis of covariance and repeated measures, group differences in pain rating over time were calculated. A statistically significant decrease in pain rating immediately after the intervention, was found for the men in the treatment group. The mean pain intensity rating for this group was reduced from 4.19 to 2.93 (p = 0.01). There was no statistically significant decrease in the pain rating for men at the one or two hour measurement times, nor for the women at any time. There were no statistically significant differences between pain ratings for men or women in the control group at any time.

An evaluation of the effect of medication on the pain rating scores was computed. Medication taken 1 to 4 hours before the intervention did not show a statistically significant decrease in the pain rating immediately after the intervention, or at 1 hour after the intervention. However, administration of pain medication was associated with a statistically significant decrease in the pain rating measured 2 hours after the intervention (p = 0.006). An analysis of the group by gender revealed that for women, medication given before the intervention was associated with a statistically significant decrease in the pain intensity rating 2 hours after the intervention (p = 0.002). The decrease in pain intensity rating for men at 2 hours after the intervention, was not statistically significant (p = 0.87). There were no statistically significant differences in pain

intensity ratings at any time for men or women who received medication 1 and/or 2 hours after the intervention.

The results of the study suggest that a 10 minute massage intervention could reduce pain intensity for males, immediately after the intervention. There were no statistically significant differences in pain intensity ratings for any group receiving pain medication until 2 hours after the administration of medication. While the length of time necessary for medication to be effective in reducing pain intensity was a relatively long time, massage reduced pain intensity in men immediately after it was administered. This finding suggests a potential benefit of a combination of pharmacological and non-pharmacological pain management techniques.

The study findings also suggest gender differences in the reduction of pain intensity using non-pharmacological techniques. While the study does not provide information on why these differences may have occurred, it is conceivable that personality may play a role in outcome differences.

A few methodological flaws limit the generalizability of the study. The procedure used to match subjects based on recent medication use may have reflected coincidental medication use rather than a consistent pattern of use. A matched pair comparison based on patterns of medication use over several days, may have provided more closely matched pairs, and provided for more reliable conclusions. The authors also incorrectly reported their VAS tool. Although they described in the text of their report, use of a 10 mm VAS to measure pain intensity, they pictorially showed a Likert scale. This reporting error may have simply been an oversight, but it potentially changes the statistical analysis and causes the reader to question the possibility of other reporting errors.

An additional limitation of the study was the discrepancy in baseline VAS scores among males in the control and experimental groups. Matching subjects initially based on VAS self-report of pain may have provided more valid results. Also, the VAS scores in the control group females were perhaps so low that it was impossible to see an intervention effect.

Several studies suggest a role for the use of non-pharmacological treatment strategies for cancer-related pain as an adjuvant therapy in oncology patients (Barbour, McGuire, & Kirchhoff, 1986; Spiegel & Bloom, 1983; Weinrich & Weinrich, 1990). The variability of positive results within and among groups studied, indicate the need for further investigations into individual differences that may effect the success of non-pharmacological treatments. Personality type may play a role in the differential success of non-pharmacological treatments in oncology patients.

Personality type and non-pharmacological pain treatment strategies

No studies were identified that have explored the relationship between personality type and the use of non-pharmacological pain treatment strategies. One study was identified, however, that investigated the relationship between personality traits and pain treatment outcomes in chronic pain.

Guck, Meilman, Skultety, & Poloni (1988) evaluated the effect of personality traits on the long-term treatment outcomes in a sample of 635 chronic pain patients admitted to a multidisciplinary pain treatment center. The purpose of the study was to identify personality subgroups among chronic pain patients, and to evaluate differences in treatment outcome among groups. Subjects were recruited for the study if they: 1) had chronic pain that was not a result of active disease; 2) had no other medical or psychiatric treatments that were more appropriate; 3) had pain for greater than 6 months; 4) agreed to participate in the study; and, 5) agreed to involve family or significant others in

the treatment. The sample was split into two groups, the original group, which consisted of patients who were seen between 1980 and 1985, and the cross-validation group, which consisted of patients who were seen between 1973 and 1979.

Upon inclusion in the study, participants were asked to complete the Minnesota Multiphasic Personality Inventory (MMPI) and an informational questionnaire describing their pain history, medication use, pain-related hospitalizations, and demographic data. All participants took part in a four week inpatient pain program which consisted of medication withdrawal, gradual increase in activity, and treatment for psychological issues related to or caused by the pain situation.

Treatment outcome was evaluated one to five years following treatment, and was assessed using pain intensity and frequency visual analogue scales, number of hospitalizations or surgeries, activity, medication use, Beck Depression Inventory (BDI) scores, and ability to complete activities of daily living.

Based on MMPI results, participants were categorized into corresponding personality groups. Males and females were analyzed separately. The males were classified into 3 subgroups based on MMPI scores, similar to previously reported studies (Armentrout, Moore, Parker, Hewett, & Feltz, 1982; Bradley, Prokop, Margolis, & Gentry, 1978). Group A had elevated scores on the Hypochondriasis scale. Group B had elevated scores on the Depression, Hypochondriasis, and Hysteria scales, with the cross-validation subset scoring slightly higher on all of the scales than the original group. Group C had elevated scores on the Schizophrenia, Hypochondriasis, Psychasthenia, Paranoia, Psychopathic deviate, and Mania scales, with the original sample in addition, scoring higher on the Depression and Hysteria scales. An analysis of the

21

differences among groups regarding pre-treatment variables revealed that Group C, for the males, had more pain-related hospitalizations than either Group A or B (F (2,135) = 4.88, p < 0.01), and more pain-related surgeries than Group B (F (2,135) = 3.01, p < 0.05).

The females were classified into four sub-groups, based on MMPI scores. Group A had elevations on the Hypochondriasis, Depression, and Hysteria scales. Group B had no elevations on any scale, and the original subset of Group C had elevations on the Depression, Schizophrenia, Psychasthenia, Social Introversion, and Hypochondriasis scales, while the cross-validation subset of Group C also had elevations on the Psychopathic deviate, Hypochondriasis, and Paranoia scales. The female sub-groups had no differences between groups regarding any of the pretreatment variables.

Utilizing ANOVA, male sub-groups and female sub-groups were compared regarding treatment outcome. Statistically significant differences among the male groups were identified for only two variables; 1) VAS pain rating on a good day (F = 3.23, df = 2,57, p < .05), and 2) number of hospitalizations since treatment (F = 3.20, df = 2,57, p < .05). Male patients in Group C rated their pain as more intense than did Group B. The differences between the groups regarding the number of pain-related hospitalizations was not reported. No statistically significant differences were detected for women on any of the variables.

Few differences in long term chronic pain treatment outcome were found among male MMPI subgroups and no differences were found among female MMPI subgroups, in this study. There may be several reasons why this occurred. The multidisciplinary nature of the treatment program may have accounted for insubstantial differences in outcome. It may be that different participants received benefit from various components of the program, which

eliminated differential effects. Also, subjects may have received benefit from the same component of the multidisciplinary program which again, was undetectable. In addition, the differences among the pre-treatment variables support the post-treatment differences.

The study assessed treatment outcomes according to personality traits. The MMPI evaluates deviant, or pathological, personality traits. Perhaps, evaluating participants using a tool that measures normal personality traits, may have been more effective. Further research is necessary before these results can be generalized.

The role of personality type in the utilization and success of non-pharmacological treatment strategies for cancer-related pain has yet to be evaluated. Given the inadequacy of pharmacological pain treatment strategies alone, the variable success rates using non-pharmacological treatment strategies, and the role of personality in the multiple dimensions of cancer-related pain, further investigation of the utilization of non-pharmacological pain treatment strategies for cancer-related pain, and the success of those treatments, in relationship to personality type, is warranted.

Chapter III

Methodology

Study Design

Using a cross-sectional survey design, this study assessed the use and effectiveness of non-pharmacological cancer-related pain treatment strategies. The present study is part of a larger study of pain in ambulatory oncology patients.

Setting

Patients were recruited from 16 of the 35 sites that are part of the Oncology Nursing Research Network. This network was established in 1988 and is composed of over 150 oncology nurses. Nurses from each of the sites agreed to facilitate the study at their sites. Human subjects approval was obtained from the University of California and from each institution.

Sample

Participants were recruited to participate in this study who met the following criteria: 1) age greater than or equal to 18 years; 2) able to read and write English; 3) able to give informed consent, and 4) were receiving active treatment for their disease (not AIDS-related) with either chemotherapy, radiation therapy, hormonal therapy, and/or biotherapy.

Instruments

1. Patient Information Questionnaire (Appendix A)

   a) Description: Patients were asked to complete a Patient Information Questionnaire (PIQ), which contains a demographic section, the Myers-Briggs Type Indicator, and other data not related to this study. The final questions on the PIQ ask the patient to report whether they have experienced cancer or non cancer-related pain in the past month. Patients that reported experiencing

cancer-related pain were given an additional questionnaire, the Cancer-Related Pain Questionnaire (CRPQ), to complete.

b) Scoring: Data were coded and descriptive statistics were generated.

c) Validity and reliability: Content validity of the questionnaire was established by a panel of experts. This instrument was used in previous studies and is being used in ongoing studies by these investigators.

2. The Myers-Briggs Type Indicator (Appendix B)

a) Description: The self scorable Form G of the Myers Briggs Type Indicator (MBTI) was utilized (Myers & Briggs, 1987). The MBTI is based on Jungian typology and was designed to measure personality type, rather than personality traits. According to Myers-Briggs, a "type" is a particular combination of four scales. Bipolar scales are used to determine preferential ways of being. The preference for each scale is combined into one of 16 possible scale combinations which determines the personality type. In the present study, two preference scales were analyzed, namely the Introversion-Extroversion and the Judgment-Perception scales. The MBTI Form G consists of 94 forced choice, self-report questions.

b) Scoring: Scoring was computed based on the coding form supplied from Consulting Psychologists Press, Inc. Dichotomous scores were used to obtain the personality type of each patient.

c) Validity and Reliability: Content validity of the MBTI has been established using a variety of assessment forms. Face validity has been supported by a study of 28 Jungian analysts who were asked to classify themselves according to the four MBTI factors (Bradway, 1964). The self-classification was then compared the MBTI test results. On the EI scale, 100% agreement between the self-classification and the MBTI results was achieved, 68% agreement resulted on the SN scale, 61% agreement resulted on the TF

scale, and 43% had agreement on all three scales. The JP scale was not evaluated in the study.

The predictive validity of the MBTI has been suggested primarily in the areas of career choice and school success (Conary, 1966; Miller, 1988). The predictive validity of the MBTI in people with chronic illness, chronic pain, or cancer-related syndromes, has not been established.

Construct validity of the MBTI has been supported through several studies. Thompson & Borrello (1986) investigated the construct validity of the MBTI using test results from 359 college students. Factor analysis was applied to the scored items, and four clusters of items were detected. Each of the test items designed to relate to one of the four MBTI scales, clustered together with coefficients greater than 0.40.

