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Cognitive appraisal, coping responses, social support, and psychosocial adjustment in Irish women with breast cancer receiving cytotoxic chemotherapy

McCarthy, Geraldine, Ph.D.
Case Western Reserve University (Health Sciences), 1994
COGNITIVE APPRAISAL, COPING RESPONSES, SOCIAL SUPPORT, AND PSYCHOSOCIAL ADJUSTMENT IN IRISH WOMEN WITH BREAST CANCER RECEIVING CYTOTOXIC CHEMOTHERAPY

by

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Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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COGNITIVE APPRAISAL, COPING RESPONSES, 
SOCIAL SUPPORT, AND PSYCHOSOCIAL ADJUSTMENT 
IN IRISH WOMEN WITH BREAST CANCER 
RECEIVING CYTOTOXIC CHEMOTHERAPY 

Abstract 
by 
GERALDINE McCARTHY 

The purpose of the study was to assess the relationships among cognitive appraisal of cancer, coping processes, social support and psychosocial health outcomes in a sample of Irish breast cancer women receiving cytotoxic chemotherapy. The model of perceptual appraisal and coping developed by Lazarus and Folkman provided the theoretical framework for the study. The study was cross sectional, descriptive and correlational. Eighty six newly diagnosed breast cancer females receiving first time chemotherapy as outpatients in five hospitals comprised the sample. A single questionnaire item measured appraisal, the Ways of Coping Checklist, the Norbeck Social Support Scale and the Psychosocial Adjustment to Illness Scale also were administered. The majority of women (53%) found having cancer for which they were being actively treated with chemotherapy a "challenge". 

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The challenge appraisal group were significantly different from the harm/loss and threat appraisal groups with respect to psychosocial adjustment to illness indicating greater adjustment. No differences were found between the appraisal groups with respect to coping and there were no significant relationships between coping and psychosocial adjustment to illness and between social support and psychosocial adjustment to illness. Thirty eight percent of the variance in psychosocial adjustment to illness was explained by the two emotion-focused coping strategies of self-control (3%), and escape-avoidance (22%), by four social support scales (9%) and time since diagnosis (4%). The study identified situation specific responses in Irish breast cancer women and contributes to the body of knowledge in cancer research. In particular, it provides an initial understanding of the feelings of Irish breast cancer women and provides a base for further nursing research on this topic.

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CHAPTER 1

BACKGROUND AND SIGNIFICANCE

Few diseases are feared as much as cancer (Cella, 1987). The World Health Organization (1988) documented the global cancer figure for 1986-1987 at 6.35 million new cases with some countries reporting increases in the rates of cancer of bowel and breast. Breast cancer is a common form of cancer and presents significant mortality in women. Estimates show that each year more than 1,040,000 Americans are diagnosed as having cancer (American Cancer Association, 1990). This represents 175,000 new cases yearly or a rate of one in every nine women affected (Boring, Squires and Tong, 1991). The incidence of breast cancer continues to increase, and in the United States, is estimated to account for thirty two percent of all deaths due to cancer.

Despite the lack of a national register for cancer in Ireland, it is known that cancer of the breast is common. The only cancer register, representing one Health Board area and one seventh of the population, reports 117 new cases of breast cancer per year (Southern Tumor Register, 1989). Cancer is the second major cause of death in Ireland (Department for Health Statistics, 1989-1991) and
in 1989 was responsible for twenty seven percent of all deaths. Of this percentage, nine percent represents deaths from female breast cancer. The statistics also show that female deaths from cancer of the breast are greater than any other female cancer. Cancer of the breast therefore is a major concern for women in Ireland.

Despite extensive research over a number of years many causative factors of the disease remain unknown. Nevertheless, life expectancy of most cancer patients today is considerably longer than it was five to ten years ago and several forms of cancer are now considered curable (Doig, 1988). Acute cancer illnesses are followed by chronic periods. During the acute phase, chemotherapy, radiotherapy and immunotherapy may be given in inpatient, outpatient or day care facilities. In general, these treatments continue over an extended period of time. Symptoms of the disease or its treatment progress and regress along the health illness continuum.

Researchers have defined some life events as personal catastrophes (Holmes and Medusa, 1974; Holmes and Ray, 1967; Hudgens, 1974). These events include life threatening illnesses or those requiring a significant change and adaptation in the life of the individual. Cancer is a life threatening illness and does result in life style changes. A number of researchers maintain that
the diagnosis of cancer and subsequent treatment is a major
dramatic life event which introduces many stressors into
the lives of individuals (Cassileth, Zupkin, Sutton-Smith,
and March, 1980; Christman, 1990; Frank-Stromborg, Wright,
Segello and Diekman, 1984; Greer, 1982; Hinton, 1973;
Krause and Krause, 1981; Krause, 1984, Zupkin, Sutton-
Smith, 1980; Weisman, 1979). Viewed from a stress theory
perspective cancer represents a severe, acute threat to
physical and psychological well-being (Holmes and Ray,
1967).

The literature about cancer documents reactions of
anger, denial and hostility (Hamara and Showtz, 1978), fear
of the unknown (Cain, 1983; Gotay, 1984; Peck and Boland,
1977), crisis (Lewis and Bloom 1979), depression,
withdrawal, dependency (Cooper, 1984; Westbrook and
Nordholm, 1986), perception of an inevitably fatal outcome
(Ali and Khalid, 1991, Santag, 1977, Weisman and Worden,
1977) and anticipatory grief (Archley, Cohen and Weinstein,
1984; Holland, 1986; Gullo, Cherico and Stadick, 1974). A
few research studies have demonstrated that cancer is
perceived as a challenge (Frank-Stromberg, Wright, Segale
and Dierman, 1984; Pettingale, Morris, Greer and Haybittle,
1985). Overall, there is little doubt that cancer
constitutes a major life event that requires physical and
psychological adaptation.
Responses to the diagnosis of cancer are intensified by methods of treatment that produce life pattern alterations (Greer and Silverfarb, 1982; Meyerowitz, Heinrich and Schag, 1983). An important treatment modality for cancer is cytotoxic chemotherapy. This may be used alone or as an adjunct to other treatments.Chemotherapy provokes fear in many individuals. Evidence exists that suggests chemotherapy may be seen as more injurious to health than the condition of cancer itself (Greer, 1982; Gotay, 1984; Pickard, 1991; Meterowich, Heinrich and Schag, 1983). Aggressive treatment protocols can lead to major disruption of daily living activities and to episodes of fatigue, weakness, nausea, vomiting, and other unpleasant side effects (Finlay, 1992; Gotay, 1984; Wujcik, 1992). Treatments also have been found to place financial and personal demands on individuals and their families, and to cause disruption to emotional health, social and sexual functioning and self image (Wolberg, Tanner, Malee and Romsaas, 1989). These problems may be influenced and complicated by the methods the individual uses to cope.

Cytotoxic chemotherapy is a common treatment for breast cancer. A large volume of research exists that relates to breast cancer population. The majority relates to informational requirements or management of side effects of drugs. While coping with stress has been a frequent
focus for research, little research has addressed the topic of coping with the stress of cancer or its treatments directly. Research on appraisal of cancer and chemotherapy, coping responses used and psychosocial adjustment is not evident in the literature. None of the studies reviewed followed the research methodology recommended by Lazarus and Folkman (1984) which is to examine appraisal, coping and outcome indicators of health together in a study. Therefore little is known about how individuals specifically cope with cancer and the necessary treatments.

The word cancer is not used very often with patients in Irish general hospitals. Instead words like "tumor", or "growth" are used and nurses chart abbreviations, thinking that patients or other health care workers who may read the notes are unable to interpret the meaning. Many Irish physicians do not tell their patients that they have cancer, those doctors who discuss the diagnosis and prognosis report that many patients seem to deny the conversation. Family members are often told the diagnosis and based on their wishes, the patient may or may not be informed. Often, this withholding of information from the patient or the denying of information by the patient places nurses in a difficult position.

Nursing colleagues report that patients do realize
that they have cancer due to the surgery performed or the treatment that has been prescribed. In Ireland there are five oncology medical specialists and five specialized cancer units to serve the needs of the population of 3.5 million. Only in the past eight years has the Irish Cancer Society through fundraising, promoted cancer nursing. The efforts of the Irish Cancer Society, have resulted in approximately 210 oncology specialist nurses (out of 25,000 registered nurses employed) receiving additional cancer related education at a one year University course. These nurses work in hospice facilities and community and hospital based programs. Because of the lack of specialty-trained doctors and nurses, many general surgeons and physicians treat cancer patients with cytotoxic chemotherapy in general wards located in general hospitals. Treatment protocols differ and there are very few clinical trials. However, in the Dublin area, the trend of referring cancer patients for treatment at one of the existing specialist services in the city is growing.

There is a paucity of research with Irish cancer patients. The available research is done by doctors and pertains to physiological functioning or clinical trials. The attitudes of the Irish public to cancer has not been researched. There are no studies in the Irish literature that examine cancer as a stressor or the coping strategies
and adjustments made by individuals. Further, no research has been done with Irish cancer patients on the role of social support and its effects on coping or psychosocial adjustment. There is no Irish nursing study reported which has used a sample of cancer patients. While oncological nursing is slowly developing there is no specific research on which to base practice.

The purpose of this study was to examine appraisal of cancer and cytotoxic chemotherapy, coping responses, social support and psychosocial health outcomes in a sample of Irish women receiving cytotoxic chemotherapy for breast cancer. The model of perceptual appraisal and coping developed by Lazarus and Folkman (1984) provided the theoretical framework for the study. The overall aim of the study was to generate findings that will ultimately improve the nursing care of breast cancer patients in Ireland. This objective was accomplished by describing how individuals with breast cancer who are receiving cytotoxic chemotherapy appraise their situation, cope with it, rely on available social support and make the necessary psychosocial adjustments as they receive chemotherapy treatments in a day care facility.

Cognizant of the gaps in the literature and from the perspective of this study the following research objectives were developed to describe the experience of Irish women
with breast cancer along the following dimensions:

1. To determine primary appraisal of patients with breast cancer and cytotoxic chemotherapy;

2. To ascertain predominant coping methods used by adult women who experience breast cancer and cytotoxic chemotherapy;

3. To investigate individual social support networks and their availability;

4. To identify psychosocial adjustment strategies;

5. To discern the relationships among appraisal, methods employed in coping, psychosocial adjustment and the degree of social support expressed.

Specifically the research is designed to provide answers to the following research questions and to test the following hypotheses.

The research questions and hypotheses are:

Q1: Will the type of appraisal expressed by subjects significantly influence coping strategies used to deal with the diagnosis of breast cancer and cytotoxic chemotherapy treatment?

H1a There is no difference between the harm/loss, challenge appraisal and threat appraisal groups with respect to problem focused scores on the Ways of Coping Checklist.
H1b There is no difference between the harm/loss and challenge appraisal groups and the threat appraisal group with respect to the emotion-focused scores on the Ways of Coping Checklist.

Q2: Is there a significant difference in the psychosocial adjustment to illness scores with respect to types of appraisal groups?

H2 There will be no difference between the harm/loss, challenge and threat appraisal groups with respect to psychosocial adjustment to illness scores.

Q3: How, and to what degree, will coping strategy employed by the study subjects significantly influence psychosocial adjustment to illness scores in women with breast cancer?

H3a There will be no difference between individuals who are problem-focused as indicated by the Ways of Coping Checklist and the emotive-focused groups with respect to psychosocial adjustment to illness scores.

Q4: How, and to what degree, will the strength of social support, as measured by the Norbeck social support scale, influence the coping strategy used by the study subjects?

H4a There will be a positive correlation between levels of social support and problem-focused scores obtained on the Ways of Coping Checklist for subjects enrolled in
the study.

H4b There will be an inverse relationship between levels of social support and emotion-focused scores obtained on the Ways of Coping Checklist for subjects included in this study.

Q5: How, and to what degree, will the level of social support influence psychosocial adjustment to illness?

H5a There will be a correlation between levels of social support and scores obtained on the Psychosocial Adjustment to Illness Scale for subjects included in the sample.