Convergent and divergent validity was suggested by a study of 185 psychology students (Sipps & DiCaudo, 1988). Participants were administered the MBTI, the Barratt Impulsiveness Scale (BIS), and a temperaments scale which measured emotionality, activity, sociability, and impulsiveness (EASI-III). The BIS consists of 26 items designed to measure speed of cognitive response, impulsiveness, adventure seeking, and risk taking. Principal components factor analysis with orthogonal rotation was conducted and six salient factors emerged. As expected, the MBTI-JP scale corresponded to impulsivity scores, while the MBTI-EI scale corresponded to sociability and extroversion on the EASI-III and BIS, respectively.

Reliability for the MBTI has been established via split-half assessment of internal consistency, and test-retest assessment of the tool's stability. Split-half reliability coefficients for the four MBTI scales range from 0.66 to 0.92 (Carlyn, 1977). In a sample of 41 college students, Stricker & Ross (1964) found test-retest scores to range from 0.69 to 0.73, with the exception of the TF scale,

which achieved a stability score of 0.48. Levy, Murphy & Carlson (1972) reported test-retest reliability coefficients of 0.69 to 0.83 in a sample of 433 black college students, with an 8 week test interval. Carskadon (1977) reported a test-retest coefficient range from 0.56 to 0.87 with a 7 week test interval. These evaluations were performed using continuous type data.

Stability of the MBTI was also reported using dichotomous data. In a study of 433 college students, 53% of the sample had no change in any of the four MBTI areas after a 2 month retest. In addition, 35% had a category change in only one area (Levy, Murphy & Carlson, 1972). Another study of college students revealed that 68% of the sample of 41 students had no EI type change during a retest 14 months after the original assessment, 85% had no SN type change, 73% had no change in the TF type, and 63% had no change in JP type (Stricker & Ross, 1964). In an evaluation of elementary school teachers, with a 6 year test interval, 83% of the sample of 94 had no change in EI type, 89% had no change in SN type, 90% had no change in TF type, and 90% had no change in JP type.

While these data seem to support the reliability and stability of the MBTI over time, further studies are necessary to confirm these results. Although instrument reliability and stability testing is also needed in more diverse populations, including individuals with chronic illness and pain, this study will not determine this.

3. The Cancer-Related Pain Questionnaire (CRPQ; Appendix C)

a) Description: The CRPQ is designed to obtain detailed information on cancer-related pain. The CRPQ is adapted, with permission, from the University of California, San Francisco (UCSF) Pain Service Patient Questionnaire developed by Fields (1987). This comprehensive pain assessment instrument is currently being used at the Pain Center at UCSF. This questionnaire provides a

systematic approach to obtain essential information about the characteristics and morbidity parameters associated with a patient's pain complaint. The UCSF questionnaire has been adapted, for the purposes of this study, to include specific questions on cancer-related pain.

The questionnaire includes a section on non-pharmacological pain treatment strategies. A list of 15 non-pharmacological strategies is provided, which includes: 1) surgery, 2) traction, 3) braces or casts, 4) chiropractic, 5) physical therapy, 6) relaxation training, 7) exercise program, 8) transcutaneous electrical nerve stimulation (TENS), 9) homeopathy, 10) acupuncture, 11) massage, 12) psychotherapy, 13) other counseling, 14) biofeedback, and 15) hypnosis. Patients were asked to indicate which of the treatments they had tried for their cancer-related pain. Patients were also given space to indicate any additional non-pharmacological pain treatment strategies not included in the provided list.

b) Scoring: Data were coded and descriptive statistics and frequency distributions were generated.

c) Validity and reliability: Content validity was established by a panel of experts. This instrument was used in previous studies and is being used in ongoing studies by these investigators.

Data Collection Procedures

Nurses at the 16 sites were trained in the data collection procedures by the Project Coordinator. After providing consent, patients were asked to complete the PIQ and return it to the nurse for review. The nurse reviewed the PIQ for completeness. If the patient responded that they had experienced cancer-related pain in the past month, they were given the CRPQ. The patients were instructed to complete the questionnaire(s) in the practice setting or to take them home and bring them back at their next scheduled appointment.

The Project Coordinator traveled to each of the sites to conduct a medical record review of the patients recruited into the study. This review provided detailed information on: type of cancer, site of primary disease, site(s) and extent of metastases, intent of therapy, present and previous cancer treatment, and evidence of a pain problem.

Statistical/Data Analysis Plan

Data were analyzed using an IBM PC and the CRUNCH Statistical Software Package. Descriptive statistics and frequency distributions were generated to describe each subgroup of personality type according to age, gender, years of education, ethnicity, Karnofsky Performance Status, marital status, living arrangements, employment status, type of cancer, metastatic site(s), purpose of their cancer treatment, prior surgery, etiology and type of their cancer-related pain, pain intensity rating at the time of the questionnaire, average daily pain intensity rating, worst pain intensity rating, least pain intensity rating, average number of days per week they experienced a significant amount of pain, and average number of hours per day their pain lasted. Differences between groups were determined using independent Student's t-tests or Chi Square analyses.

Frequency distributions were generated to describe the use of non-pharmacological pain relief strategies by personality type. Due to the lack of mutual exclusivity, a statistical analysis of the differences in use of non-pharmacological pain relief strategies between different personality types was not performed.

Chapter IV

Results

Sample Demographics - Introverts and Extroverts

The sample consisted of 200 ambulatory oncology patients with cancer-related pain (CRP). Forty-three percent of the sample were identified as Introverts, while 57% were Extroverts. Judgers constituted 63% of the sample, and Perceivers were the remaining 37%. Demographic characteristics of each personality type are described below.

Introverts - The sample consisted of 87 Introverts. The mean age of the Introvert group was 53 years (SD = 14.5) with minimum and maximum ages reported of 19 and 80, respectively. The mean number of years of education achieved by the Introverts was 14 years (SD = 3.2) with a range of 7 to 23. The average Karnofsky Performance Status score was 77 (SD = 14.3) and scores ranged from 30 to 100. Fifty-three percent of the Introverts were female, 13% lived alone, 25% reported being single, and 90% identified themselves as Caucasian. Thirty-four percent of the Introverts were employed, 25% were retired, and 28% were disabled. Demographic characteristics of the Introverts are summarized in Tables 1 and 2.

The most common cancer diagnoses for the Introverts were breast (23%), colon/rectal (13%), lung (8%), and multiple myeloma (8%). Seventy percent of the group had metastatic disease and 29% of the Introverts reported that they were being treated to cure their disease.

Data on mean pain intensity scores and duration measures of pain were determined. The mean pain intensity score at the time of the questionnaire was 2.4 (SD =2.2), with a range from 0 to 9, on an eleven point scale. The average daily pain intensity rating for the Introverts was 3.7 (SD = 2.2), with a range of 0 to 8. The worst pain intensity rating averaged 6.7 (SD = 2.3), with a range of 1

to 10. The least pain intensity rating averaged 1.6 (SD = 1.8), with a range of 0 to 7. The mean number of days Introverts experienced a significant amount of pain was 4.6 days (SD = 2.7), with a range of 0 to 7 days. The mean number of hours per day the pain lasted was 10 hours (SD = 8.9), with a range from 0 to 24 hours. The pain characteristics of the Introvert group are summarized in Table 1.

Extroverts - The sample consisted of 113 Extroverts. The mean age of the Extrovert group was 54 years (SD = 13.7) with minimum and maximum ages reported of 21 and 79, respectively. The mean number of years of education for the Extroverts was 14 years (SD = 2.7) with a range of 8 to 22. The average Karnofsky Performance Status score was 79 (SD = 13.4) and scores ranged from 40 to 100. Sixty-two percent of the Extroverts were female, 21% lived alone, 37% reported being single, and 87% identified themselves as Caucasian. Thirty-eight percent of the Extroverts were employed, 24% were retired, and 27% were disabled. Demographic characteristics of the Extroverts are summarized in Tables 1 and 2.

The most common cancer diagnoses for the Extroverts were breast (23%), lung (16%), colon/rectal (12%), ovarian (7%), and non-Hodgkin's lymphoma (7%). Seventy-one percent of the group had metastatic disease and 29% of the Extroverts reported that they were being treated to cure their disease.

Data on mean pain intensity scores and duration measures of pain were determined. The mean pain intensity score at the time of the questionnaire was 2.0 (SD =2.2), with a range from 0 to 9, on an eleven point scale. The average daily pain intensity rating for the Extroverts was 3.6 (SD = 2.2), with a range of 0 to 8. The worst pain intensity rating averaged 6.2 (SD = 2.8), with a range of 0 to 10. The least pain intensity rating averaged 1.6 (SD = 1.9), with a range of 0

to 8. The mean number of days the Extroverts experienced a significant amount of pain was 3.9 days (SD = 2.9), with a range of 0 to 7 days. The mean number of hours per day the pain lasted was 8.6 hours (SD = 9.3), with a range from 0 to 24 hours. The pain characteristics of the Extrovert group are summarized in Table 1.

Findings - Introverts and Extroverts

Differences in Demographic and Pain Characteristics Between Introverts and Extroverts - As summarized in Table 1, there were no statistically significant differences between the Introverts and Extroverts regarding age, years of education, Karnofsky Performance Status score, pain intensity rating at the time of the questionnaire, average daily pain intensity rating, worst pain intensity, least pain intensity, average number of days per week in pain, or average number of hours per day the pain lasted, as measured by independent Student's t-tests.

As summarized in Table 2, Chi Square analyses revealed no statistically significant differences between the Introverts and Extroverts regarding gender, living arrangements, marital status, ethnicity, employment status, type of cancer, purpose of cancer treatment, presence of metastatic disease, or previous surgery.

Comparison of the Use of Non-Pharmacological Strategies by Introverts and Extroverts - A total of 53 non-pharmacological interventions were reported being used by the Introverts. Each non-pharmacological intervention was evaluated independently because categories were not mutually exclusive (i.e., patients could indicate the use of more than one non-pharmacological intervention). The number of times each non-pharmacological intervention was reported was divided by the sample size of the Introverts (N = 87) to determine the percentage of the Introvert sample that reported using a particular non-

pharmacological intervention. The results are listed in Table 3 and displayed graphically in Figure 1.

The non-pharmacological interventions reported being used by the largest percentage of Introverts were: massage (10.3%), exercise (9.2%), and surgery (9.2%). The non-pharmacological interventions reported being used by the smallest percentage of Introverts were: psychotherapy (1.2%), biofeedback (1.2%), hypnosis (1.2%), brace/cast (1.2%), and homeopathy (1.2%).

A total of 92 non-pharmacological interventions were reported being used by the Extroverts. Each non-pharmacological intervention was evaluated independently because categories were not mutually exclusive (i.e., patients could choose more than one non-pharmacological intervention). The number of times each non-pharmacological intervention was reported was divided by the sample size of the Extroverts (N = 113) to determine the percentage of the Extrovert sample that reported using a particular non-pharmacological intervention. The results are listed in Table 3 and displayed graphically in Figure 1.

The non-pharmacological interventions reported being used by the largest percentage of Extroverts were: surgery (15.9%), massage (12.4%), relaxation (12.4%), and exercise (10.6%). The non-pharmacological interventions reported being used by the smallest percentage of Extroverts were: homeopathy (<1.0%), TENS (<1.0%), brace/cast (1.8%), and hypnosis (1.8%).

A comparison of the percentage of Introverts to the percentage of Extroverts who reported using each of the non-pharmacological interventions is illustrated in Figure 1. With each non-pharmacological intervention, a larger percentage of Extroverts reported using the intervention compared to the Introverts.