Q6: In this sample of patients with breast cancer which of the variables will explain the greatest amount of variance in psychosocial adjustment to illness?
Definitions

Primary appraisal

The theoretical definition of primary appraisal is the meaning that the individual gives to a specific situation (Folkman and Lazarus, 1985). For this study appraisal is operationalized as the response to two questions constructed by the investigator and based on qualitative work done of Folkman and Lazarus (1985). The closed question elicits the predominant feeling expressed in relation to having cancer and receiving chemotherapy. The specific choices for responses to the question are "harmful loss", "anticipated threat" or "challenge". An open ended question asks for a description of feelings about being diagnosed with a disease which requires chemotherapy and hospital treatment.

Coping

Coping is defined as the cognitive and behavioral efforts made to master or tolerate a threat that is judged to exceed the resources of the individual (Folkman and Lazarus, 1985). This variable is operationalized as the quantitative scores obtained on the emotion-focused and cognitive-focused scales of the Ways of Coping Checklist.
Psychosocial adjustment

The theoretical definition of psychosocial adjustment is feelings and symptoms of positive mental health and quality of one’s reactions to persons, institutions, and other aspects of one's environment (Derogatis, 1986). The operational definition is the quantitative scores obtained on the health care orientation, vocational environment, domestic environment, sexual relations, extended family relationships, social environment and psychosocial distress since illness scales on the Psychosocial Adjustment to Illness instrument.

Social support

The variable is defined conceptually as "interpersonal transactions that include one or more of the following: The expression of positive affect of one person towards another; the affirmation or endorsement of another person's behaviors, perceptions or expressed views; the giving of material aid to another" (Khan, 1979, p.85). The operational definition is the amount of social support given in relation to affect, affirmation and aid and expressed as a quantitative score (the giving of material aid to another", Khan, 1979, p.85) on the Norbeck Social Support Scale. The number of individuals who give "interpersonal transaction" (Khan, 1979, p.85) support also is examined.
Significance of the study

This study builds pertinent and specific nursing related theory on the stress adaptation model of coping provided by Lazarus and Folkman (1984). Findings from the study contribute empirical evidence to support the tenants of the model. Further, the role played by social support in coping and adjustment to breast cancer and cytotoxic chemotherapy is better identified. Overall, the research is focused on the patient but has significance for nursing practice. The significance of this study lies in the insight the findings provide on how females appraise, cope with and adapt to breast cancer and chemotherapy. In clinical practice, nurses work closely with patients diagnosed with cancer who receive cytotoxic chemotherapy. The adequacy of the care provided is determined by the research-based information the nurse has available on the topic. The nurse is a readily available resource and can contribute to the patients' knowledge base, judgment, methods of self-care and adaptation.

Successful responses to chemotherapy require a non-immune suppressed state with blood counts monitored frequently prior to treatment. Research findings show (Locke, 1982), that stress can depress the immune system. Locke (1982), in a literature review on this topic, concluded that immunosuppression caused by the treatment
can be intensified by the person’s ability to cope with threat of the cancer. Some researchers have hypothesized that having cancer and receiving chemotherapy may be perceived as a challenge by some individuals (Frank-Stromberg, Wright, Segale and Dierman, 1984; Pettingale, Morris, Greer and Haybittle, 1985). Others say that the situation may be perceived as a threat (Christmen, 1990; Greer, 1982). There is no research documented that was focused on a sample of breast cancer patients receiving cytotoxic chemotherapy to support or refute these suppositions. Consequently, the proposed study provides information on primary appraisal of cancer and chemotherapy in a sample of Irish women newly diagnosed with breast cancer. Research of this sort is essential as nurses are in the most opportune position of any group of health professionals to affect the quality of patient care in realms that may assist appraisal, coping and adjustment.

In the cancer literature, medical and nursing research has been focused on physical well-being and research on treatment outcomes has been concentrated on survival rates. Consequently, considerable information is available about specific forms of cancer, surgical interventions and the cytotoxic and radiological treatments possible. Until the 1980’s, reports on the psychological and social implications of cancer treatments in the medical and
nursing literature were relatively rare, and nonacceptance of such research efforts may still be seen. Comparatively little therefore is known on individual reactions to cancer and treatment modalities, the coping responses used or the effects of cancer and its treatments on the daily life patterns of individuals.

When cancer and chemotherapy are experienced by an individual who lacks the necessary resources to cope, a need state may arise in which increased tension and anxiety occurs. If the stressor is not relieved, the individual's perception of the situation is altered, and the resources improved to deal with the situation, then disorganization and depletion of the individual's health status can result (Navarin and Joslin, 1980). One way to alter a person's perception of the event is by communication. Nurses are in the most opportune position of any group to affect the quality of patient care in this regard. Observations of communications between surgeons and patients with breast cancer (Maguire, Tait and Brooks 1981) have shown that patients reluctantly disclose distress, and surgeons rarely ask patients about their emotional well-being. This situation is described as a conspiracy of pretence (Maguire, Tait, and Brooks, 1980). Molleman, Krobenbam, Annyas, Koops, and Sleufer, (1984) found that when cancer patients seek information they first ask other patients
they know who have the same diagnosis before trying to obtain the information from nurses and doctors. Evidence also exists to show that patients do ask physicians and nurses for direct assistance and for information so that they might help themselves (Dodd and Mood, 1981; Dodd, 1982; Doig, 1988). All of these facts have significant implications for nursing practice and questions must be asked about the relevance of answers to queries not involving physical functioning. Based on Schlotfeldt’s (1981) paradigm in which nurses are to be concerned with maximizing patients’ strengths, and promoting optimal levels of health function, comfort and self-fulfillment, an investigation of appraisal and coping is a salient topic for research.

Understanding coping responses can provide a framework for nurses to estimate the individual’s ability to deal with a diagnosis of breast cancer and chemotherapy. How a person copes and reacts in the cancer situation is important in the maintenance of personal equilibrium (Folkman and Lazarus, 1984). Further, Folkman and Lazarus (1984) proposed that individuals react by coping with emotion-focused or problem-focused strategies. Other researchers indicate that problem-focused strategies are enhanced by information (Cassileth, Zupkis, Sutton-Smith, and Mach, 1980). However, interventions to aid the
individual's coping emotionally are not so easy to identify. Although there is little evidence on effective ways of reducing distress, clinical observations suggest that many of the factors contributing to psychological distress and adjustment may be influenced by nursing interventions. At a clinical level, considerable efforts are made by nurses to assist individuals to cope with cancer and treatment modalities. However, the appropriateness of the interventions in meeting the patients' needs are not fully understood from the patients' perspectives. In emotional appraisal, nurses can help patients to live with feelings experienced. Research that explains the demands cancer patients face, and the strategies they use to deal with these demands, may be of help to nurses attempting to understand and assist those with cancer.

Coping, important in relation to nursing's metaparadigm concepts, links nursing with individuals, health and the environment. Coping itself may be seen as an interaction between the patient and the environment with the nurse helping with the maintenance of health equilibrium through supportive nursing activities. Findings from this study will extend these theoretical perspectives by providing situation-specific information that has the potential to promote supportive nursing
interactions.

In today's health care system, individuals are perceived as having the right and responsibility to participate in self-care. The trend is to inform patients of their diagnosis, treatment and the prognosis of their particular type of cancer. Likewise, the need to maintain these individuals at home with supportive health care is growing. For cancer patients, this means that many individuals previously treated in hospitals are now being treated at outpatient or day facilities. Cytotoxic chemotherapy treatments on an outpatient or day basis are the norm and the sample selected for this study attended such facilities. There is a common perception held that individuals with cancer are better able to cope at home rather than in hospital, aided by social support networks and normality of life and role. There has been little research however to support this claim. This leads to the question of resources individuals require and whether personal and social support variables affect coping and adjustment. The ways in which individuals cope at home while attending outpatient or day facilities are explored in this study. Further, the social support network experienced and the perceived adequacy of this support in sustaining the individual in the community are investigated. If social support is important then nurses
must assess its availability and adequacy and promote its use. Nurses must also understand that next-of-kin or significant others may not always provide the best social support. For patients with little social support, the nurse must act as a concerned caregiver. If the patient desires to share feelings and concerns and receive support from others, then the nurse can provide help through nursing interventions. Subsequently, the nurse might direct the individual to "Reach to Recovery" or "I Can Cope" programs. This counsel may provide the help required by patients to live with an unpredictable future and adjuvant treatments.

Many cancer patients become chronically ill and require prolonged hospitalization. The nursing profession is increasingly involved in the care of chronically ill individuals. Function in chronic illness means more than physical function. Also, it must include the premise that the individual recipient of health care is important and that what is felt and thought by the individual is vital. In situations of chronic illness, nurses are responsible for understanding the adaptation processes and for designing effective interventions to promote psychosocial adaptation. Psychosocial adaptation may be expressed in a variety of ways. In this study the concept is examined in relation to change in health care orientation, vocational
environment, domestic environment, sexual relations, extended family relations, social environment and psychological distress since illness. Knowledge of how individuals adjust in these domains, when coping at home and attending outpatient or day care facilities for cancer treatments, should help nurses to implement appropriate and effective strategies to assist the individual in making informed decisions and caring for themselves.

An understanding of the issues pertinent to appraisal, coping and adjustment and the resources necessary to do so effectively can assist nurses to help individuals through the development and maintenance of successful strategies. Cognizance of these issues also can assist nurses to identify the resources that are the intervening variables in the coping mechanism. Recognizing that there is no one best way to deal with every situation in which ineffective coping is experienced, supportive and restorative nursing interventions, based on research findings, may help to restore the coping balance. Emphasizing appraisal, coping, psychosocial adjustment and perceptions of social support in this research may help to remind nurses that these variables are of equal importance to holistic care as are the physical concerns.


Conceptual framework

The research design for this study is based on the theory of stress, appraisal and coping developed by Lazarus and his colleagues over the last 27 years (Coyne and Lazarus, 1980, Folkman, Lazarus, Dunkel-Schetter, DeLongis, Gruen, 1986, Lazarus, 1966, 1981, Lazarus, Averill and Opton, 1970, Lazarus and DeLongis, 1983, Lazarus and Folkman, 1980, 1984). In this framework, appraisal, coping and the presence of psychosocial and material resources are interrelated and associated with health outcomes following stressful experiences (Lazarus and Folkman, 1980). The concepts examined in the study which relate to the theory are primary appraisal, secondary appraisal or coping, psychosocial adjustment to illness and social support. Theoretically, coping is defined as the constantly-changing cognitive and behavioral efforts made to master, tolerate or reduce specific external or internal stimuli (Folkman and Lazarus, 1980, Pearlin and Schooler, 1978). Coping is viewed as dynamic and process-oriented. When life goals are unmet, coping is set in motion and the individual and the environment interact and influence each other in a reciprocal manner. The stimuli that activate coping mechanisms are stressful encounters or events that are appraised and perceived as taxing on personal resources (Scott, Oberst and Dropkin, 1980; Chan, 1984). Viewed from
this perspective, cancer and cytotoxic chemotherapy are the stressors in this study. The coping process refers to what a person does and thinks in a particular encounter and the changes in effort made to cope as the encounter unfolds during a single episode or across episodes (Lazarus and Folkman, 1984). According to Lazarus (1966), coping processes are the means utilized to tolerate a threat without disruptive anxiety and depression. Coping therefore, may be viewed as a buffer which moderates stress, its use being the maintenance of equilibrium, or a feeling of well-being and control.

Coping is a multidimensional concept. A key feature of coping is that cognitive appraisal has pivotal significance for responses. Primary appraisal, the first response, is a process of interpreting the significance of the stressor. After event recognition takes place, primary appraisal influences the way the stressful situation is managed. Appraisal is an evaluative process that determines whether or not anything is at stake in the encounter. The theoretical definition of primary appraisal is the meaning of the specific situation to the individual. The operational definition of primary appraisal is the expressed concern caused to the subject by the event in terms of harm, loss, or challenge (Folkman and Lazarus (1984). Harm/loss refers to the damage that has already
occurred, threat refers to harm or loss that has not occurred but is anticipated (anticipatory loss), and challenge refers to the opportunity for mastery, gain or growth (Folkman and Lazarus, 1980). Past experience and symbolic meaning influence appraisal and coping and help to explain why, as individuals, we see so many different responses to the same situation (Clark, 1987).