Sample Demographics - Judgers and Perceivers

Judgers - The sample consisted of 125 Judgers. The mean age of the Judger group was 55 years (SD = 13.6) with minimum and maximum ages reported of 23 and 80, respectively. The mean number of years of education achieved by the Judgers was 14 years (SD = 3.0) with a range of 7 to 23. The average Karnofsky Performance Status score was 77 (SD = 14.2) and scores ranged from 30 to 100. Fifty-six percent of the Judgers were female, 21% lived alone, 32% reported being single, and 89% identified themselves as Caucasian. Thirty-three percent of the Judgers were employed, 30% were retired, and 28% were disabled. Demographic characteristics of the Judgers are summarized in Tables 4 and 5.

The most common cancer diagnoses for the Judgers were breast (21%), lung (15%), colon/rectal (12%), ovarian (8%), and non-Hodgkin's lymphoma (6%). Seventy-one percent of the group had metastatic disease and 33% of the Judgers reported that they were being treated to cure their disease.

Data on mean pain intensity scores and duration measures of pain were determined. The mean pain intensity score at the time of the questionnaire was 2.1 (SD =2.2), with a range from 0 to 8, on an eleven point scale. The average daily pain intensity rating for the Judgers was 3.6 (SD = 2.2), with a range of 0 to 8. The worst pain intensity rating averaged 6.4 (SD = 2.6), with a range of 0 to 10. The least pain intensity rating averaged 1.6 (SD = 2.0), with a range of 0 to 8. The mean number of days per week the Judgers experienced a significant amount of pain was 4.5 days (SD = 2.8), with a range of 0 to 7 days. The mean number of hours per day the pain lasted was reported as 9.1 hours (SD = 9.0), with a range from 0 to 24 hours. The pain characteristics of the Judger group are summarized in Table 4.

Perceivers - The sample consisted of 75 Perceivers. The mean age of the Perceiver group was 52 years (SD = 14.7) with minimum and maximum ages reported of 19 and 79, respectively. The mean number of years of education achieved by the Perceivers was 14 years (SD = 2.9) with a range of 8 to 22. The average Karnofsky Performance Status score was 81 (SD = 12.9) and scores ranged from 50 to 100. Sixty-one percent of the Perceivers were female, 11% lived alone, 31% reported being single, and 87% identified themselves as Caucasian. Forty-three percent of the Perceivers were employed, 15% were retired, and 25% were disabled. Demographic characteristics of the Perceivers are summarized in Tables 4 and 5.

The most common cancer diagnoses for the Perceivers were breast (27%), colon/rectal (13%), prostate (9%), lung (8%), Hodgkin's (8%), and non-Hodgkin's lymphoma (8%). Sixty-nine percent of the group had metastatic disease and 36% of the Perceivers reported that they were being treated to cure their disease.

Data on mean pain intensity scores and duration measures of pain were determined. The mean pain intensity score at the time of the questionnaire was 2.3 (SD = 2.3), with a range from 0 to 9, on an eleven point scale. The average daily pain intensity rating for the Perceivers was 3.7 (SD = 2.3), with a range of 0 to 8. The worst pain intensity rating averaged 6.4 (SD = 2.6), with a range of 1 to 10. The least pain intensity rating averaged 1.6 (SD = 1.6), with a range of 0 to 6. The mean number of days per week the Perceivers experienced a significant amount of pain was 3.6 days (SD = 2.9), with a range of 0 to 7 days. The mean number of hours per day the pain lasted was reported as 9.3 hours (SD = 9.4), with a range from 0 to 24 hours. The pain characteristics of the Perceiver group are summarized in Table 4.

Findings - Judgers and Perceivers

Differences in Demographic and Pain Characteristics Between Judgers and Perceivers - As summarized in Table 4, there were no statistically significant differences between the Judgers and Perceivers regarding age, years of education, Karnofsky Performance Status score, pain intensity rating at the time of the questionnaire, average daily pain intensity rating, worst pain intensity rating, least pain intensity rating, average number of days per week in pain, or average number of hours per day the pain lasted, as measured by independent Student's t-tests.

As summarized in Table 5, Chi Square analyses revealed no statistically significant differences between the Judgers and Perceivers regarding gender, living arrangements, marital status, ethnicity, employment status, type of cancer, purpose of cancer treatment, presence of metastatic disease, or previous surgery.

Comparison of the Use of Non-Pharmacological Strategies by Judgers and Perceivers - A total of 80 non-pharmacological interventions were reported being used by the Judgers. Each non-pharmacological intervention was evaluated independently because categories were not mutually exclusive (i.e., patients could choose more than one non-pharmacological intervention). The number of times each non-pharmacological intervention was reported was divided by the sample size of the Judgers (N = 125) to determine the percentage of the Judger sample that reported using a particular non-pharmacological intervention. The results are listed in Table 6 and displayed graphically in Figure 2.

The non-pharmacological interventions reported being used by the largest percentage of Judgers were: surgery (12.8%), relaxation (10.4%), exercise (8.8%), and massage (8.0%). The non-pharmacological interventions reported

36

being used by the smallest percentage of Judgers were: hypnosis (<1.0%), homeopathy (1.6%), brace/cast (1.6%), biofeedback (1.6%), acupuncture (1.6%), chiropractic (1.6%), and psychotherapy (1.6%).

A total of 65 non-pharmacological interventions were reported being used by the Perceivers. Each non-pharmacological intervention was evaluated independently because categories were not mutually exclusive (i.e. patients could choose more than one non-pharmacological intervention). The number of times each non-pharmacological intervention was reported was divided by the sample size of the Perceivers (N = 75) to determine the percentage of the Perceiver sample that reported using a particular non-pharmacological intervention. The results are listed in Table 6 and displayed graphically in Figure 2.

The non-pharmacological interventions reported being used by the largest percentage of Perceivers were: massage (17.3%), surgery (13.3%), and exercise (12.0%). The non-pharmacological interventions reported being used by the smallest percentage of Perceivers were: homeopathy (0.0%), brace/cast (1.3%), and TENS (1.3%).

A comparison of the percentage of Judgers to the percentage of Perceivers who reported using each of the non-pharmacological interventions is illustrated in Figure 2. With the exception of three interventions (brace/cast, relaxation, and TENS), a larger percentage of the Perceivers reported using each of the non-pharmacological interventions, than the Judgers.

Chapter V

Discussion

The purpose of this study was to describe the use of non-pharmacological pain relief strategies by different personality types of ambulatory oncology patients with cancer-related pain. The relationship of these study findings to current knowledge, the limitations of the study, implications for nursing, and suggestions for future research, will be discussed.

The distribution of Introverts and Extroverts, and Judgers and Perceivers, in this study can be compared to findings in previous research. Myers (1962) estimated type distributions in the general population to be approximately 75% Extrovert and 55-60% Judger. The Center for Applications of Psychological Type (CAPT) data base, which contains data from almost 33,000 subjects, reported single letter type distributions for males and females. For males, 51% of the sample were Extroverts, and 60% were Judgers. For females, 56% of the sample were Extroverts, and 60% were Judgers (McCaulley, Macdaid, & Kainz, 1985). One explanation for the slightly lower percentage of Extroverts in the current study (57%) as compared with the general population estimates, may be the relatively high education level of the current sample. Higher educational level has been correlated with a greater percentage of Introverts and Judgers (McCaulley, Macdaid, & Kainz, 1985). However, the current study does support previous type distribution research that has reported a greater percentage of Extroverts among females as compared with males, and the predominance of the Judger preference (McCaulley, Macdaid, & Kainz, 1985).

The results of this study reveal no significant differences in demographic characteristics or pain intensity and duration measures between dimensions of personality type. Although a complete evaluation and categorization of personality type using the 16 various dimensions, may reveal type distribution

differences which this study is unable to determine, it seems that a dominant Introvert/Extrovert, or Judger/Perceiver personality, does not exist among cancer patients with pain. It seems that the idea of a cancer personality, or pain personality, is not supported by these results.

This study corroborates the model of multidimensionality of cancer-related pain. Participants were able to describe their pain based on several dimensions of the model. Data was generated that identified the sensory components of cancer-related pain, such as intensity and duration. Physiologic aspects to their cancer-related pain were identified through a self report, as well as through a chart review. The behavioral dimensions of their cancer-related pain were identified by the activity level of the participant, and the activities they pursued to relieve their pain.

Although the number of participants using each non-pharmacological strategy was too small to draw definitive conclusions, a few observations regarding the use of non-pharmacological pain relief strategies are possible. With each non-pharmacological intervention, a larger percentage of Extroverts reported using each intervention compared to the Introverts. With the exception of three interventions (brace/cast, relaxation, and TENS), a larger percentage of Perceivers reported using each intervention compared to the Judgers.

An underlying theory related to this study was that certain personality types may prefer physical versus psychosocial pain relief strategies. No trends were observed among Introverts and Extroverts, and Judgers and Perceivers regarding the use of physical versus psychosocial techniques. These findings may suggest that there is no preferential inclination for physical versus psychosocial interventions among different personality types. However, further research in this area is warranted.

Limitations

The extent of the analysis and the ability to generalize the findings of this study were limited by the small number of participants reporting the use of non-pharmacological pain relief strategies. The study findings require further support with a larger number of participants using non-pharmacological interventions.

A few adjustments in the questionnaire format would have allowed a more extensive compilation of data. Greater specificity regarding the number of times each strategy was used, would have provided more information on which to base the analysis and subsequent recommendations. This study did not address the impetus behind selection of non-pharmacological strategies which also would have provided a more complete understanding of strategy choice.

An additional limitation of this study was the inability to evaluate the statistical significance of the differences in use of non-pharmacological strategies between dimensions of personality type. For instance, it was impossible to determine the statistical significance of the differences between Introverts and Extroverts, or Judgers and Perceivers, in the use of each non-pharmacological strategy. Alternate reporting methods may facilitate a more detailed comparison.

Implications for Nursing

Despite the stated limitations, the study findings suggest some implications for the nursing profession. The study demonstrated that ambulatory oncology patients use a wide variety of non-pharmacological pain relief strategies to manage their cancer-related pain. Thirteen different non-pharmacological strategies were employed by each of the personality types, and 14 different strategies were used by two or more of the personality types. This high utilization suggests that having a repertoire of non-pharmacological

40

strategies may be beneficial to patients. The ability to offer several different non-pharmacological pain relief strategies may increase the likelihood of relieving cancer-related pain. It is important that nurses be educated regarding the use of different non-pharmacological pain relief strategies, and become proficient in the use of a repertoire of strategies.

This study also suggests that there are no statistically significant differences among the dimensions of personality type in their experience of cancer-related pain. Variables such as pain frequency, intensity, and sensation did not vary significantly between the dimensions of personality type measured in this study. These findings are contrary to the notion of a particular cancer-related pain personality. Nursing must recognize and support the differences among patients in pain sensation, behavior, and expression.

In addition, the study findings suggest that personality type may indeed be a factor in the choice of a non-pharmacological pain relief strategy. It may be important, therefore, for nurses to assess the personality type of each patient and recommend specific strategies effective for different personalities. Additional research is necessary to determine specific recommendations.

Future Research

This study suggests several areas for future research. This study did not evaluate the effectiveness of non-pharmacological pain relief strategies according to personality type. It is yet unclear whether certain non-pharmacological strategies are more effective for certain personality types, and further research is warranted.

The study findings suggest that ambulatory oncology patients use few non-pharmacological interventions to relieve their cancer-related pain. The rationale underlying the uncommon use of non-pharmacological pain relief strategies requires further research. A study of the personality characteristics of

41

individual's that use multiple strategies may provide additional information regarding the use of non-pharmacological strategies.

The exploration of differences between personality types and use of general categories of non-pharmacological pain relief techniques may provide important information. Certain personality types may be more inclined to use physical versus psychological strategies. This knowledge would provide clinicians with additional information on which to base pain treatment recommendations.

Future research may reveal significant information regarding the components of personality types that predispose individual's to use certain non-pharmacological strategies. What about an individual's personality type results in the use of particular strategies. This information may allow clinicians to more specifically target pain relief strategies to individuals with cancer-related pain.

This study did not investigate the influence of demographic characteristics in the choice of non-pharmacological pain treatment strategies. Further research regarding the role of gender, age, ethnicity, and other personal characteristics may provide useful information.

Conclusion

This study provides preliminary exploration into the role of personality type and the use of a non-pharmacological pain treatment strategy. The importance of studying the use and effectiveness of these strategies for cancer-related pain can not be over emphasized. The high incidence of unrelieved cancer-related pain necessitates further study into non-pharmacological treatment techniques and factors that may increase the efficacy of these techniques. Further research in this area is very important.

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44

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Table 1
Demographic Data and Pain Characteristics by Personality Type
(N=200)

Variable	Introvert (N = 87)	Extrovert (N = 113)	Statistic (t)	Significance (p)
	Mean (SD)	Mean (SD)		
Age (Years)	53 (14.5)	54 (13.7)	0.41	0.68
Education (Years)	14 (3.2)	14 (2.7)	-0.94	0.35
Karnofsky Performance Score	77 (14.3)	79 (13.4)	0.98	0.33
Pain Now	2.4 (2.2)	2.0 (2.2)	-0.94	0.35
Average Daily Pain	3.7 (2.2)	3.6 (2.2)	-0.22	0.83
Current Worst Pain	6.7 (2.3)	6.2 (2.8)	-1.10	0.27
Current Least Pain	1.6 (1.8)	1.6 (1.9)	-0.19	0.85
Days/Week in Pain	4.6 (2.7)	3.9 (2.9)	-1.48	0.14
Hours/Day Pain Lasts	10.0 (8.9)	8.6 (9.3)	-0.90	0.37

Table 2
Demographic Data by Personality Type
(N=200)

Variable	Introvert (N = 87)	Extrovert (N = 113)	Statistic	Significance
	n (%)	n (%)	(x^2)	(p)
Gender				
Male	41 (47)	43 (38)		
Female	46 (53)	70 (62)	1.66	0.20
Lives Alone	11 (13)	23 (21)		
Lives with someone	75 (87)	88 (79)	2.13	0.14
Married	65 (75)	71 (63)		
Single	22 (25)	41 (37)	2.90	0.09
Metastases	60 (70)	78 (71)		
No metastases	26 (30)	32 (29)	0.03	0.86
Surgery	53 (68)	68 (69)		
No surgery	25 (32)	31 (31)	0.01	0.92
Reason for Therapy				
Cure	25 (29)	43 (38)		
Not for Cure	61 (71)	70 (62)	1.75	0.19
Ethnicity				
Caucasian	78 (90)	98 (87)		
Other	9 (10)	15 (13)	0.40	0.53
Employment Status				
Employed	30 (34)	43 (38)		
Retired	22 (25)	27 (24)		
Disabled	24 (28)	30 (27)	0.22	0.89
Diagnosis				
Breast	20 (23)	26 (23)		
Lung	7 (8)	18 (16)		
Colon/Rectal	11 (13)	14 (12)	2.09	0.72
Ovarian	4 (5)	8 (7)		
NHL	5 (6)	8 (7)		
Other	40 (45)	39 (35)		

Table 3
Frequency Distribution of the Non-Pharmacological Strategies Used
by Introverts and Extroverts
(N=200)

Strategy	Introvert (N = 87)	Extrovert (N = 113)
	n (%)	n (%)
Massage	9 (10.3)	14 (12.4)
Relaxation	5 (5.6)	14 (12.4)
Exercise	8 (9.2)	12 (10.6)
Surgery	8 (9.2)	18 (15.9)
TENS	6 (7.0)	1 (<1.0)
Physical Ther.	5 (5.8)	8 (7.1)
Psychotherapy	1 (1.2)	3 (2.7)
Other counseling	3 (3.5)	5 (4.4)
Chiropractic	2 (2.3)	5 (4.4)
Acupuncture	2 (2.3)	3 (2.7)
Biofeedback	1 (1.2)	4 (3.5)
Hypnosis	1 (1.2)	2 (1.8)
Brace/Cast	1 (1.2)	2 (1.8)
Homeopathy	1 (1.2)	1 (<1.0)

*Total number of non-pharmacological interventions reported by personality type.
Categories are not mutually exclusive.

Table 4
Demographic Data and Pain Characteristics by Personality Type
(N=200)

Variable	Judger (N = 125)	Perceiver (N = 75)	Statistic (t)	Significance (p)
	Mean (SD)	Mean (SD)		
Age (Years)	55 (13.6)	52 (14.7)	1.40	0.16
Education (Years)	14 (3.0)	14 (2.9)	0.66	0.51
Karnofsky Performance Status	77 (14.2)	81 (12.9)	-1.93	0.06
Pain Now	2.1 (2.2)	2.3 (2.3)	-0.58	0.57
Average Daily Pain	3.6 (2.2)	3.7 (2.3)	-0.32	0.75
Worst Pain Intensity	6.4 (2.6)	6.4 (2.6)	0.10	0.92
Least Pain Intensity	1.6 (2.0)	1.6 (1.6)	0.16	0.88
Days/Week in Pain	4.5 (2.8)	3.6 (2.9)	1.92	0.06
Hours/Day Pain Lasts	9.1 (9.0)	9.3 (9.4)	-0.15	0.88

Table 5
Demographic Data by Personality Type
(N=200)

Variable	Judger (N = 125)	Perceiver (N = 75)	Statistic	Significance
	n (%)	n (%)	(x^2)	(p)
Gender				
Male	55 (44)	29 (39)		
Female	70 (56)	46 (61)	0.55	0.46
Lives Alone	26 (21)	8 (11)		
Lives with Someone	96 (79)	67 (89)	3.69	0.06
Married	84 (68)	52 (69)		
Single	40 (32)	23 (31)	0.06	0.82
Metastases	86 (71)	52 (69)		
No metastases	35 (29)	23 (31)	0.07	0.80
Surgery	73 (68)	48 (69)		
No surgery	34 (32)	22 (31)	0.002	0.96
Reason for Therapy				
Cure	41 (33)	27 (36)		
Not for cure	83 (67)	48 (64)	0.18	0.67
Ethnicity				
Caucasian	111 (89)	65 (87)		
Other	14 (11)	10 (13)	0.20	0.65
Employment Status				
Employed	41 (33)	32 (43)		
Retired	38 (30)	11 (15)		
Disabled	35 (28)	19 (25)	5.88	0.053
Diagnosis				
Breast	26 (21)	20 (27)		
Lung	19 (15)	6 (8)		
Colon/Rectal	15 (12)	10 (13)	5.35	0.25
Ovarian	10 (8)	2 (3)		
NHL	7 (6)	6 (8)		
Other	48 (38)	31 (41)		

53

Table 6
Frequency Distribution of the Non-Pharmacological Strategies Used by Judgers and Perceivers (N=200)

Strategy	Judger (N = 125)	Perceiver (N = 75)
	n (%)	n (%)
Massage	10 (8.0)	13 (17.3)
Relaxation	13 (10.4)	6 (8.0)
Exercise	11 (8.8)	9 (12.0)
Surgery	16 (12.8)	10 (13.3)
TENS	6 (4.8)	1 (1.3)
Physical Ther.	7 (5.6)	6 (8.0)
Psychotherapy	2 (1.6)	2 (2.7)
Other counseling	4 (3.2)	4 (5.3)
Chiropractic	2 (1.6)	5 (6.7)
Acupuncture	2 (1.6)	3 (4.0)
Biofeedback	2 (1.6)	3 (4.0)
Hypnosis	1 (<1)	2 (2.7)
Brace/Cast	2 (1.6)	1 (1.3)
Homeopathy	2 (1.6)	0 (0)

* Total number of non-pharmacological interventions reported by personality type.
Categories are not mutually exclusive.

Figure Caption

Figure 1. A comparison of the percentage of Introverts and Extroverts that used each non-pharmacological strategy. Strategy categories are not mutually exclusive.

Comparison of Non-Pharmacological Strategies* Used by Introverts and Extroverts

Legend: □ Extrovert ▤ Introvert

X-axis (Strategy): Hypnosis, Biofeedback, Psychotherapy, Brace/Cast, Acupuncture, Chiropractic, Other Counselling, Relaxation, Physical Therapy, TENS, Exercise, Surgery, Massage

Y-axis (Percentage of Personality Type Using a Strategy): 0, 2, 4, 6, 8, 10, 12, 14, 16

*Categories are not mutually exclusive

56
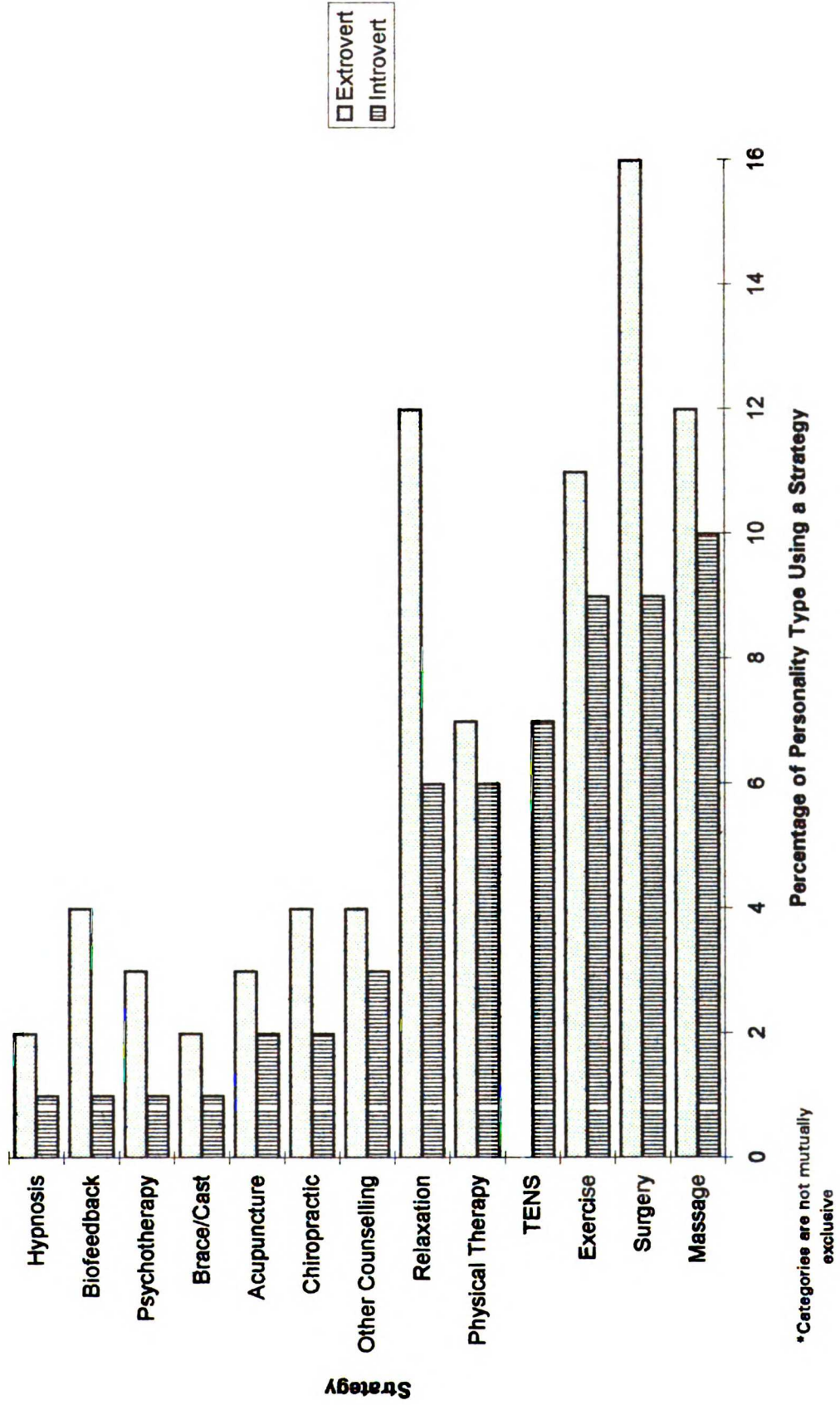
<u>Figure 2</u>. A comparison of the percentage of Judgers and Perceivers that used each non-pharmcological pain relief strategy. Strategy categories are not mutually exclusive.