Uncertainty over diagnosis and outcome has been seen as a major variable influencing the patients experience with cancer (Mishel, Hostetter, King and Graham, 1984, Cassileith, Zupkis, Sutton-Smith, and Mach, 1980). When an event has an uncertain outcome, it may be evaluated as a stress because the individual is unable to obtain a clear-cut conception of what is to occur (Lazarus, 1966). In the research undertaken in this study, the diagnosis of breast cancer and chemotherapy are perceived as stressors and primary appraisal of the stressor is measured in terms of perceived harm/loss, threat or challenge.

In secondary appraisal (coping) specific coping strategies are called into action. The evaluative process is continued by the individual in which there is consideration of whether anything can be done to overcome the stress and prevent harm. Lazarus and Folkman (1984) proposed two general types of coping mechanisms or strategies used by individuals to cope with worries or
anxieties, and to decrease tension. These are behavior coping efforts (emotion-focused) and cognitive coping efforts (problem-focused). These strategies may be used in an overt or a covert manner. They are highly individualized and may be consciously or unconsciously activated (Aquilera and Messick, 1978). These behaviors may also be influenced by how the individual has coped in the past (Aquilera and Messick, 1978; Hamburg and Adams, 1967).

Emotion-focused coping refers to cognitive strategies (bargaining, avoidance) or regulation of emotional responses (anger, denial) used to change the meaning of the situation. The changed construal is based on a realistic interpretation of cues or on a reality distortion. Problem-focused coping refers to an objective, analytic process directed to both the environment and self. Examples are reasoning, finding solutions to the problems and information-seeking. Lazarus and Folkman (1984) emphasized that coping efforts may be focused either towards dealing with the problem itself or managing the unpleasant emotions that are aroused because of the problem. They suggested that, in general, emotion-focused coping methods are more likely to occur when there has been an appraisal that nothing can be done to change the situation. Problem-focused coping, on the other hand, is
used when the condition is appraised as being amenable to change. Reappraisal is a continuing reevaluation process of the shifting person-environment relationship. From a theoretical perspective, the significance of an event with respect to well-being is that well being is appraised differently at various stages and calls for a variety of stages and modes of coping. In this study coping is measured in terms of emotion-focused and problem-focused coping strategies.

According to Lazarus and Folkman (1984), the effects of coping, i.e. the outcome and adaptation, can be seen and measured in terms of physiological, psychological and social functioning. The outcomes therefore, can be depicted in terms of health, illness, morale, feeling of control of the situation with the ability to solve problems and social functioning. Feldman (1974) described adjustment or adaptation to chronic illness as coming to terms with the reality of the illness. Adaptation, from this perspective, means reorganization and acceptance of self so that there is purpose to living. The coping outcomes to be measured in this research are psychosocial. The components are health care orientation, vocational, social and domestic environments, sexual relations, extended family relations, and psychological distress.

Coping is affected by numerous interrelated factors.
In Lazarus and Folkman’s theory of coping, antecedents and mediating variables are identified that influence coping and its consequences. The antecedents are personal (commitments and beliefs), situational (novelty, predictability, uncertainty) and resources. An individual’s particular experience with these antecedents affects the appraisal of a potential or actual threat and also the coping process (Lazarus and Folkman, 1984).

Personal characteristics proposed by Lazarus and Folkman (1984) as antecedents to the appraisal and coping processes are commitments and beliefs. Commitments are defined as personal factors that influence appraisal of a particular encounter and include choices, values, goals, intensity, persistence and direction for the individual and reflects individual’s unique experiences. Beliefs are pre-existing notions that give meaning and understanding to the event. These thoughts determine how a person evaluates what is happening. They include personal control (mastery and confidence) and existential beliefs about God, fate, and justice (Coppersmith, 1967; Lazarus, 1966; Lazarus and Folkman, 1984, Nyamathi, 1987). Beliefs investigated in this study relate to the patient’s understanding of the disease and compliance with therapy.

Situational factors that influence coping include the problem, its physical and situational components. The
novelty, ambiguity and timing of the event coupled with temporal and event uncertainty, duration, imminence and predictability are all situational factors that pertain directly to the problem and influence the coping process. These factors determine the congruence of the person and a specific situation. The situational factor in the proposed study is breast cancer and cytotoxic chemotherapy. Other antecedent variables are time since diagnosis, and number and type of treatment which are also factors investigated in this study.

Important components on the resource side of the equation for Lazarus and Folkman (1984) are environmental resources. These include social skills, social networks and social supports and are considered important antecedents. The support of individuals perceived as powerful is thought to bolster a person's feelings that harm can be resisted. Such resources affect coping and appraisal by strengthening the individual's position against the stressor and reducing the degree of threat and negative adjustments in health (Lazarus, 1966). The environmental resource to be examined in this study is social support. The framework to be used is based on the work of Khan (1979) and Norbeck (1981) who define social support as interpersonal actions that include one or more of the following: "the affirmation or endorsement of
another persons behavior and the giving of material aid to another" (Khan, 1979, p.85). Included also within this framework is the concept of "convoy" or group of individuals who support the person at any particular point in time. This framework is used as the perspective is congruent with that of Lazarus and Folkman (1984) in relation to social network and social support amount required to help individuals cope with a particular stressor. In this study the number of individuals in the patient's network of social support and the amount of support given are measured.

Folkman and Lazarus (1984) proposed that the impact of environmental variables (inputs to the person) on adaptive outcomes are mediated by personal factors. Personal factors to be investigated in the proposed study are age, occupation and marital status.

In summary, appraisal, coping, and the presence of resources are interrelated and associated with health following stressful life experiences (Lazarus and Folkman, 1984). In primary appraisal, the individual judges the meaning of the situation. This judgment influences the way in which the stress is managed. There are three types of stress appraisal: (1) harm or loss which refers to damage that has already occurred, (2) anticipated threat which refers to harm or loss that has not occurred but is
anticipated and (3) challenge which refers to the opportunity for gain, growth, and mastery. Stress appraisal activates coping responses.

Coping is defined as the cognitive and behavioral efforts made to manage specific demands that have been appraised as taxing or exceeding a person's resources. Coping may be directed towards managing or altering the problem causing distress (problem-focused coping) or regulating the emotional distress response to the problem (emotion-focused coping). Overall problem-focused coping was used most often in encounters that were appraised as changeable. Emotion-focused coping was used in encounters appraised as unchangeable (Folkman et. al., 1986). Resources affect coping and appraisal by strengthening the individuals position against the stressor. The outcome of coping is adaptation.

The stress and coping model of Folkman and Lazarus (1984) is investigated from a new perspective in this study. The framework has not been used previously to systematically test appraisal, coping, social support and health functioning in individuals with breast cancer. The concepts to be examined in this study are appraisal, coping, psychosocial adjustment and social support. The hypothesized relationships between the study variables is represented in Figure 1.
CONCEPTUAL MODEL

STRESSFUL EVENT

SOCIAL SUPPORT

PRIMARY APPRAISAL

PERSONAL FACTORS

COPING

OUTCOME (PSYCHOSOCIAL HEALTH)

FIGURE 1: HYPOTHESESIED RELATIONSHIPS BETWEEN THE STUDY VARIABLES.

PERSONAL FACTORS:
Age, Education, Occupation, Marital status, Understanding of illness, Length of time since diagnosis.

SOCIAL SUPPORT:
Network, Affirmation, aid, affect.
CHAPTER 2

Literature review

Introduction

The key concepts around which this literature review is presented are appraisal, coping, psychosocial adjustment to illness and social support. In the first part literature pertaining to the appraisal of cancer and cytotoxic chemotherapy is introduced. Evidence is given that a stress situation exists if cancer is diagnosed and treatments prescribed. The literature review includes research with cancer populations and some relating to patients with other chronic diseases. The review demonstrates diversity of findings and poverty of research with the population of interest.

Research on coping strategies used to deal with the stressful situations of cancer and other chronic diseases is presented. The documented relationship between appraisal and coping is also examined. Studies relating to psychosocial adjustment to illness are presented next and one section deals with the relationship between coping and psychosocial adjustment. Finally, studies pertaining to social support and cancer patients are reviewed. The literature outlining the relationship between social
support, coping and psychosocial adjustment to illness also is presented. The review concludes with a brief discussion in which the rationale for the proposed study is discussed.

Cognitive Appraisal

A number of studies are available on the reaction of individuals to the diagnosis of cancer. However, studies of appraisal of cancer in a population receiving cytotoxic chemotherapy were not found in the literature. According to Germoni and McCorkle (1985) and Greer and Siberfarb (1982) the discovery that one has cancer is viewed by the individual as a stressful event and perceived as a greater threat than any other serious illness. Other studies revealed varied responses to the cancer diagnosis.

Frank-Stromborg (1989) undertook two major studies investigating the psychological impact of a cancer diagnosis in American populations. In the first (Frank-Stromborg, Wright, Segalla, and Diermann, 1984) ambulatory cancer patients were asked at interview what they remembered of their feelings after they received the diagnosis of cancer. Data were collected from a sample of 340 of 1127 individuals attending ambulatory-treatment cancer centres or oncology self-help groups. Content analysis of results showed seven mutually exclusive themes. The results suggested a diversity of responses ranging from
anger to challenge. Shock, fear and the "why me?" phenomenon was reported for 29% of the sample. Anger, depression and hopelessness was expressed by 16%, and 9% said that they did not want to think about the diagnosis. The most important finding of the study was that challenge was reported by 27% of the group studied. This finding is important because it is often assumed that all people fall apart when given a cancer diagnosis. These individuals reported the desire and intention to surmount the disease.

This study by Frank-Stromborg, et. al. (1984) is an important one in terms of the proposed research as it examined appraisal of threat in a cancer population. The challenge group could be considered those who desire mastery or control over the situation. These persons expressed relief at the diagnosis as they knew that something was wrong with their bodies. However while the research was important, the study has many flaws. The diversity of the sample in terms of age, sex, marital status, location of cancer, knowledge about the disease and length of time since diagnosis may have affected the results. Further, some patients were being actively treated for cancer but treatment type was not specified. Some sample members were attending support group meetings. The reliability or validity of instrumentation was not addressed.
Based on the first study of Frank-Stromborg et. al. (1984) the Diagnosis of Cancer Questionnaire to measure reaction to the diagnosis of cancer was developed. The instrument, consisting of 36 items, was subsequently tested with 461 patients receiving mixed cancer treatments (Frank-Stromborg, 1989). Of the subjects 45% had been diagnosed as having cancer within the previous 6 months. The remainder had been diagnosed for lengths of time between 6 and 18 months. Fifty nine percent of the participants were male and the remainder female. Ages ranged from 19 to 84 years. Findings were that the initial reaction to the diagnosis of cancer was composed of two distinct dimensions. These were Confrontive (fighting spirit, stoic acceptance) and Distress (denial, helpless\hopeless). A major criticism of this research is that the data was based on retrospection and that affective states may be colored by the passage of time. Some patients had been diagnosed as long as 18 months when they were requested to respond to the initial diagnosis. Their answers could have differed considerably from newly-diagnosed cancer patients. Males and females were included in the sample and mixed cancers were sampled. These factors could have influenced the results. The treatments given to the patients were not explained. Severity of disease, the presence of metastasis and treatment protocol may have also influenced the
results.

Krause (1991), in a study of Finnish women of varying cancer diagnosis, found different results from those of Frank-Stromborg, et al. (1984). Sixty eight percent (N=123) in a triangulation study reported shock at the diagnosis of cancer. They described their feelings as those involving horror, terror, surprise, anger, time standing still, emptiness, a sense of unreality, a punishment or simply fate. Challenge was not reported as a reaction by the sample. However, variation in the sample composition and methodology may explain the differences between the two studies. Further, culture differences, and knowledge about the diagnosis may have affected the results. The sample included males and females, aged 30 to 69, with varying stage cancers. They had diverse site cancers with 25% reporting relapses and metastasis. Individuals diagnosed for varying periods of time were asked to tell about the feelings evoked when the diagnosis of cancer was made. For some patients two years had elapsed since the diagnosis of cancer. These may have had difficulty in recalling feelings. Yet these responses were included with those of newly-diagnosed individuals and may have biased the results. The participants were recruited through advertisements in the media. The sample, therefore, were self-selected and how these individuals
might have differed from others was not addressed. However, the research cannot be dismissed as other researchers have documented similar results of disbelief, shock, anger and bitterness, uncertainty, fear and horror, crisis (Cantor, 1978; Holland, 1976; Krouse and Krouse, 1982; Mishel, Hostetter, King and Graham, 1984; Thomas, 1978; Weisman, Worden and Sobel, 1980).

Scott (1983), in a study of 85 women hospitalized for diagnostic breast biopsy, found that the experience was extremely stressful and of crisis proportion. The mean anxiety level before biopsy was found to be above group norms for institutionalized psychiatric patients diagnosed with acute anxiety reactions. Further, one third of the group demonstrated anxiety levels high enough to severely compromise general reasoning ability. Holland (1986) found similar results. In a study with newly-diagnosed cancer patients the reactions found at interview were of a grief reaction that is associated with "nearly overwhelming loss" or threatened loss of a loved one, life or limb. She noted that such reactions should be recognized as part of normal or anticipatory grief.

The largest longitudinal study of breast cancer patients reported in the literature is from the King's College School of Medicine in London, England (Morris, Blake and Buckley, 1985; Greer, Morris and Pettingale,
1979; Greer and Silverfarb, 1982; Pettingale, Philalithis, Tee and Greer, 1981; Pettingale, Morris, Greer, Haybittle, 1985). In 1979 results of a prospective study of women with early breast cancer reported psychological responses to the cancer diagnosis (Greer, Morris and Pettingale, 1979). The sample comprised 57 females assessed three months after a simple mastectomy. Patients were similar in terms of clinical stage, approximate tumor mass, histology grade, and hormonal and immunological responses (Pettingale, Morris, Greer and Haybittle, 1985). Interviews elicited the data which resulted in the findings that individuals responded in four main categories. These were "denial", "fighting spirit", "hopeless/helpless" and "stoic acceptance". Pettingale et. al. (1985) warned that the study results should be interpreted cautiously as the sample size was small, the treatment was simple mastectomy alone and that histology results for some individuals were not available at the time of the study.

In a later study by the same team and reported by Morris, Blake and Buckley (1985) a description of the initial reactions to cancer by 170 English women is given. The women were aged 18−70 years and had been diagnosed as cancers of breast, lymphoma and Hodgkin’s disease. They were recruited to the study from several teaching hospitals in London between 1981 and 1983. A standardized interview
with six sections was held with each participant within three months of diagnosis. Subsequently, standardized instruments (The Wakefield Self-Assessment Depression Inventory and the Spielberger Stait Trait Anxiety Inventory) were used to measure depression and anxiety. It was found that patients initial evaluation of their cancer diagnosis could be categorized as (i) Appraising (evaluations of the cancer diagnosis), (ii) Mitigating (manipulative thinking, blocking, partializing, assigning concern, directing anger) (iii) Facilitating (encouraging a positive mental set, rehearsing emotions, behavioral responses).

The study provided important information in defining responses to the diagnosis of cancer. These responses comprised three main categories. The methodology used was explained in detail and it built on prior research by the same team. The sample comprised individuals with mixed cancer diagnosis. Particular types of cancer may be appraised differently and in the study the current public awareness of breast cancer, lymphoma and Hodgkins disease was assumed to be equal. The interview was based on six questions to elicit response. The questions could have led to a response set. While the method of interview coding and analysis seemed to be painstakingly carried out it still remains that the categories arising could have been
biased by subjectivity.

Magnes et. al, (1981) identified three main responses to the diagnosis of cancer in a study of 66 cancer patients of different ages and diagnosis. The major findings were positive and optimism was evident. However, a small number of the respondents reflected lack of adjustment to the illness which did not change over time unless the medical condition improved. Hughes (1982) related that many early breast cancer women demonstrated a philosophical acceptance or an active determination to recover. Westbrook and Viney (1982) studied 126 chronically ill patients including cancer patients and found that they expressed positive and emotional feelings about the situation.

The only other study found in the literature relating to appraisal in the cancer population was one by Oberst, Gass and Ward (1989). They studied the appraisal of stress among cancer family-member caregivers. The tool used assessed the intensity of four possible appraisals of caregiving: harm/loss, threat, challenge or benign. The research showed that appraisal was related to caregivers characteristics and resources. These studies were the only ones found in the literature which researched coping with cancer or treatment modalities.
Cancer and chemotherapy

Chemotherapy has evolved as a major therapeutic modality in the treatment of most cancers and is often the preferred treatment approach for breast cancer (Cawley, 1990; Doig, 1988). Chemotherapy is the systemic treatment involving the administration of chemicals that are toxic to rapidly-dividing cells. Some cancers, if discovered early enough, are considered to be curable with chemotherapy, and the drugs are part of standard treatment regimes. The drugs can be administered before surgery or radiation, or as an adjunct therapy following surgical or radiation treatment (Cawley, 1990; Doig, 1988). The goal is to cure, control or give palliative treatment (Doig, 1988). Drugs are given in combination as different types interfere in different ways and at different times of the cell cycle.

Breast cancer is a complex disease. Adjuvant chemotherapy is a commonly-administered therapy. Doig (1988) maintains that no one particular drug or regimen of drugs has been shown to clearly benefit all women with breast cancer. Combination cytotoxic chemotherapy is given to breast-cancer patients. The most common regimen for pre-menopausal women is Cyclophosphamide, Methotrexate, and 5-Fluorouacil (CMF). Other agents may be added and/or substituted, depending on particular diagnostic features. In general, postmenopausal women are not treated in this
way.

Regrettably, the toxic chemicals given in chemotherapy do not limit their action to cancer cells. As a result of even a successful course of chemotherapy, a variety of adverse side effects have been identified. Dodd (1988), in a study of 48 mixed cancer patients receiving a variety of cytotoxic protocols, found an average of 8 side effects experienced. Nausea and vomiting were experienced by 83% of the sample, loss of hair by 75% and taste and smell changes by 71%. Other researchers (Grant, 1987; Kubricht, 1984; Kushner, 1984; Lewis, Firich and Parsell, 1979; Thomas, 1987) have reported decreased immunity to other diseases, changes in liver enzymes, hair loss, fatigue, loss of appetite, stomatitis, nausea and vomiting, diarrhoea, changes in skin color, anxiety and depression, and decreased levels of activity. In addition to these pharmacological side effects many patients develop conditioned negative responses to their chemotherapy. That is, the sight, smell, and even thoughts associated with chemotherapy can begin to elicit responses such as anxiety, nausea and vomiting (Morrow, 1982; Nesse, Carli, Curtin, and Kilmartin, 1980).

Much research to date has been aimed at reducing the side effects of cytotoxic chemotherapy (Pervan, 1990; Ouwerkerk and Hendrix, 1990). However, even those drugs
which have been found to have some benefit in controlling side effects are reported to cause fatigue, loss of muscle coordination, hallucinations, psychological highs and lows and specific organ toxicity. For some individuals these side effects can outweigh potential benefits. In one study (Dodd, 1982) patients reported an average of 8 side effects to chemotherapy. Most frequently reported were nausea, vomiting, loss of hair, taste and smell changes, numbness, tingling in arms and legs, nervousness, shortness of breath and diarrhoea.

Much behavioral research also has been carried out on the benefits of interventions (medical and otherwise) on side effects of the chemotherapeutic agents. Interventions such as hypnosis (Redd, Andersen, and Minagana, 1982), progressive muscle relaxation training with relaxation imagery (Burnish and Lyles, 1981; Cotanch, 1983), systematic desensitization (Morrow and Morrel, 1982); biofeedback (Burnish, Shartner and Lyles, 1981); stress management and training (Moore and Altmaier, 1981). These studies reported a reduction in side effects but the results were not generalizable.

Overall, an exploration of nursing cancer literature relating to cancer and chemotherapy revealed an emphasis on clinical research and although many authors have attempted to document the concerns of cancer patients, research in
the main has focused on symptom control, side effects of
drugs, and on patient education (Kushner, 1984; Woods,
1978). Studies which researched appraisal to cancer and
chemotherapy were not found in the literature. However, a
small number of studies exist which have documented the
reactions of individuals in mixed cancer treatment
protocols.

Relationship between appraisal and adjustment

One study showed the relationship between initial
appraisal and adjustment as manifested in survival.
Pettingale, Morris, Greer, and Haybittle, (1985) in a five
year longitudinal study of 69 women with early breast
cancer found significant differences in survival at 5 and
10 years when women were compared by their initial response
to cancer. Those who had initially reacted with denial or
a fighting spirit had a more favorable outcome than those
who initially experienced helpless\hopeless responses
(Pettingale, Morris, Greer and Haybittle, 1985).

Summary

Appraisal determines whether the event is perceived as
stressful or benign (Lazarus and Launier, 1978). Frequently events that have an unpredictable outcome are
appraised as stressful (Mishel, 1981). Cancer is
characterized as uncertain (Cassileth, Zupkin, Sutton Smith and March, 1980; Mages and Mendelson, 1979; Wortman and Dunkel-Schetter, 1979). The literature review supports the belief that cancer is stressful.

From the literature pertaining to appraisal it can be seen that patients exhibit a wide range of responses to the diagnosis of cancer. Varied reactions have been found including some evidence that avoidance, distancing, and cognitive distortions in some instances may be adaptive (Lazarus, 1981; Mechanic, 1974). Some responses may be helpful in that they enable the individual to confront the disease. Others may be harmful, promoting undue distress that interferes with coping and adjustment.

Frank-Stromborg (1989) found that two separate and distinct reactions formed the initial reaction to the diagnosis of cancer. These were confronting and distress reactions. Confronting reactions incorporated fighting spirit and stoic acceptance. Distress incorporated denial and hopelessness. These factors were similar to those described by researchers at King's College hospital, London, England, (Pettingale et. al. 1979) which are also reviewed in this section. A conclusion therefore could be that two specific reactions may be seen. Confronting or "fighting spirit" and Distress, as displayed by "anger", "horror", denial may characterize the second. Only one
study (Oberst, Gass and Ward, 1989) assessed the degree of harm\loss, threat or challenge associated with cancer and as suggested by Folkman and Lazarus (1984). The study was with caregivers and not with the individuals experiencing cancer. It showed that appraisal was related to caregiver characteristics and resources. All researchers used interviews as a method of data collection. A criticism of the studies is the questionable validity or invalidated subjective ratings that have been used. Morris et. al. (1985) were the only researchers to describe in detail the method used to analyze the data.

Samples in the studies were diverse. Some studies (Frank-Stromborg, 1984, 1989; Morris, Blake and Buckley, 1985; Kraus, 1991) included males and females. Krause (1991) while including both sexes acknowledged that men reacted differently (calmly and confidently) from the overall sample (horror). Individuals with different types of cancer were included in the samples. Morris et.al. (1985) sampled female breast cancer patients and Pettingale (1985) females with cancers varying from breast, to lymphoma and Hodgkins disease. Further, in some studies participants were at different stages of diagnosis and time since diagnosis varied. In all studies except Morris et. al., (1986), and Pettingale (1985), retrospective recall was used to identify the appraisal of the situation.
Recall may have been colored by time in these studies. All age-groups were represented in the samples. Older adults may have a different outlook by contrast with younger adults. This did not seem to be considered when choosing samples.

Method of participant recruitment was different for each of the studies. For Krause (1991) the media requested participation. The King’s College studies (Morris et al., 1985; Greer et al., 1979; Greer and Silverfarb, 1982) recruited individuals from major London city hospitals. Frank-Stromberg (1984, 1989) recruited from out-patient departments and self-help groups. How these differences might interfere with results is unknown. Despite the ubiquitousness of cancer and the nature of chemotherapy treatments, it appears that there is a dearth of well-controlled empirical studies relevant to the topic of appraisal and coping in cancer patients receiving cytotoxic chemotherapy.

Stressful appraisal may lead to poor coping as the outcome is unclear and there is difficulty in assigning meaning to any visible cues (Lazarus and Launier, 1978). One study was found which explored the relationship between appraisal and survival (Pettingale et al, 1979). This suggested that denial as an initial reaction to cancer may be protective and promote survival. From the literature
review it is apparent that further studies are necessary with specific populations. This present study examines appraisal among individuals newly-diagnosed with breast cancer. Appraisal is defined as the meaning of the specific situation of cancer and cytotoxic chemotherapy to the individual. It is measured objectively by a question to which individuals respond in terms of harm/loss, threat or challenge.