Comparison of Non-Pharmacological Strategies* Used by Judgers and Perceivers

Legend: □ Perceiver ⊞ Judger

X-axis (Strategy): Hypnosis, Biofeedback, Psychotherapy, Brace/Cast, Acupuncture, Chiropractic, Other Counselling, Relaxation, Physical Therapy, TENS, Exercise, Surgery, Massage

Y-axis: Percentage of Personality Type Using a Strategy (0, 2, 4, 6, 8, 10, 12, 14, 16, 18)

*Categories are not mutually exclusive

58
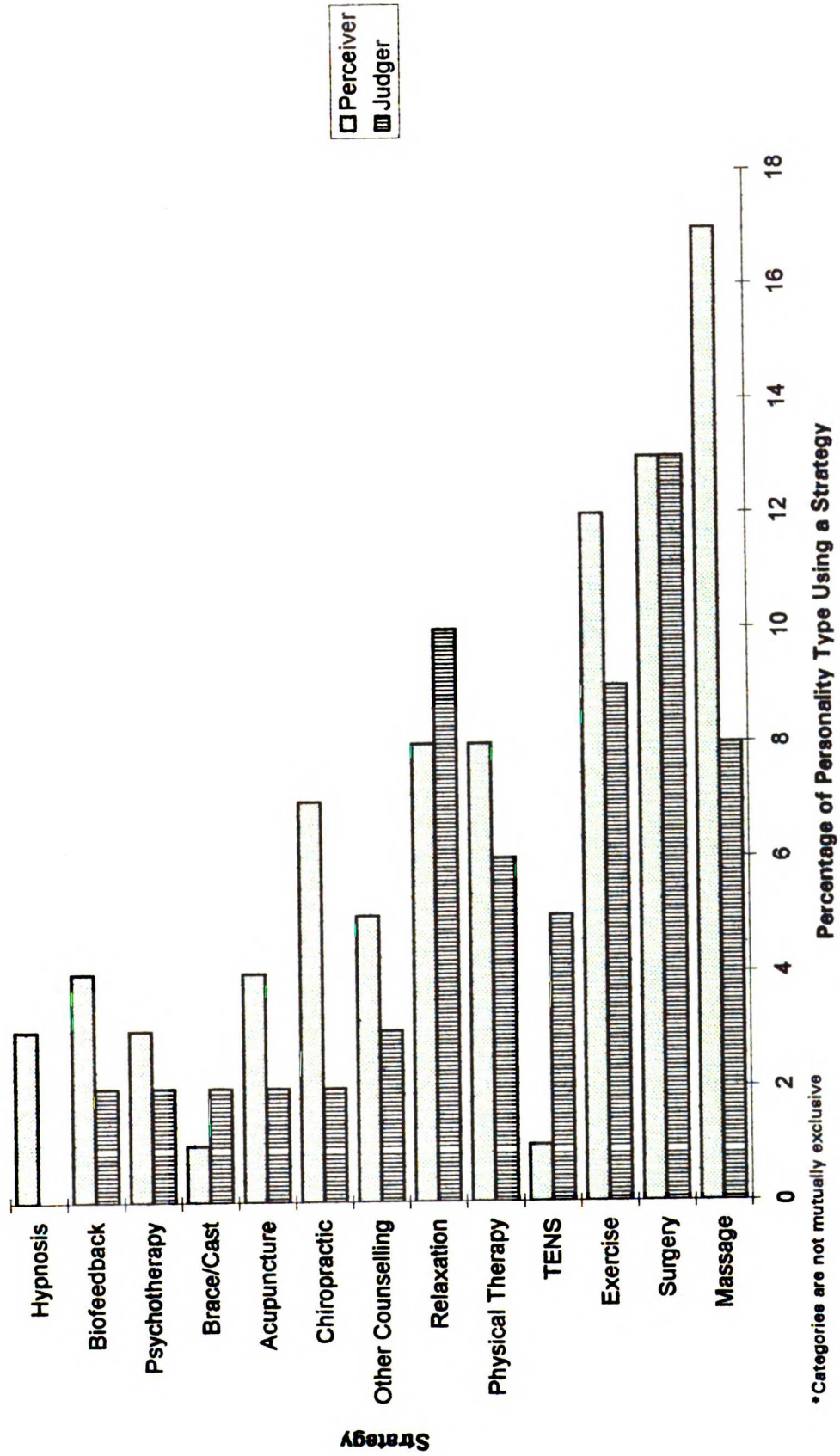
APPENDIX A

PATIENT INFORMATION

QUESTIONNAIRE

1. Your Age: _____

2. _____ Female   _____ Male

3. Do you live alone?   _____ Yes   _____ No

4. What is your current marital status?

    _____ Married/Partnered   _____ Separated
    _____ Widowed   _____ Never Married
    _____ Divorced   _____ Not married but living together

5. Circle the highest grade or year you completed in regular school, vocational school, college, or graduate professional training?

Grade School	High School
1 2 3 4 5 6 7 8	9 10 11 12

College	Graduate School
13 14 15 16	17 18 19 20 21 22 >22

6. Circle the number that best describes your ethnic group:

    1   American Indian   5   Eurasian
    2   Asian or Pacific Islander   6   Hispanic
    3   Black   7   Mixed Ethnic Background
    4   Caucasian/White   8   Other (specify)_____

7. What is your current employment status?

    _____ Full-time   _____ Retired
    _____ Part-time   _____ Unemployed due to pain
    _____ Self-employed   _____ Unemployed for other reasons
    _____ Homemaker   _____ Disability

8. What is the purpose of your present cancer treatment?

    _____ Cure my disease   _____ Treat the symptoms associated
    _____ Control my disease   with my disease
    _____ Don't know the purpose _____ Other (specify) _____

INSTRUCTIONS: PLEASE CIRCLE THE NUMBER THAT BEST DESCRIBES YOUR ABILITIES AT THE PRESENT TIME.

I feel normal; I have no complaints or symptoms.	100
I am able to carry on normal activities; I have minor signs or symptoms of my illness.	90
It takes a bit of effort to engage in my normal activity	80
I can care for myself, but am unable to carry on normal activity or to do active work.	70
I require occasional assistance, but am able to care for most of my personal needs.	60
I require a considerable amount of assistance and frequent medical care.	50
I require special care and assistance.	40
I feel severely disabled and need to be hospitalized.	30

PAIN/BDI2 6/13/91

INSTRUCTIONS: PLEASE CIRCLE THE NUMBER THAT BEST DESCRIBES HOW YOU HAVE BEEN FEELING DURING THE PAST WEEK INCLUDING TODAY.

	Not at all	A little	Moderately	Quite a bit	Extremely
Tense	0	1	2	3	4
Angry	0	1	2	3	4
Worn out	0	1	2	3	4
Unhappy	0	1	2	3	4
Lively	0	1	2	3	4
Confused	0	1	2	3	4
Peeved	0	1	2	3	4
Sad	0	1	2	3	4
Active	0	1	2	3	4
On edge	0	1	2	3	4
Grouchy	0	1	2	3	4
Blue	0	1	2	3	4
Energetic	0	1	2	3	4
Hopeless	0	1	2	3	4
Uneasy	0	1	2	3	4
Restless	0	1	2	3	4
Unable to concentrate . .	0	1	2	3	4
Fatigued	0	1	2	3	4
Annoyed	0	1	2	3	4
Discouraged	0	1	2	3	4

PAIN/POMS

	Not at all	A little	Moderately	Quite a bit	Extremely
Resentful	0	1	2	3	4
Nervous	0	1	2	3	4
Miserable	0	1	2	3	4
Cheerful	0	1	2	3	4
Bitter	0	1	2	3	4
Exhausted	0	1	2	3	4
Anxious	0	1	2	3	4
Helpless	0	1	2	3	4
Weary	0	1	2	3	4
Bewildered	0	1	2	3	4
Furious	0	1	2	3	4
Full of pep	0	1	2	3	4
Worthless	0	1	2	3	4
Forgetful	0	1	2	3	4
Vigorous	0	1	2	3	4
Uncertain about things . .	0	1	2	3	4
Bushed	0	1	2	3	4

PAIN EXPERIENCE SCALE

Below are a number of statements about cancer pain and pain relief. Please make an X on the line to indicate your response.

Your Understanding of Pain

1. Cancer pain can be effectively relieved.

   disagree _____ agree

2. Pain medicines should be given only when pain is severe.

   disagree _____ agree

3. Addiction refers to a person's desire to use drugs for their psychic effects rather than for medical use of relieving pain. Most cancer patients on pain medicines will become psychologically addicted to the medicines over time.

   disagree _____ agree

4. Drug dependence means that a person would go through withdrawal if a pain medicine was stopped. Most cancer patients on pain medicines will become physically dependent on the medicines over time.

   disagree _____ agree

5. It is better to give the lowest amount of medicines possible early on so that larger doses will be available later if pain increases.

   disagree _____ agree

6. It is better to give pain medications around the clock (on a schedule) rather than only when needed.

   disagree _____ agree

7. Treatments other than medications (such as massage, heat, relaxation) can be effective for relieving pain.

   disagree _____ agree

8. Pain medicines can often interfere with breathing.

    disagree _____ agree

9. Patients are often given too much pain medicine.

    disagree _____ agree

10. Have you had cancer-related pain in the past month? ____ Yes   ____ No

     IF YES, please complete questions 11 through 14 below.