Coping:
Research on coping strategies

This section of the literature review pertains to studies which have examined coping strategies used by cancer patients. It differs from the previous section in that appraisal is defined as the primary reaction to the diagnosis, whereas coping is defined as the cognitive and emotive reactions elicited after appraisal has taken place. The studies reviewed are those in which cognitive and emotive coping was demonstrated in cancer populations.

Lazarus (1981) proposed that the particular types of coping behavior (problem-focused or emotion-focused) which people use are determined by the nature of the stress that they are contending. In a number of studies Folkman and Lazarus (1984) and Pearlin and Schooler, (1978) found that health related-stressors, particularly those appraised as
requiring acceptance prompted emotion focused coping. While valuable research has been performed on coping in recent years, much of it by Lazarus and his colleagues (Lazarus and Launier, 1978; Cohen and Lazarus, 1973; Folkman and Lazarus, 1980, 1988), relatively little empirical research has focused on the coping strategies employed by cancer patients.

Much research has been built on the fundamental notion that the two modes of problem-focused and emotion-focused are expressed in coping. The first major reported study of coping strategies in cancer patients comes from the work of Weisman and his associates (Weisman, 1976, Worden and Sobel, 1978; Worden and Weisman, 1977). Through interviews they studied the coping strategies of 120 patients with newly-diagnosed cancer. Results indicated that those who coped well used the strategy of confrontation, redefinition of the problem and compliance with authority. These were resourceful and tended to avoid denial, taking action based on confronting reality instead. They also considered alternatives for their problems, maintained hope and open communication. Those who coped poorly were found to use suppression, passivity, submission, drinking or drugs. This early work lacked theoretical underpinnings. Fifteen coping strategies were listed and individuals were asked which represented their feelings. The listed strategies
represented many concepts which were not theoretical or operational defined.

There is general agreement in the literature that individuals with cancer elicit problem-focused functioning in an effort to alleviate the situation (Friedman, 1980; Gotay, 1984; Janis, 1985; Hopkins, 1986; Lindemann, 1944; Monet and Lazarus, 1977; Weisman, and Worden, 1977; Weisman, Worden and Sobel, 1980). In problem-focused coping the individual tries to find meaning in the event by defining the problem, generating alternatives, choosing among them and finally performing some action, specifically with the situation. The perception of being in control of stimuli or that one has the ability to do something to influence the situation is likely to facilitate coping activities (Michelbaum and Turk, 1978; Leventhal and Johnson, 1983). The strategies involved are information seeking, talking to others and trying to think through the problem (Lazarus and Folkman, 1984).

Researchers have shown that individuals do seek information. Hopkins (1986) investigated the coping strategy of information-seeking in 38 cancer patients receiving chemotherapy for cancer. Breast cancer patients who had either primary or recurrent cancer comprised the sample. Forty five percent of the sample had advanced disease, defined as the presence of distant metastasis.
The sample was recruited from eight oncology practices and were on chemotherapy for an average of seven months. Half had chemotherapy prior to this treatment. Eighty four percent of the sample was white, the remainder black. An Information Preference Questionnaire (IPQ) was developed for the study and was administered in the oncologist’s office. Subjects were asked to rate, on a five point scale statements that described preferences for treatment information. Results showed that the majority of subjects were fairly vigilant in their information-seeking-coping approach. The information was received from the oncologist or nurse in the office, newspaper and magazine articles, books, and cancer organizations. The study showed that the coping strategy of information seeking was used by the individuals tested. Information seeking was operationally defined and the development of the questionnaire used was well described. However the instrument was in its initial stage of development which may have affected the results. Further, the sample was small and varied in age, ethnic grouping, stage of disease, and treatment.

A recent review of the American "I Can Cope" program (Diekmann, 1988) found that participants had a different attitude to information. These programs have the objective of helping cancer patients, through sharing information with other people who are in the same situation. The
purpose is to help patients with cancer to cope with their disease (Diekmann, 1988). The researchers asked why attrition or erratic attendance was a feature at programs. One hundred and twenty four participants were mailed a questionnaire. In this, they were asked to evaluate the program and to give reasons for registration but nonattendance. Seventy four individuals responded. These included 16 males and 58 females. The mean age was 50 years with a range from 17 to 75. Two of the sample were black. Cancer was varied in relation to site. Reasons given for not continuing to attend the program were varied and included fear of hearing more about the disease and not wanting to receive any more information. The research is important in that it shows that information overload can occur which seemed to be non-beneficial. However, the results may not be generalizable as the sample was not representative of males and minorities, and comprised patients with different cancers and at varying stages of the disease process.

Gotay (1984), in a Canadian study, used semi-structured interviews to study the coping strategies used in 73 individuals with early (shortly after diagnosis) and late stage gynaecological and breast cancer (Stage III or IV). Subjects were recruited from the Southern Alberta Cancer Center over a 6 month period. Interviews took place
within two weeks of the diagnosis of cancer in the early cancer patient group. For the advanced stage cancer group the semi-structured interviews took place within one year and 10 years of diagnosis. Data collected included descriptive information, reactions to the diagnosis, coping processes used and adjustment to the illness. The data were classified under categories drawn from the earlier work of Weisman et. al. (1976). The coping strategy seen most often for both early and late stage cancer individuals was taking firm action. Information seeking, talking to oneself (be positive, tell myself that everything will be all right), finding something favorable about the situation and talking to others were commonly used strategies among the early stage group. Talking to others, religious faith, avoiding and denying were most often cited as methods of coping by the advanced-cancer group.

From this research it can be seen that taking firm action emerged as the most often used coping strategy. More problem-focused coping was displayed in the newly-diagnosed group (information seeking) while emotive-focused coping (pray, have faith, deny) was seen in the advanced-stage cancer group. The conclusions were based on interviews and so are affected by social desirability, and self preservation. However, the method employed for data collection was explained well in the research and well-
trained researchers performed the data collection. The data were collected at one point in time and it was not possible to compare changes that occur over time. Disease site and stage, age and time since diagnosis varied considerably. These may have caused differences in the findings. When the sample was broken into two groups the sample size was small. A larger sample matched on age, or a longitudinal study, studying change over time, might increase understanding on the role of coping in cancer patients.

Ali and Khalid (1991) studied the coping strategies in 64 female Egyptian post-mastectomy patients. Patients were receiving either chemotherapy or radiotherapy and the disease was in an advanced stage. Age range was 36 to 63 years of age with the range of time since mastectomy 3 to 12 months. Assessment of coping strategies was by interview and by one open-ended question which sought information on the ways the individual used to deal with the illness. Responses were recorded and categorized. Data was collected at a large university hospital in Cairo and from two private oncologist offices. Results showed that almost every patient expressed faith as a first-coping strategy. These were expressed in statements such as "I submit to God and he gives me strength", "I believe that God is capable of cure", "I thank God I am still alive"
(p.237). Compliance with the medical regimen, seeking information, seeking social support and self distraction were other coping strategies cited. The small sample size and the reliability of the interview may have affected the results. In this study, religious beliefs were the most often used coping strategy. This was followed by compliance with medical care. The researchers explained the findings by stating that "Egyptians believe that God afflicts people with serious disease and also cures them" p.237. Cultural factors may therefore have accounted for these findings. However, the strategy of using faith was also found in an American sample by Mishel (1988). In this study, cancer patients used emotion-focused strategies such as faith or disengagement when they believed that nothing could be done to decrease their uncertainties about their illness.

The Jalowiec coping scale (Jalowiec, Murphy and Powers, 1984) has been used to study coping by a number of researchers. Perry (1990) used the scale to determine predominant coping methods used by cancer patients. Forty one (21 female, 20 male) adult cancer patients diagnosed in the previous 100 days comprised the sample. Participants had mixed cancers and an age range from 29 to 80 with a mean of 59 years. All were receiving chemotherapy or radiotherapy on an outpatient basis or were recovering from
cancer at home. All individuals contacted through a treatment center agreed to participate.

The Jalowiec Coping Scale was administered in the home or in the outpatients setting. Confrontive-type coping (thinking, maintaining control, looking at the problems objectively, seeking more information, and attempting to find meaning and purpose) was the commonest form of coping used. Palliative-focused coping (using hope, praying, withdrawing, taking drugs) was preferred as a second choice. The emotive strategies of crying, blaming others, and using anger were the least often used forms of coping. These results differed from a study by the same author (Perry, 1989) with caregivers of cancer patients in which the caregiver group (N=28) also favored confrontation the most, but preferred emotive-coping mechanisms second and lastly used palliative coping.

The study is an important one in that it identified confronting the problem as the most common-used coping strategy. All patients were within 100 days of diagnosis and therefore could be said to be adapting to the diagnosis. The small sample size could have affected the results. While a standardized well-tested instrument was used, it was interviewer rather than self-completed. How this could have biased the results is unknown.
Hertz (1989) investigated coping in 120 cancer patients (53 males, 67 females) undergoing cytotoxic chemotherapy in hospitals (N=40), at home (N=40) and in out-patient facilities (N=40). In each group 20 patients had local cancer and 20 had metastasis. A variety of cancer diagnosis were represented. The mean time since diagnosis was 27 months. The age range was from 21 to 85 years. The Jalowiec Coping scale was used to measure coping. Results showed that individuals in the inpatient hospital and outpatient setting had higher mean levels of coping than individuals being treated at home. The study results may have been affected by the following factors. The sample was representative of males and females with mixed cancer diagnosis. It is generally said and understood that males and females react differently in a stress situation. Results for male and females were not presented. As the study design was with patients undergoing active treatment the attitude of professional staff may have affected the results. The result that patients being treated in the hospital setting was more hopeful than those being treated at home was not related to stage of the disease or age. These two factors may have explained the differences.

One English study (Payne, 1990) investigated the coping strategies used by 24 women with advanced breast or ovarian cancer. All women were receiving palliative
chemotherapy. Equal numbers were receiving the treatment at home and in hospital. Semi-structured, tape-recorded interviews were used to collect data. Time since diagnosis was 1 to 2 years and mean age was 59 years. Results showed that the women used a complex range of coping strategies, varying from active problem-solving techniques such as seeking information to strategies for reducing threat, such as minimization and selective attention. However, minimization and selective attention were the strategies predominantly favored by the sample. There were no differences reported for those receiving treatment at home versus those receiving treatment in hospital. The research had many drawbacks. The small sample size may mean that the results are not generalizable. Details on the method of interview used were not given and the results may have been influenced by interviewer bias.

In a study of the responses of 20 post-mastectomy women to the discovery of a breast lump, Lierman (1988) used the Lazarus and Folkman (1984) theoretical framework. The sample had been referred to the American Cancer Society's "Reach to Recovery" program. Data were collected by interview one month post mastectomy by interview and individuals were categorized as "early help seekers" (N=10), "wait and see" (N=2), "ignoring symptoms" (N=3), and "preparing for death" (N=1). Lierman categorized the
coping responses as emotion-focused and problem-focused. Both were found to be displayed equally within the 50 to 75 year old respondents. In addition, a significant relationship was found between older age and extended delay in seeking medical aid. While the researchers did not speculate on the reasons for this delay, it may have been related to the health beliefs that these individuals held on to their fear of treatment.

Summary

Cancer generally has been shown to be a stressful experience for individuals because of the uncertainty of diagnosis, treatment effects and prognosis. However, little empirical work has been reported on the coping mechanisms used to deal with cancer and/or treatment modalities. Many of the reviewed studies lack theoretical definition and reliable and valid instrumentation.

Only two studies (Perry, 1990; Hertz, 1989) explained the theoretical framework on which the research was based. Approaches to measuring coping in cancer patients have differed. In most studies coping was measured by interview (Ali and Kalid, 1991; Gotay, 1984; Lierman, 1988; Payne, 1990). Perry (1990) and Hertz (1989) used the Jalowiec Coping scale. This is a well developed and tested coping scale which has been used in other studies of populations
with chronic diseases. Hopkins (1986) used a newly developed Information Preference Questionnaire. No data on the reliability or validity of this latter scale was available. In the studies using the interview method only one researcher (Morris, Blake and Buckley, 1985) described the process of coding and interrater reliability precautions taken.

The samples for the studies varied from small (N=20 for Lierman, 1988) to large (N=120, Hertz, 1989). Types of cancers represented differed. Weisman et al (1978, 1979); Diekmann (1988); Perry (1990), and Hertz (1989) used mixed cancer participants. Female breast cancer patients were studied by Hopkins (1986), and by Ali and Kalid (1991). Gotay's (1984) sample comprised early and late breast and gynaecological cancers and Payne (1990) studied advanced breast and ovarian cancer patients. Time since diagnosis differed significantly from study to study. Perry (1990) studied individuals within the first 100 days, Ali and Kalid (1991) within the first 3 to 12 months, and Lierman (1988) in the first month post breast biopsy. For Payne (1990), and Hertz (1989) the sample had been diagnosed between one and two years. Other researchers (Diekmann, 1988, Hopkins, 1986) did not specify exactly the time since diagnosis. For Gotay (1984) the early cancer group was interviewed within two weeks of diagnosis but the late
cancer group within 1 to 10 years of diagnosis.

The process of coping and the effectiveness of various means of coping used by cancer patients have been shown to vary. Information seeking (problem-focused coping) was the primary method investigated and found to be used by Hopkins (1986), and Krouse (1991) while Diekman (1988) showed that fear of hearing about the disease and not wanting any more information promoted coping in a sample of individuals who choose to withdraw from an "I Can Cope" program. Gotay (1984) showed that there were different coping strategies used by early and late breast and gynaecological cancer patients. Recently-diagnosed individuals sought more information (problem-focused), and took firm action where individuals who had been diagnosed for a longer period of time used more prayer denial, and hope (emotion-focused). Ali and Kalid (1991) found that coping was expressed by faith, compliance and information seeking in Egyptian women. The results for Hertz (1989), Perry (1990), and Lierman (1988) also showed emotion and problem-focused coping strategies. There is difficulty in comparing the results as only two researchers, Perry (1990) and Hertz (1989), used a reliable and valid scale (the Jalowiec Coping scale).

From the research, it is clear that coping is expressed in emotive and cognitive modes. However, it is
also apparent that the coping responses used by well-defined groups of patients require further research. The theoretical framework within which any research is to be placed needs definition. The sample needs to be as homogenous as possible in terms of age, sex, ethnic grouping, time since diagnosis and treatment protocols. Valid and reliable instruments need to be used. The present study investigates coping within the Lazarus and Folkman (1984) model of stress and coping. The sample includes female breast cancer patients attending outpatient or day care facilities for cytotoxic chemotherapy. The Ways of Coping Checklist, demonstrated to be a valid and reliable instrument from previous studies, is used to measure coping in female subjects with breast cancer who volunteer to participate in this study.

Adjustment: Outcome of coping

Patients undergoing cancer treatments encounter many changes in social and vocational roles, lifestyles, threats to self-esteem or self-image, disruption in normal daily activities and decreasing physical, psychological and possibly social resources. Over the years medical and nursing research relating to adjustment to cancer or its treatment has been focused mainly on physiological symptom and little attention has been given to the effects on
psychological or psychosocial functioning. This is not surprising given that health care has evolved around a disease-centered medical and cure model.

A number of investigators have researched health status as a measure of the outcome of treatment and/or disease. These assessments have been made, using such scales as the Karnofsky Performance Status (Grieco and Long, 1984; Hutchinson, Boyd and Prinstein, 1979; Mor, Laliberte, Morris, and Weinman, 1984; Yates, Chalmert and McKeegney, 1980) or by self-report scales which have been developed and which focus on various aspects of quality of life (Cella, 1987; Llewellyn, Sutherland, Hogg, 1984; McCorkle and Young, 1978; Padilla, Presant, Grant, Metter, Lispens and Heids 1983; Priestman and Baum, 1976; Selby, Chapman, Etazadi-Amoli, Dalley and Boyd 1984). The adjustment of mastectomy patients to the effects of breast cancer has been the subject of much and varied research over the years (Baider and Kaplan-DeNour, 1984; Hughes, 1982; Grandstaff, 1976; Jamison, Wellisch and Pasnau, 1978; Lichtman, 1982; Maguire et al, 1980; Stolar, 1982; Wellisch, Jamison, and Pasnau, 1978). Of particular interest to this researcher is psychosocial adjustment to cancer and treatment protocols. The literature reviewed relates to studies which consider adjustment from this perspective.
Psychological consequences of cancer

Research shows that cancer can have psychological consequences for patients and their families (Wellisch, Jamison, Pasnau, 1978; Maguire, 1981; Northouse and Swain, 1987; Baider, Kaplan-DeNour, 1984). The reactions of distress may continue for a period of time (Maguire, 1981; Northouse and Swain, 1987; Northouse, 1989) and husbands can be as affected as patients (Northouse and Swain, 1988). In the 1970’s in three studies researchers reported the psychological reactions of individuals to breast cancer. Grandstaff (1976) reported that mastectomy patients were emotionally affected and that there were immediate stress points following mastectomy that needed to be overcome. The data on which these conclusions were made were based on counselling interviews with 35 women. The sample varied in age, stage of cancer and data analysis was based on interview notes. However, the study provided important information in the 1970’s on the process of adjusting to a mastectomy.

Jamison et. al. (1978) found that, even though most of the 41 mastectomy patients in the sample adjusted well 22 months post surgery, one fourth of the women reported increased thoughts of suicide and increased tranquillizer use after surgery. This analysis was based on interviews and patients with different stages of cancer were
represented in the sample. Lehmann et al (1978) studied 805 male and female mixed-site cancer patients, ranging from children to adults. They found that psychological problems were the most frequent type of concern mentioned during structured questionnaire.

In these early studies the theoretical background, samples and methods employed to investigate constructs were poorly described. However, all researchers maintained that psychological disruption took place as a result of cancer.

Medical advances have resulted in longevity and chronicity. The enhanced demands made on individuals and the social supports necessary to promote effective coping emphasize the importance of psychological adjustment. This has led to the topic of psychosocial adjustment to illness receiving considerable attention in the literature (Weissman, 1975; Weissman and Bothwell, 1976; Weissman and Sholomskas, 1981). It is only in the last decade that attention has turned to conceptualization of a good psychosocial adjustment. For Derogates (1986) psychosocial adjustment is conceived as multidimensional. The outcome consists of feelings and symptoms of positive mental health as well as the quality of one's reaction to persons, institutions, and other aspects of one's environment (Bloom, 1982). A number of studies which have used instruments developed by Derogates (1986) and his
colleagues are reviewed. Other studies which have operationalized adjustment as Mood also are described.

A number of studies used the standardized instrument of Psychosocial Adjustment to Illness Scale (PAIS) to measure psychosocial adjustment in breast cancer patients (Derogates, 1982, 1986). Using the PAIS, Baider and Kaplan-DeNour (1984) found that the 20 husbands and wives in their study had similar adjustment scores and that patients with high levels of distress had husbands with high levels of distress. Patients with lower level had husbands who reported less distress. However, the results may have been limited by the small sample size and differences in treatment protocols.

Northouse and Swain (1987) viewed psychosocial adjustment as multidimensional consisting of a positive balance of mood states, an absence of extreme psychiatric distress, and the ability to function in work, family and social roles. Fifty newly diagnosed cancer breast cancer patients and their husbands comprised the sample. Individuals with confirmed breast cancer were recruited to the study by the researcher 3 days post-operative mastectomy. All of the sample were seen again in their homes 30 days post operative. Subjects with metastatic disease were excluded from the sample. The subjects were drawn from 4 hospitals. Mean age was 50 years and all
subjects were white and married. Thirty two percent of the sample were receiving chemotherapy, 8% radiotherapy while the remainder had been treated by surgery alone.

The instruments used to measure adjustment were the Effects Balance Scale to measure mood (Derogates, 1975), the Brief Symptom Inventory to measure psychological distress (Derogates, 1975) and the Psychological Adjustment to Illness Scale (PAIS) to measure psychological adjustment (Derogates, 1975). Both were completed on two occasions, on the first occasion 3 days post surgery and on the second occasion after 30 days.

Results showed that patients mood scores differed significantly from the mean scores reported for the normal population (at 3 and 30 days post operatively). In addition, the level of distress was significantly higher than the mean distress level reported for the normal population. Patients reported role adjustment problems in vocational environment (missing time from work), domestic environment (difficulty with arm movement and household tasks) and social environment (increased fatigue leading to reduction in social activities). Husbands were also given the PAIS to complete. Scores for these were found to be significantly better than their wives showing less psychosocial adjustment problems with the cancer situation. Of interest to this researcher is that adjustment scores
did not differ for those of the sample receiving adjuvant chemotherapy. Northouse and Swain (1985) did say that the women had only been receiving chemotherapy for a brief period (not defined) of time and as such were not experiencing the cumulative effects of the drugs. Younger women tended to report more distress than older women and no significant differences were found between adjustment scores on the PAIS and type of surgery, number of breasts removed, extent of disease or treatment being given.

The researchers did not explain the sample adequately. It was stated that all individuals completed the PAIS within 3 days of mastectomy but the length of time since diagnosis was not given. This was important as the PAIS scales disrupted may have been due to length of time since diagnosis or to treatments given prior to surgery. While the researchers explained that 32% of the sample were receiving chemotherapy and 8% radiotherapy it was not explained whether these were being given prior to or after surgery. The sample was recruited by staff on the wards. Twenty three patients did not choose to participate. How these differed from those who choose to be recruited is unknown. Northouse and Swain's (1987) finding that cancer and its treatment results in reduced abilities to perform household tasks has also been confirmed by the work of Tordes, and Wojtiuk (1979), and by Silverfarb, Maurer, and
Crouthamel (1980). Research by Meyerowitz et. al. (1979) also supports the work of Northouse and Swain (1987). In this 50 women who were undergoing adjuvant chemotherapy, following surgery for Stage 11 breast cancer, were interviewed. Results showed that the women were particularly affected in the areas of home, work and social activities, finances and family life.

In a follow up study (Northouse, 1990) to the Northouse and Swain (1987) research, data on the variables of mood, psychosocial adjustment and effect were collected 18 months post operative mastectomy. The purpose of the study was to assess patients and husbands ongoing psychosocial adjustment to breast cancer and to compare adjustment at 18 months with level of adjustment at 3 and 30 days post surgery. Five of the original couples chose not to participate in the study. A further two participants had died and two had divorced. Complete data for the third analysis was for 41 patients and husbands. The only difference reported for the couples who chose not to participate was in distress scores. Patients who participated in the second study had significantly lower distress scores on the second time of testing (30 days post surgery) than those who chose not to participate at 18 months. Results at the 18 month testing showed that levels of mood and levels of psychosocial functioning improved
over time. However, subjects level of distress did not improve over time. Distress levels reported at 18 months was similar to that reported at 3 and 30 days post surgery. No significant relationships were found between demographic factors and patients scores on the three adjustment measures. Northhouse (1990) suggests that the findings show that differences in adjustment may not be just confined to the initial stage of illness but may persist over time.

In the study a comparison group was not used. The distress score differences may have been related to other factors in the lives of the individuals and not directly associated with the cancer and mastectomy. The limitation of not having the scales completed pre surgery to measure status of distress, mood and psychosocial adjustment prior to the study was a limitation referred to by Northhouse (1990). The instruments are well described and the theoretical construct of psychosocial adjustment explained. Three instruments were used to measure the construct, reliabilities were reported and reference made to prior research using these tools. In relation to the five couples who declined to participate in the follow up at 18 months little detail was given to describe how these were different from those who choose to participate.

A Canadian study (Sutherland, Walker and Till, 1988) reported different findings regarding mood to those of
Northouse and Swain (1987). They determined emotional status (Mood) of 60 cancer patients in Canadian clinical ambulatory care settings. A set of 6 linear analogue, self assessment scales were derived from the Profile of Mood instrument (POMS) and used. The six scales were designed to measure each of the six POMS factors: anxiety, depression, anger, fatigue, confusion and vigour. The visual analogues were developed to provide a quick and easy method of assessing mood in an outpatient facility that could identify cancer patient's emotional distress. Patients were within the first 3 months of initial diagnosis and within the first three days of admission to the outpatient facility. Patients were female (N=36) and males (N=24) with a mean age of 55 years and a range from 20 to 74 years.