Your Experience with Pain

11. How much pain are you currently having?

     no pain _____ a great deal

12. How much pain relief are you currently receiving?

     no relief _____ a great deal

13. How distressing is your pain to you?

     none _____ a great deal

14. How distressing is your pain to your family members?

     none _____ a great deal

Below are a number of questions about your disease and quality of life. Please make an X on the line to indicate your response.

1. How is your present state of health?

   extremely   excellent
   poor health _____ health

2. How easy or difficult is it to adjust to your disease and treatment?

   not at all   very easy
      easy   _____ to adjust
   to adjust

3. How much enjoyment are you getting out of life?

                                                               a great deal
   no enjoyment _____ of enjoyment

4. Do you feel financially secure?

   not at all   extremely
      secure _____ secure

5. If you have pain, how distressing is it?

   not at all
   distressing or   extremely
   absolutely _____ distressing
      no pain

6. How useful do you feel?

   not at all   extremely
      useful _____ useful

7. How much happiness do you feel?

   not at all   extremely
      happy   _____ happy

8. How satisfying is your life?

```
not at all                                          extremely
satisfying  _____  satisfying
```

9. Do you receive enough love from your family and friends?

```
not enough or                                      just the right
   too much  _____  amount of love
      love
```

10. Is your disease or treatment interfering with your personal relationships?

```
not at all                                          completely
interfering _____  interfering
     with                                               with
relationships                                      relationships
```

11. Are you worried (fearful or anxious) about the outcome of your disease?

```
not at all                                          constantly
   worried  _____  worried
```

12. How much are you able to do the things you like to do, such as watch TV,
     read, garden, listen to music, take walks, play tennis, play cards, etc.?

```
not at all                                          completely
able to do  _____  able to do the
   things I                                          things I like
like to do                                              to do
```

13. How is your present ability to concentrate on things?

```
extremely                                           excellent
   poor     _____  concentration
concentration
```

14. How much strength do you have?

```
no strength                                         a great deal
   at all   _____  of strength
```

15. Do you tire easily?

      I do not tire   I tire very
         easily   _____ easily

16. Do you sleep enough to meet your needs?

      I do not get   I get the
      enough sleep _____ right amount
                                                       of sleep

17. How good is your quality of life?

      extremely poor   excellent
        quality of   _____ quality of
           life   life

18. Are you able to take care of your personal needs (dress, comb hair, toilet, eat, shower, bathe)?

      I can't do   I can do
        anything   _____ everything
        by myself   by myself

19. How much pain do you have?

        no pain   a great deal
        at all   _____ of pain

20. How much of an appetite do you have?

      no appetite   excellent
        at all   _____ appetite

21. How are your bowel movements?

      the worst I've   very good
        ever had   _____ bowel movements
      (either too   (regular
      much diarrhea   pattern, no
      or too constipated)   diarrhea or
                                                   constipation

22. Do you eat enough to meet your needs?

```
      don't eat                                        eat the right
        right   _____      amount
  (eat too little
    or too much)
```

23. Are you worried about your weight?

```
     not at all                                        very worried
       worried  _____      about weight
    about weight
```

24. Do you have nausea?

```
     never have                                        constantly
       nausea   _____      nauseated
```

25. Do you vomit?

```
                                                       vomit all
    never vomit  _____      the time
```

26. Does food taste different?

```
    food tastes                                        food tastes
     just fine   _____      very different
```

27. Are you able to get around the way you want (walk around your room or home, get out of your place, go shopping, drive your car or take public transportation, etc)?

```
    completely                                         can get around
    bed bound    _____      on my own
```

28. How satisfied are you with your appearance?

```
    completely                                         completely
    dissatisfied _____      satisfied
     with my                                           with my
    appearance                                         appearance
```

29. Are you worried about unfinished business?

       not at all   extremely
        worried _____ worried

30. Do you feel you are fulfilling your responsibilities to others (family or community or church, etc)?

         not   fulfilling
       fulfulling _____responsibilities
     responsibilities   well

31. Does life have meaning for you?

      life has no   life has a
        meaning _____ great deal of
                                                    meaning

32. Do you receive enough emotional support from your family and friends?

      not enough   just the right
      or too much _____ amount of
      emotional   emotional
       support   support

33. Do you feel you make others happy (family, friends)?

      I make others   I make others
      very unhappy _____ very happy

There are no *RIGHT* or *WRONG* answers to these questions. Your answers will help show how you like to look at things and how you like to go about deciding things. *After reading each question, indicate by making an X in the space next to the answer that comes closest to how you usually feel or act.*

PART I

1. Are you usually
    ____ a *good mixer*, or
    ____ rather quiet and reserved?

2. If you were a teacher, would you rather teach
    ____ fact courses, or
    ____ courses involving theory?

3. Do you more often let
    ____ your heart rule your head, or
    ____ your head rule your heart?

4. When you go somewhere for the day, would you rather
    ____ plan what you will do and when, or
    ____ just go?

5. When you are with a group of people, would you usually rather
    ____ join in the talk of the group, or
    ____ talk with one person at a time?

6. Do you usually get along better with
    ____ imaginative people, or
    ____ realistic people?

7. Is it a higher compliment to be called
    ____ a person of real feeling, or
    ____ a consistently reasonable person?

8. Do you prefer to
    ____ arrange dates, parties, etc., well in advance, or
    ____ be free to do whatever looks like fun when the time comes?

9. In a large group, do you more often
    ____ introduce others, or
    ____ get introduced?

10. Would you rather be considered
    ____ a practical person or
    ____ an ingenious person?

11. Do you usually
    ____ value sentiment more than logic, or
    ____ value logic more than sentiment?

12. Are you more successful
    ____ at dealing with the unexpected and seeing quickly what should be done, or
    ____ at following a carefully worked out plan?

13. Do you tend to have
    ____ deep friendships with a very few people, or
    ____ broad friendships with many different people?

14. Do you admire more the people who are
    ____ conventional enough never to make themselves conspicuous, or
    ____ too original an individual to care whether they are conspicuous or not?

15. Do you feel it is a worse fault to be
    ____ unsympathetic, or
    ____ unreasonable?

16. Does following a schedule
    ____ appeal to you, or
    ____ cramp you?

17. Among your friends, are you
    ____ one of the last to hear what is going on, or
    ____ full of news about everybody?

18. Would you rather have as a friend
    ____ someone who is always coming up with new ideas, or
    ____ someone who has both feet on the ground?

19. Would you rather work under someone who is
    ____ always kind, or
    ____ always fair?

20. Does the idea of making a list of what you should get done over a weekend
    ____ appeal to you, or
    ____ leave you cold,
    ____ positively depress you?

21. Do you
    ____ talk easily to almost anyone for as long as you have to, or
    ____ find a lot to say only to certain people or under certain conditions?

22. In reading for pleasure, do you
    ____ enjoy odd or original ways of saying things, or
    ____ like writers to say exactly what they mean?

23. Do you feel it is a worse fault
    ____ to show too much warmth, or
    ____ not to have warmth enough?

24.   *[On this question only, if two answers are true, mark both.]*
      In your daily work, do you
      _____ rather enjoy an emergency that makes you work against time, or
      _____ hate to work under pressure, or
      _____ usually plan your work so you won't need to work under pressure?

25.   Can the new people you meet tell what you are interested in
      _____ right away, or
      _____ only after they really get to know you?

26.   In doing something that many other people do, does it appeal to you more
      to
      _____ do it in the accepted way, or
      _____ invent a way of your own?

27.   Are you more careful about
      _____ people's feelings, or
      _____ their rights?

28.   When you have a special job to do, do you like to
      _____ organize it carefully before you start, or
      _____ find out what is necessary as you go along?

29.   Do you usually
      _____ show your feelings freely, or
      _____ keep your feelings to yourself?

30.   In your way of living, do you prefer to be
      _____ original, or
      _____ conventional?

31.   When it is settled well in advance that you will do a certain thing at a
      certain time, do you find it
      _____ nice to be able to plan accordingly, or
      _____ a little unpleasant to be tied down?

32.   Would you say you
      _____ get more enthusiastic about things than the average person, or
      _____ get less excited about things than the average person?

33.   Is it higher praise to say someone has
      _____ vision, or
      _____ common sense?

34.   Do you
      _____ rather prefer to do things at the last minute, or
      _____ find doing things at the last minute hard on the nerves?

35.   At parties, do you
      _____ sometimes get bored, or
      _____ always have fun?

36. Do you think it more important to be able
    ____ to see the possibilities in a situation, or
    ____ to adjust to the facts as they are?

37. Do you think that having a daily routine is
    ____ a comfortable way to get things done, or
    ____ painful even when necessary?

38. When something new starts to be the fashion, are you usually
    ____ one of the first to try it, or
    ____ not much interested?

39. Would you rather
    ____ support the established methods of doing good, or
    ____ analyze what is still wrong and attack unsolved problems?

40. When you think of some little thing you should do or buy, do you
    ____ often forget it till much later, or
    ____ usually get it down on paper to remind yourself, or
    ____ always carry through on it without reminders?

41. Are you
    ____ easy to get to know, or
    ____ hard to get to know?

42. Is it harder for you to adapt to
    ____ routine, or
    ____ constant change?

43. When you are in an embarrassing spot, do you usually
    ____ change the subject, or
    ____ turn it into a joke, or
    ____ days later, think of what you should have said?

44. When you start a big project that is due in a week, do you
    ____ take time to list the separate things to be done and the order or
    doing them, or
    ____ plunge in?

45. Do you think the people close to you know how you feel
    ____ about most things, or
    ____ only when you have had some special reason to tell them?

46. In getting a job done, do you depend on
    ____ starting early, so as to finish with time to spare, or
    ____ the extra speed you develop at the last minute?

47. When you are at a party, do you like to
    ____ help get things going, or
    ____ let the others have fun in their own way?

48.   If you were asked on a Saturday morning what you were going to do that day, would you
      ____ be able to tell pretty well, or
      ____ list twice too many things, or
      ____ have to wait and see?

49.   Do you find the more routine parts of your day
      ____ restful, or
      ____ boring?

PART II

Which word in each pair appeals to *you* more? Think what the word means, not how they look or how they sound.

1. ____ gentle
    ____ firm

2. ____ thinking
    ____ feeling

3. ____ convincing
    ____ touching

4. ____ analyze
    ____ sympathize

5. ____ facts
    ____ ideas

6. ____ justice
    ____ mercy

7. ____ statement
    ____ concept

8. ____ compassion
    ____ foresight

9. ____ theory
    ____ certainty

10. ____ benefits
    ____ blessings

11. ____ literal
    ____ figurative

12. ____ determined
    ____ devoted

13. ____ hearty
    ____ quiet

14. ____ imaginative
    ____ matter-of-fact

15. ____ firm-minded
    ____ warm-hearted

16. ____ reserved
    ____ talkative

17. ____ make
    ____ create

18. ____ peacemaker
    ____ judge

19. ____ scheduled
    ____ unplanned

20. ____ calm
    ____ lively

21. ____ sensible
    ____ fascinating

22. ____ soft
    ____ hard

23. ____ systematic
    ____ spontaneous

24. ____ speak
    ____ write

25. ____ production
    ____ design

26. ____ forgive
    ____ tolerate

27. ____ systematic
    ____ casual

28. ____ sociable   29. ____ concrete   30. ____ who
    ____ detached   ____ abstract   ____ what

31. ____ impulse   32. ____ party   33. ____ build
    ____ decision   ____ theater   ____ invent

34. ____ uncritical   35. ____ punctual   36. ____ foundation
    ____ critical   ____ leisurely   ____ spire

37. ____ wary   38. ____ changing   39. ____ theory
    ____ trustful   ____ permanent   ____ experience

40. ____ agree   41. ____ orderly   42. ____ sign
    ____ discuss   ____ easygoing   ____ symbol

43. ____ quick   44. ____ accept   45. ____ known
    ____ careful   ____ change   ____ unknown

In the past **month**, have you experienced pain related to your cancer or cancer treatment?