Results showed similarity between the visual analogue scales and the Profile of Mood Scores and all scores were skewed positively i.e mood scores were high. Testing of the developed instrument was described and data on validity and reliability supplied. It seemed surprising that Mood in the first 100 days was skewed positively for all cancer patients. The administration was done by staff who knew the patients and the instruments were completed during the first three visits. Perhaps bias was introduced in terms of social desirability which might have influenced the
Krouse and Krouse (1982) studied depression in breast and gynaecological cancer and breast biopsy patients. Depression was measured with the Beck Depression Inventory which was administered prior to surgery and at one and two months interval in order to determine whether crisis had been resolved within six months. Additionally, the instrument was completed again at 20 months to evaluate long-term effects. The results showed that the emotional reaction to cancer and mastectomy resolved within a period of two months or less. At 20 months the level of depression was significantly less than it was prior to surgery. While the results show that resolution of reaction is possible within a short time the results should be treated cautiously. The sample of nine individuals was small and repeated measuring by the depression inventory may have affected the results.

A longitudinal study by Wolberg, Romsaas, Tanner, Malec (1989) contrasted three groups of women with breast disease. The sample comprised of individuals with benign breast tumours (N=72), breast cancer treated by mastectomy (N=78), and breast cancer treated by conservation of the breast (N=41). The PAIS was completed on three occasions by each individual, firstly, at the time of first consultation with the doctor, secondly after completion of
all chemotherapy and radiotherapy (approx 8 months post surgery) and at four months for all others. The final testing was 16 months after surgery. Results showed that the PAIS successfully discriminated the benign sample from the two cohorts with cancer both at first testing and for up to 16 months post surgery. Greater disturbances were noted throughout in Vocational Environment, Domestic Environment, Sexual Relationships, Social Environment, and Psychological Distress. Overall, this study showed that emotional, social and vocational adjustment associated with a breast disease persists for at least 16 months.

The PAIS questionnaire was mailed to the individuals and it is not known whether those who replied could be different from those who choose not to reply. The initial PAIS testing was done after the patient had seen the physician and discussed treatment. Whether this had an effect on the PAIS is unknown. This study differs from others who report less psychological disturbances but comparison is difficult as the study designs differed.

One important aspect of psychosocial adjustment may be in the realm of sexuality and sexual functioning. Few researchers have addressed the topic and even though the PAIS Scale contains a subscale in this domain relatively little is known about how cancer interferes with sexual functioning. A study by Lichtman (1982) assessed
mastectomy patients (n=78), husbands (n=46) and significant others (n=16) marital relationships. Using multiple adjustment measures the researcher found that the quality of marital relationship remained the same after mastectomy and when strains occurred they were due to different points of view between husband and wife on the best way to cope with the disease.

Summary

Clinical and anecdotal research have attested to the importance of emotional distress as a consequence of the diagnosis of cancer. Studies on adjustment to cancer have been focused on the patient with some studies focusing on both patients and spouses (Baider and Kaplan-DeNour, 1984; Northouse and Swain, 1987; Northouse, 1990). Some longitudinal studies also exist (Northouse, 1990; Worberg et al 1989) which attempt to examine change over time.

It appears that conceptualization of psychosocial adjustment differs for researchers and that many different ways of measuring adaptation have been attempted. The early researchers Grandstaff, 1976; Jamison et.al., 1978; Liermann et.al. (1978) did not report explicit theoretical frameworks and investigated the concept through interview.

Some researchers have measured adjustment from a single perspective such as Mood (Sutherland et al, 1985),
or depression (Krouse and Krouse, 1982). Other researchers, while being theoretically clear that adjustment is a multidimensional construct, go on to measure the concept with many instruments. For example, Northouse (1990) and Northouse and Swain (1987) measured it with the Affects Balance Scale (subject's mood state), the Brief Symptom inventory (psychological distress) and the PAIS (seven aspects of adjustment) while Baider et. al. (1984) used just the PAIS.

There have been conflicting reports on the nature and length of adjustment to breast cancer. Krouse and Krouse (1982) interviewed a small sample of mastectomy patients and found that subjects' emotional reactions to mastectomy were self-limiting and that they were generally resolved within two months. Sutherland et. al. (1985) found that Mood scores on both the Profile of Mood State instrument and a visual analogue were skewed positively. However, Jamison et. al. (1978) found that a quarter of the sample of 41 women 22 months post surgery reported thoughts of suicide and used tranquillizer. For Northouse (1990) level of Mood and Psychosocial Adjustment improved over time but level of distress remained the same.

A difficulty in comparing results arises in relation to study designs. The sample numbers varied from N=9 in the study of Krouse and Krouse (1982), N=20 in Baider and
Kaplan's study (1984), N=41 in the Northouse study (1990) and N=805 for Lehmann et.al. (1978). Some studies included individuals being given adjuvant treatments (Northouse and Swain, 1987; Sutherland et. al. 1985) and some studies had males and females included (Lehmann et.al, 1978; Baider and Kaplan-De Nour, 1984, Krouse and Krouse, 1982). How these factors may have affected results is unknown. From the literature review it appears that adjustment has been investigated from a number of perspectives and that there is a lack of studies in which reliable and valid instruments have been used. Research on adjustment with cancer patients using reliable and valid instrumentation has begun (Baider and Kaplan-DeNour, 1984; Northouse and Swain, 1987; Northouse, 1990; Worberg, 1989). Baider and Kaplan-DeNour (1984) and Northouse and Swain (1987) have longitudinally studied adjustment in husbands and wives. Worberg (1989) has compared three groups on PAIS scores. There was no study found in the literature in which investigators studied adjustment in a newly diagnosed sample of breast cancer being treated by cytotoxic chemotherapy in outpatient facilities while living at home.

From the review it appears that further studies that clarify psychosocial adaptation using an adequate definition, sample size and standardized instrument are necessary. In this present study the researcher defines
adaptation in terms of psychosocial adjustment and measures it with the multidimensional Psychosocial Adjustment to Illness Scale. The sample is newly diagnosed female breast cancer individuals receiving cytotoxic chemotherapy in outpatient facilities.

**Relationship between coping and adjustment**

Empirically, both problem-focused and emotion-focused coping have been found to affect adaptational outcomes, such as perceived health status and symptom severity (Folkman and Lazarus, 1985, Pearlin and Schooler, 1987). Problem-focused coping had a positive relationship to health outcomes and emotion-focused coping was related to poor health outcomes (Folkman and Lazarus, 1985, Mechanic, 1980; Folkman, Lazarus, Dunkel-Schetter, De Longis and Gruen (1986), Folkman, Lazarus, Gruen and De Longis, 1986).

Research by Pettingale, Philalithis, Tee, and Greer, (1981) over a ten year period on the association between four different types of psychologic responses to the diagnosis of breast cancer and length of survival suggested that particular psychologic responses may be associated with longer survival. Results showed significant differences in survival at 5 and 10 years when women were compared by their initial response to cancer. Those who had initially reacted with denial or a fighting spirit had
a more favorable outcome than those who initially experienced helpless/hopeless response (Pettingale, Morris, Greer and Haybittle, 1985).

Hopkins (1986), in a study of 58 cancer patients receiving chemotherapy for breast cancer, has shown the relationship between the coping strategy of information-seeking and adjustment as measured by Mood. The researcher contended that the Lazarus theory of stress and coping was not helpful in predicting adaptation outcomes in the study. Patients with breast cancer who had either primary or recurrent cancer comprised the sample. Forty five percent of the sample had advanced disease defined as the presence of distant metastasis. The sample was recruited from eight oncology practices and were on chemotherapy for an average of seven months. Half of the sample had prior chemotherapy treatment. Eighty six percent of the subjects were white.

Mood was selected as the adjustment to chemotherapy concept to be measured. An Information Preference Questionnaire (IPQ) and the Profile of Mood Questionnaire (POMS) were administered. These were given at a scheduled meeting with the researcher. Subjects were asked to rate on a five-point scale statements that described preferences for treatment information and to complete the Profile of Mood Scale. Results showed that the majority of subjects were fairly vigilant in their coping approach. The
information was received from the oncologist or nurse in the office, newspaper and magazine articles, books, and cancer organizations.

The study showed that the coping strategy of information seeking was used by the individuals tested. Information seeking was operationally defined and the development of the questionnaire used described. In the study it was hoped that information seeking could be used to demonstrate that an optimal level of information seeking existed and facilitated adaptation to cancer treatment. Results failed to establish a relationship between the scores on information seeking and Mood. Possible reasons for these results were given by the researcher. These included: subjects with extreme scores could have skewed the group mean; the Information Preference Questionnaire did not measure what it set out to measure (no reliability or validity data were given); and no relationship exists between information seeking and Mood. It seems strange that skewed data was not treated before analysis. It is possible that the information seeking instrument was deficient and did not measure what it purported to measure. No data on reliability or validity for the instrument were given. Further, the fact that the sample was small and varied in many characteristics may have affected the results.
Studies with populations other than cancer patients

Due to the lack of studies which reported on the relationship between coping and adjustment in cancer patients it was decided to review a few studies pertaining to individuals with other chronic diseases. McCarthy-Neundorfer (1991) investigated the relationship between different types of coping strategies and physical health, depression and anxiety amongst 60 spouse caregivers of persons with dementia. The sample was accessed through a register of Alzheimers patients in a US midwest hospital center. Sixty three percent were wives and 22% husbands. Ninety two percent were white and the remainder black. The mean care-giver age was 72 years. Coping was measures by the ways of Coping Checklist, physical health by the Physical Health sections of OARS, and Depression and Anxiety by the Brief Symptom Inventory. Interviews based on the instruments were conducted either at home or in a locations of choice. Results showed that wishing-emotive-coping (confrontive coping; angry confronting of the patient and the situation and letting ones feelings out); accepting responsibility (blaming and criticizing oneself for problems) and escape avoidance (wishing the situation would go away) were the coping subscales most strongly predictive of depression and anxiety.

Overall, the study showed the coping factors
associated with depression and anxiety. However, symptoms of depression were reported for only 25% of the sample and anxiety for 15%. Further, the wishful-emotive-coping strategy was the least used of the coping strategies used. It could be said that the sample were not overtly depressed or anxious. This raises the issue of whether the negative effects of caregiving have been exaggerated in the literature.

In a study on stress and perceived health status of adolescent girls De Maio-Esteves (1990) predicted that problem-focused coping would have a positive direct effect on perceived health status and emotion-focused coping would have a negative direct effect on perceived health status. Three hundred students were approached and 159 choose to participate in the study. Eighty six percent were white with Blacks, Hispanics and Asians comprising the remainder of the sample. All were in 9th, 10th or 11th grade at school. Instruments used were the General Health Rating Index to measure perceived health status and the Ways of Coping Checklist to measure coping. Results showed that problem-focused coping had a direct effect on perceived health status but emotion-focused coping did not have a direct effect. The higher the stress perceived the higher emotion-focused coping. This is consistent with the work of Lazarus and Folkman (1984) who suggest that when the
level of stress increases greatly the individuals ability to perform cognitive problem-focused coping diminishes. Thus, the individual’s reliance on emotion-focused coping was increased.

Summary

It appears that little research exists in cancer populations explaining the relationship between coping and adjustment. That which exists and the studies with other populations seem to suggest that individuals use both emotion-focused and problem-focused strategies with varying effects. The relationship between coping and adjustment proposed by Lazarus and Folkman is that the more the individual has at stake the more interference there will be in psychosocial adjustment. Based on this it would seem likely that those who react with emotion-focused coping to the threat of cancer will have lower psychosocial adjustment. Conversely, those individuals who cope with problem-focused strategies could be hypothesized to have better adjustment. These hypothesis are tested in this research. However, as Irish women with breast cancer have not previously been examined it was decided that the study would investigate the relationships between coping methods employed and adjustment in seven domains of everyday life.
Social support

One of the antecedents theorized to affect coping is social support (Lazarus and Folkman, 1984). Social support is a multidimensional concept (Barrera, 1986; House, 1981; House and Kahn, 1985). It consists of quantity of relationships, structure of social relationships and the functional content of relationships (House and Khan, 1985). Social support can also be defined in terms of types of support for example emotional, tangible, or informational (Cohen and Willis, 1984). In a specific sense, social support is most commonly used to mean the functional content of relationships.