____ Yes   ____ No

In the past **month**, have you experienced pain from a cause other than your cancer or cancer treatment?

____ Yes   ____ No

PLEASE RETURN THIS QUESTIONNAIRE TO YOUR NURSE WHEN COMPLETED.

If you answered YES to either or both of the above questions, your nurse will give you an additional questionnaire to complete. Please complete these questionnaires now or bring them back at your next scheduled appointment.

PAIN2/MB 6/14/91

APPENDIX B

THE MYERS-BRIGGS

TYPE INDICATOR

There are no *RIGHT* or *WRONG* answers to these questions. Your answers will help show how you like to look at things and how you like to go about deciding things. *After reading each question, indicate by making an X in the space next to the answer that comes closest to how you usually feel or act.*

PART I

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    _____ a *good mixer*, or
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    _____ fact courses, or
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5. When you are with a group of people, would you usually rather
    _____ join in the talk of the group, or
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    _____ imaginative people, or
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    ____ often forget it till much later, or
    ____ usually get it down on paper to remind yourself, or
    ____ always carry through on it without reminders?

41. Are you
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42. Is it harder for you to adapt to
    ____ routine, or
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    ____ turn it into a joke, or
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         doing them, or
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    _____ restful, or
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they look or how they sound.

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   _____ firm

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   _____ touching

4. _____ analyze
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6. _____ justice
   _____ mercy

7. _____ statement
   _____ concept

8. _____ compassion
   _____ foresight

9. _____ theory
   _____ certainty

10. _____ benefits
    _____ blessings

11. _____ literal
    _____ figurative

12. _____ determined
    _____ devoted

13. _____ hearty
    _____ quiet

14. _____ imaginative
    _____ matter-of-fact

15. _____ firm-minded
    _____ warm-hearted

16. _____ reserved
    _____ talkative

17. _____ make
    _____ create

18. _____ peacemaker
    _____ judge

19. _____ scheduled
    _____ unplanned

20. _____ calm
    _____ lively

21. _____ sensible
    _____ fascinating

22. _____ soft
    _____ hard

23. _____ systematic
    _____ spontaneous

24. _____ speak
    _____ write

25. _____ production
    _____ design

26. _____ forgive
    _____ tolerate

27. _____ systematic
    _____ casual

28. ____ sociable
    ____ detached

29. ____ concrete
    ____ abstract

30. ____ who
    ____ what

31. ____ impulse
    ____ decision

32. ____ party
    ____ theater

33. ____ build
    ____ invent

34. ____ uncritical
    ____ critical

35. ____ punctual
    ____ leisurely

36. ____ foundation
    ____ spire

37. ____ wary
    ____ trustful

38. ____ changing
    ____ permanent

39. ____ theory
    ____ experience

40. ____ agree
    ____ discuss

41. ____ orderly
    ____ easygoing

42. ____ sign
    ____ symbol

43. ____ quick
    ____ careful

44. ____ accept
    ____ change

45. ____ known
    ____ unknown

In the past *month*, have you experienced pain related to your cancer or cancer treatment?

____ Yes   ____ No

In the past *month*, have you experienced pain from a cause other than your cancer or cancer treatment?

____ Yes   ____ No

PLEASE RETURN THIS QUESTIONNAIRE TO YOUR NURSE WHEN COMPLETED.

If you answered YES to either or both of the above questions, your nurse will give you an additional questionnaire to complete. Please complete these questionnaires now or bring them back at your next scheduled appointment.

APPENDIX C

THE CANCER-RELATED PAIN

QUESTIONNAIRE

Cancer-Related Pain Information

1. Has your cancer pain forced you to limit your work activities?

   _____ Yes   _____ No   _____ Not Employed

2. Where is your pain?

   _____

   _____

3. When did your cancer-related pain start?

   _____

4. Is the cancer pain your major problem?   _____ Yes   _____ No

   If not, what is? _____

   _____

4. Describe what you think is the cause of your pain.

   _____

   _____

   _____

1. How often does your cancer-related pain occur?

        ____ continuously (non-stop)
        ____ several times a day
        ____ once or twice a day
        ____ several times a week
        ____ less than 3-4 times per month
        ____ once or twice a month
        ____ less than once a month.

2. How has the *intensity* of the cancer-related pain changed throughout the time you have had it?

        ____ increased
        ____ decreased
        ____ stayed the same
        ____ variable (increased + decreased)

3. If you have pain free periods, how long do they last?

        ____ minutes
        ____ hours
        ____ days
        ____ weeks
        ____ months

4. Which of the following affect your cancer-related pain? (Mark *B* for better, *W* for worse, and *leave blank* for no effect.

    ____ massage or rubbing   ____ coughing   ____ walking
    ____ getting out of bed   ____ standing   ____ lying down
    ____ sudden movements   ____ running   ____ vibration
    ____ wet climate   ____ fatigue   ____ straining
    ____ alcoholic drinks   ____ anxiety   ____ cold climate
    ____ caffeinated drinks (coffee, ____ noise   ____ heat
         tea, colas)   ____ hot climate   ____ cold
    ____ strong emotion (anger,   ____ ice   ____ sitting
         excitement, surprise, etc.)

    ____ other (specify) _____
    ____ particular movements (explain)

5. Your current cancer-related pain intensity:

    Pain Scale

0	1	2	3	4	5	6	7	8	9	10
none		mild			moderate			severe		excruciating

    a. Choose the number from the scale above which best describes your degree of cancer-related pain for each of the following, and place it in the space provided:

    _____ your pain right now
    _____ your current average daily pain
    _____ your current pain at its worst
    _____ your current pain at its least

    b. How many days out of a typical week do you currently experience significant cancer-related pain (pain that interferes with your mood and/or activities)?
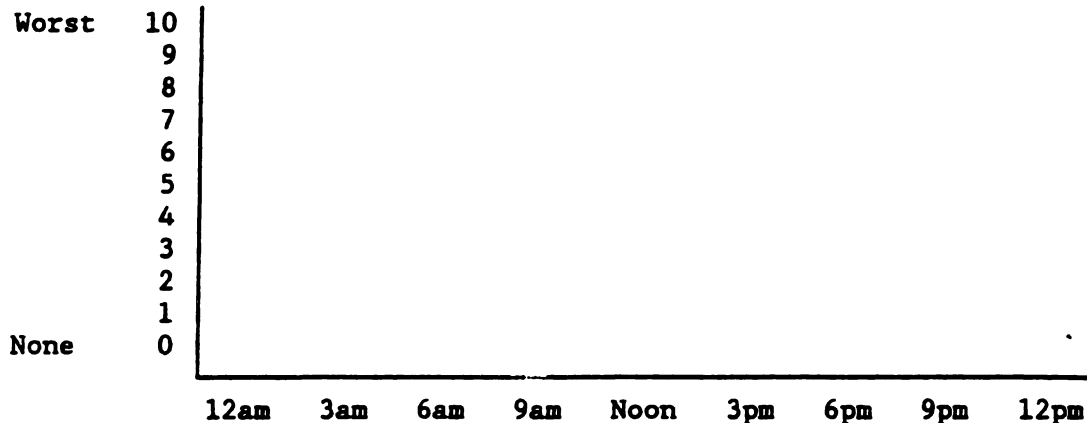
    _____ (enter how many days -- 0 to 7)

    c. On those days where you have significant cancer-related pain, how many hours of the day does it currently last?

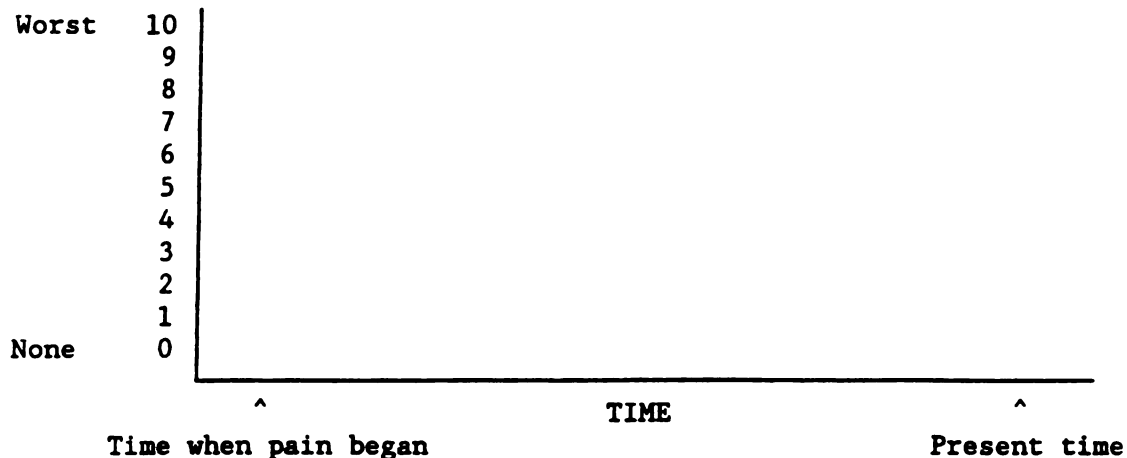   _____ (enter how many hours -- 0 to 24)

6. How does your cancer-related pain change during a typical day? On the graph below, for each time of day indicate the severity of your pain (10 indicates the worst pain you have ever had).

    PAIN INTENSITY

    Worst 10
          9
          8
          7
          6
          5
          4
          3
          2
          1
    None 0

    12am   3am   6am   9am   Noon   3pm   6pm   9pm   12pm

7.   How has your cancer-related pain changed over the entire period of time since it began?

PAIN INTENSITY

```
Worst   10 |
         9 |
         8 |
         7 |
         6 |
         5 |
         4 |
         3 |
         2 |
         1 |
None     0 |_____
            ^                    TIME                      ^
        Time when pain began                          Present time
```

Date this pain began: _____

## EFFECT OF CANCER-RELATED PAIN ON ACTIVITY

Please tell us how often your cancer-related pain interferes with your activities by writing the number of the descriptive term in the blank next to the type of activity:

1	continuously	____	work
2	several times a day	____	family activities
3	once a day	____	chores
4	several times a week	____	play/recreation
5	several times a month	____	exercise
6	once a month	____	sexual activity
7	less than once a month	____	sleep
8	never	____	eating

Using this picture, show which parts of your body are affected by pain by shading them with a pen or pencil.

If you have more than one type of pain, you may use a different color for each.
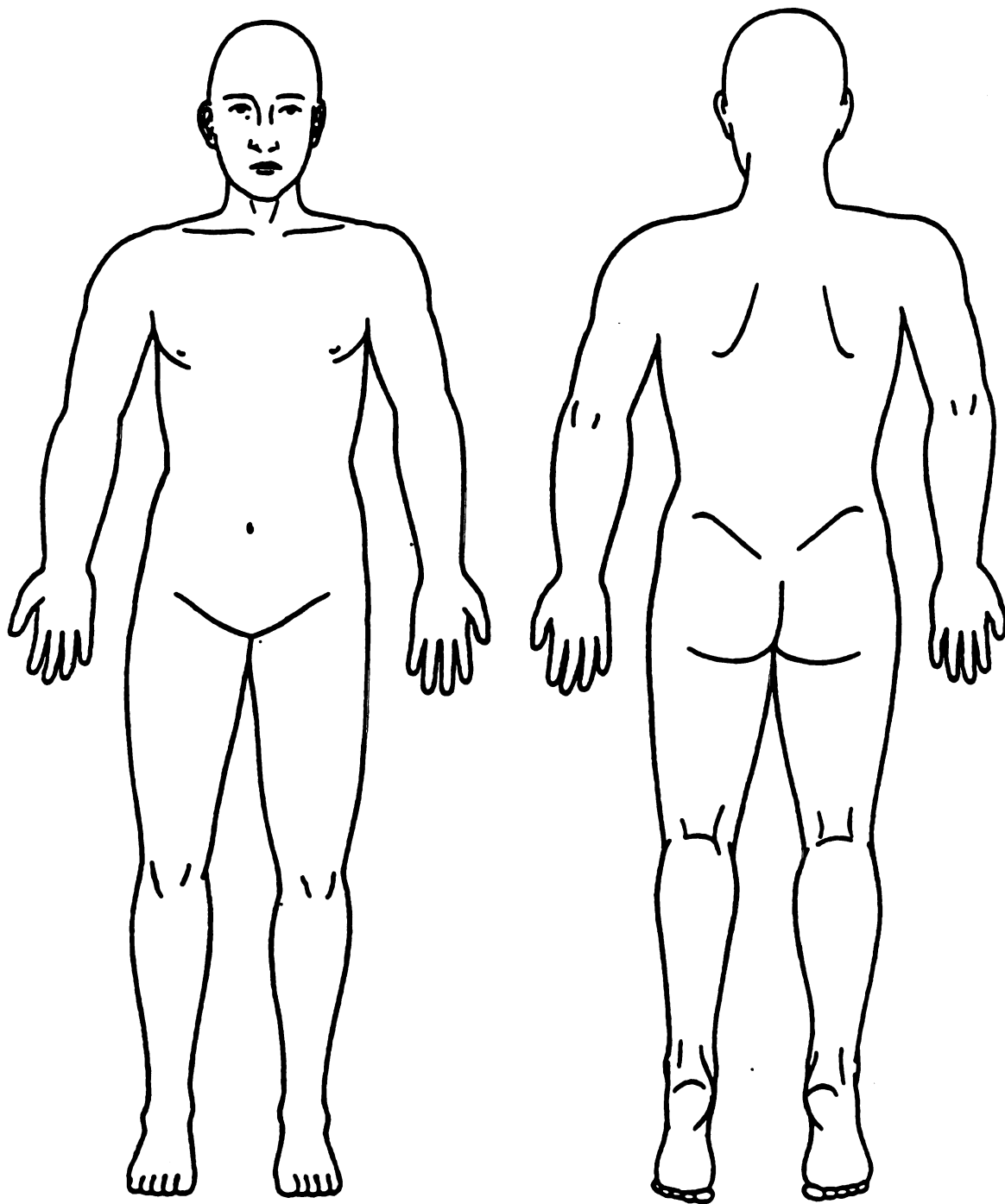
Some of the words below may describe your *present* cancer-related pain. Circle only one in each of the 20 groups *if* the group contains a word that describes your pain. Leave out any group that is not suitable.

1	2	3	4	5
Flickering	Jumping	Pricking	Sharp	Pinching
Quivering	Flashing	Boring	Cutting	Pressing
Pulsing	Shooting	Drilling	Lacerating	Gnawing
Throbbing	Shocking	Stabbing		Cramping
Beating		Lancinating		Crushing

6	7	8	9	10
Tugging	Hot	Tingling	Dull	Tender
Pulling	Burning	Itchy	Sore	Taut
Wrenching	Scalding	Smarting	Hurting	Rasping
	Searing	Stinging	Aching	Splitting
			Heavy	

11	12	13	14	15
Tiring	Sickening	Fearful	Punishing	Wretched
Exhausting	Suffocating	Frightful	Grueling	Blinding
		Terrifying	Cruel	
			Vicious	
			Killing	

16	17	18	19	20
Annoying	Spreading	Tight	Cool	Nagging
Troublesome	Radiating	Numb	Cold	Nauseating
Miserable	Penetrating	Drawing	Freezing	Agonizing
Intense	Piercing	Squeezing	Icy	Torturing
Unbearable		Tearing		

1. Please list *all* the medications you are *now* taking specifically for cancer-related pain (prescription or not). Indicate effect on pain by picking the letter next to the best choice:

       a   major relief
       b   some relief
       c   no relief
       d   some relief but bad side effects
       e   pain worse

Name of Drug	Strength	Number of Pills Per Day	Effect
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

2. Please list the *side-effects* associated with any of the pain medications you are *now* taking. Indicate the severity of the side-effects by picking the letter next to the best choice:

       a   very mild side-effects
       b   mild side-effects
       c   moderate side-effects
       d   severe side-effects
       e   intolerable side-effects

Name of Drug	Type of Side-Effect	Severity of Side-Effect
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

PAIN2/EFFECT 6/26/91

3.   Please list all pain medications and the highest dose you have tried *in the past* for your present cancer-related pain problem (use same letters as above to indicate the effect):

   a   major relief
   b   some relief
   c   no relief
   d   some relief but bad side effects
   e   pain worse

	Name of Drug	Strength	Number of Pills Per Day	Effect
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

4.   Please list the *side-effects* associated with any of the pain medications you have taken *in the past* for your present cancer-related pain problem. Indicate the severity of the side-effects by picking the letter next to the best choice:

   a   very mild side-effects
   b   mild side-effects
   c   moderate side-effects
   d   severe side-effects
   e   intolerable side-effects

	Name of Drug	Type of Side-Effect	Severity of Side-Effect
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

5. *Alcohol Use:*

NOTE: *One* alcoholic drink equals one beer, one 6 oz. glass of wine, or one shot of hard liquor.

Please note the average (or usual) number of alcolohic drinks you have per day.

_____

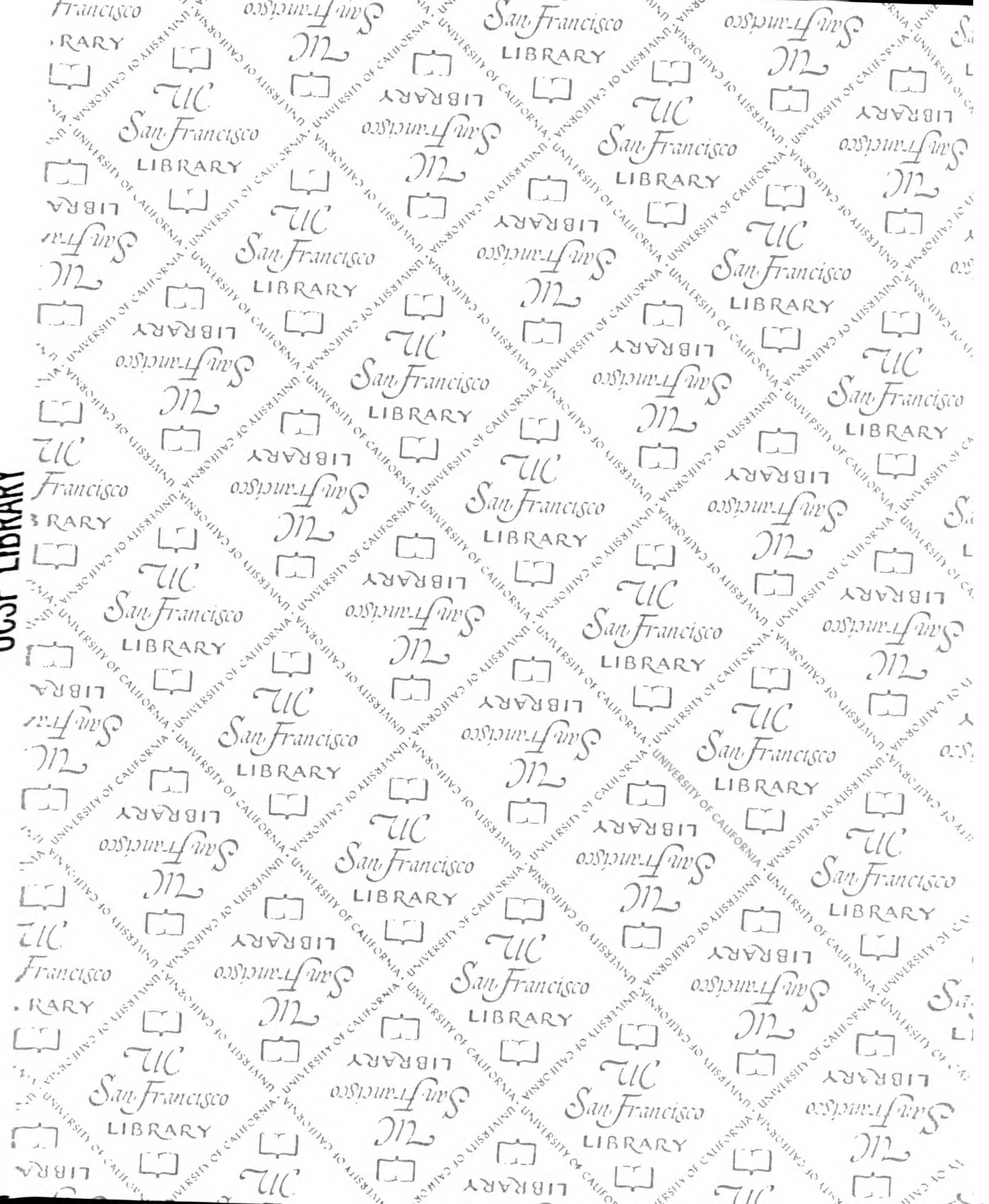Do you use alcohol to help cope with your cancer-related pain?

____ yes   ____ no   ____ sometimes

6. Please indicate which of the following treatments you have tried for your present cancer-related pain problem and the results of each. (Leave blank if not tried)

a   major relief
b   some relief
c   no relief
d   some relief but bad side effects
e   pain worse

____ Tranquilizers   ____ Homeopathy
____ Surgery   ____ Pain relievers
____ Traction   ____ Trigger point injections
____ Nerve blocks   ____ Acupuncture
____ Braces or cast(s)   ____ Massage
____ Chiropractic   ____ Psychotherapy
____ Physical therapy   ____ Other counselling
____ Relaxation training   ____ Biofeedback
____ Exercise program   ____ Hypnosis
____ Transcutaneous electrical
nerve stimulator (TENS)

7. Are there other things you have tried to decrease your cancer-related pain?

_____

_____

_____

_____

_____