Definitions of the concept abound. Caplan, Robinson, French, Caldwell and Shinn, (1976) defined it in terms of any input directly given by one individual to another which moves the receiver towards a goal, while Cobb (1976), defined social support as information given to the person who then believes that he is cured or loved, esteemed and valued and part of a network of communication and mutual obligation. In 1978 (Gottlieb) using induction based on content of interviews with 40 individuals identified four categories of helping behavior which he called social support. These were: emotionally sustaining behaviors, problem solving behaviors, indirect personal influences, and environment advocacy. Barrera and Ainlay (1983),
having reviewed the literature on social support, deduced that social support consisted of six supportive behaviors of material aid, behavioral assistance, intimate interaction, guidance, feedback, positive social interaction. Following factor analysis of a scale they developed these and renamed them as tangible assistance, directive guidance, intimate and social interactions.

Kahn (1979) defined social support as interpersonal transactions that include one or more of the following: the expression of positive affect (feeling liked or loved) of one person towards another; the affirmation (feeling respected or admired) or endorsement of another persons behaviors, perceptions or expressed views; the giving of material or symbolic aid to another. The supportive transactions proposed by Norbeck (1981) and based on this theory are: affect, affirmation, and aid. Khan (1979) referred to the network support as a "convoy" and states that an individual at any moment in time has a convoy consisting of a set of persons on whom he relies for support and on who rely on him for support in a reciprocal manner. Both Khan (1979) and Norbeck (1981) included reciprocity in their conceptualizations. The work of Norbeck (1981) and Khan (1979) provided the framework for the study of social support in this present study.
Norbeck, Lindsey, and Carrieri (1981) qualitatively researched the social support needs of family caregivers of child, adult and elderly psychiatric patients and found that the needs clustered in the domains of emotional, feedback, informational, and instrumental and were therefore similar to those described by House (1981). Differences were found across the three age groups. Although many support needs were expressed the needed support did not exist. The support needs of cancer patients have been investigated by a number of researchers (Peters-Golden, 1982; Dunkel-Schetter, 1984; Zemore and Shepel, 1989; Baider and Kaplan-DeNour, 1984; Northouse and Swain, 1987).

A comprehensive and interesting report of research (Peters-Golden, 1982) from John Hopkins University hospital profiled how individuals with cancer (N=100) and those without cancer (N=100) perceived cancer and the role social support played in the situation. In this research, Peters-Golden (1982) interviewed 100 breast cancer patients to identify perceived social support and 100 disease-free individuals to identify anticipated support in the cancer situation. Interviews took place at out-patient clinics for breast cancer patients and in the waiting area of a university general dental clinic for disease free individuals. The interviews lasted approx 30 minutes and
were guided by a question schedule designed to elicit cultural, social and psychological data. Both men and women, married and single were included in the cancer sample with a mean age of 57 and a range of 26-80 years. All were white and the majority Catholic. The majority (93%) had been treated surgically. Fifty three percent had recurrent disease and were receiving either chemotherapy, radiotherapy or hormonal treatments. Patients were from 3 weeks to 21 years post diagnosis. The disease-free individuals were slightly younger (mean age 35 years and a range 18-74), and eight blacks were included. Almost half were married and the remainder either single, divorces or widowed.

Results showed that disease-free individuals reported assignment of stigma and avoidance behavior towards cancer patients yet they believed that they would have a network of support to call on if they themselves were to develop cancer. Thirty one percent of the healthy population stated that they would tell no one if they were diagnosed as having cancer and 58% named one individual with whom they could discuss the occurrence of cancer. Strategies which they felt they would use in supporting individuals with cancer were "cheer them up" or "tell then how good they look...to lift their spirits" (p.488). It is interesting to note that patients with cancer considered
these strategies inappropriate and unhelpful. Individuals with cancer reported non-materialization of expected supports and decreased adjustment due to this subjective experience. Feelings of having no one to turn to were reported by 33% of the sample. Further, the support extended was considered in the main inappropriate as individuals seemed to think, that the loss of a breast was the most important thing rather than the cancer. A third of the breast cancer patients said that they relied on "no one" for support during the experience. Twenty two percent depended on their husbands, 10% on religion, 8% on themselves, 5% on other cancer patients and only 4% on their doctor. Only half of the patients felt that the social support they received was adequate or beneficial.

Patients were unprepared for the separation from other people, the evaporation of anticipated support and the shying away of individuals from them. Many people expressed surprise at the rearrangements of their friendships; i.e. many of their close friends from whom they had expected caring and understanding disappointed them and marginal friends gave enormous help. A surprising finding was that disease-free individuals did not give social support or seem to understand how it may be given yet they did not associate the fact with the possibility that if they themselves developed cancer that their network
of individuals may not be supportive.

While the study presented much information it has many faults. The theoretical perspective for the study was not explained or a definition of the concept given. The questionnaire format for interviews (which must have been comprehensive) was not presented in the publication. Whether exactly the same questions were asked on patients with cancer and those without is unknown. It did appear that both network support and social support aid given were investigated as well as perceived adequacy of support. No information was given on data analysis but results were presented in the main in percentages. A critique of the method is the inclusion of males and females yet the researcher said that opinions regarding cancer did not differ, between men and women with the exception of beliefs about breast cancer. Men made a major distinction between having cancer and having breast cancer and felt that women would not disclose the cancer while women felt that they would disclose and discuss breast cancer as easily as any other form of cancer. Another important finding from this research was that all patients who felt that they received inadequate social support reported problems in adjustment, as well as feelings of stigmatization (expressed as isolation, avoidance, branded or abnormal).

In contrast to these results Dunkel-Schetter (1984)
reported that of the 79 cancer patients she interviewed, 95% indicated that they were receiving as much love and understanding from their spouses or significant others as they needed. However, neither study (Peters-Golden, 1982; or Dunkel-Schetter, 1984) used a control group to assess the effects of cancer on emotional support.

Zemore and Shepel (1989) in a Canadian study filled a gap in the literature by investigating social support and emotional adjustment in a group of breast cancer women and comparing the findings with a control group. The sample comprised 301 women who had undergone a mastectomy for breast cancer and 100 women diagnosed as having a breast lump. The hypothesis tested were: (1) breast cancer patients should perceive less emotional support from significant others than no-cancer controls, (2) perceived emotional support should be related to self esteem and other measures of adjustment (3) breast cancer patients should experience more difficulties in their interpersonal relationships and their emotional adjustments than no-cancer controls. Social support was conceived and measured as the individual’s perception that she can talk about problems and feelings with a spouse, friend or relative. The instrument was an interview. Emotional adjustment was measured by Social Adjustment and Emotional Adjustment Scales.
The mastectomy sample group was 29 to 69 years of age with a mean of 56 years. Most (61%) were married and living with their husbands. Stage 1 breast cancer was diagnosed for 68% with the remainder in Stage II. Radiotherapy had been administered to 42% of participants. The women were post operative for between 3 and 26 months. The no-cancer, no-mastectomy group were women who had discovered a breast lump but whose subsequent tests proved negative for cancer. Ages ranged from 31 to 69 with a mean of 50 years. The majority (69%) were married. Age difference between the two groups were significant. Other demographic features between groups were not significantly different.

Results showed that perceived emotional support was positively correlated with adjustment. The cancer patients perceived greater emotional support from friends and family than did the controls. They reported being more able to confide in their family and friends than did the sample of women without breast cancer. Breast cancer seemed to strengthen the relationship between the patient and important others. In addition the cancer patients were no more socially or emotionally maladjusted than women without cancer.

The research presents important findings. When selecting the sample the researchers found that a great
number of individuals (N=124 for cancer patients and N=57 for no-cancer patients) choose not to participate in the study. How self selection biased the results is unknown. Cancer patients were shown to be more adjusted than individuals in the no-cancer group. It is also not known if the cancer patients were more adjusted than the no-cancer group prior to the research.

**Relationship between social support and coping, and social support and adjustment**

Social support has shown some association with illness outcomes and there is a growing body of literature attempting to relate social factors with recovery from illness. In the 1980’s attention has been focused on the role which various support systems play in the recovery from breast cancer surgery. The major focus of much of this research has been on social support generally thought of as social ties to others or and to the community. While there are many types of support, a lot of attention has been given to emotional support available from spouse, family and friends (Woods, and Earp, 1978, Bloom, 1982, Jamison, et al 1978, Grandstaff, 1976, Worden and Weisman, 1977). Overall, psychologic adjustment has been of primary concern and social support has been associated with positive adjustment. A difficulty is the diversity in
definitions and outcome measures.

Baider and Kaplan-DeNour (1984), Northhouse and Swain (1987) have shown that social support is an important factor in the adjustment of women with breast cancer. Greer (1984) defines quality of life as emotional and physical well-being following treatment for cancer and for in excess of ten years he and colleagues researched the topic. In a longitudinal study of males post laryngectomy Greer and Silverfarb (1982) found that 50% suffered depression and anxiety to such a level that it interfered with work and personal relationships.

Wood and Earp (1978) have investigated through interviews with 49 breast cancer individuals, the preposition that social support may have an influence on adjustment as measured by sexual functioning and symptoms of depression immediately after surgery and 4 years later. Participants were recruited from 6 hospitals and had varying grades of breast cancer. Questionnaires and a social support rating scale measuring two dimensions of social support (helping and listening) were studied. Scores were based on a four point scale from 0 (not at all) to 4 (a lot). Demographic variables, complications after surgery, and the presence and type of social support were compared with the number of symptoms of depression reported by the women. No significant relationship was found
between social support and depression. However, it was seen to have a mediating effect on the relationship between physical symptoms and depression.

There were many difficulties with the study including participant attrition and the validity of the instruments to measure social support. However, the study is important as it is one of the first studies reporting the buffering effect of social support for breast cancer patients.

Jamison, Wellisch and Pasnau (1978), studied 41 post mastectomy women who participated in the study approximately 22 months after surgery. Standardized psychological tests (the Eysenck Personality Inventory Neuroticism scale, and the Rotter Internal Locus of Control Scale) were completed. Further, a questionnaire designed to examine adaptation in terms of aspects of emotional response before and after surgery, perception of spousal relationship and attitudes towards medical and nursing staff in hospitals was also completed. Results showed that the majority of the sample reported favorable employment adjustment, had lower scores on the Eysenck Personality Inventory Neuroticism scale, a more external locus of control on the Rotter Internal Locus of Control Scale and perceived significantly more understanding and emotional support from spouses and friends. Sources of support were spouses and friends. Nursing and medical staff were
evaluated as less supportive. The results of this study seem favorable in terms of support given and adjustments made. The study took place 22 months after hospitalization. The passage of time may have affected the results. The questionnaire developed to examine adaptation was not explained and may not have been reliable or valid. Further, the type of surgery, the treatment given and the small sample number may mean that the results are not comparable to those of other studies.

Punch and Mettlin (1982) examined the relationship between social support and short-term recovery from breast surgery in 151 female breast cancer patients. The sample were selected based on being 3 to 12 months post operative and as having breast cancer without metastasis. In an effort to allow individuals sufficient time to adjust to the cancer and surgery, three to 12 months post surgery was the time chosen for the study. Interviews were held using a social support instrument developed by the researchers which measured support regarding the extent to which three forms of support (social, professional and financial) were available. Outcome variables were measured on physical recovery (by Physical Index constructed for the research) and Psychological Adjustment (measured by Bradburns Psychological Well Being Scale). Mean age for the sample was 59 years with a range of 29–92. The sample mostly
comprised married women (60%) and widowed individuals (28%).

Results showed that social and professional support were significantly and positively related to psychological adjustment. Financial support was significantly and positively related to physical recovery. The results supported the previous literature suggesting a relationship between social support and psychological adjustment.

Instruments used in this research to measure social support and physical recovery were devised by the researcher. While some information was given on the instruments no prior testing had taken place and no information was given on instrument development or reliability and validity. The three support measures were significantly intercorrelated indicating that the three factors measured may in fact be measuring the same underlying factor. The failure of social and professional support to be related to physical recovery may be associated with the measurement instrument used or the retrospective nature of the study.

A number of researchers have reported that mastectomy patients have difficulty obtaining support following surgery. An early longitudinal study by Quint (1963) described the impact of mastectomy and adjustment to it by 21 women. The sample were interviewed during
hospitalization and at intervals for one year. Conclusions were that they perceived limited support from doctors, nurses, family and friends who appeared to feel powerless in dealing with the cancer. In the study it appeared that while family and friends were interested in the woman initially they soon expected her to return to normal and understanding of the psychological effects of mastectomy and the need to talk about it were relatively taboo subjects and involved loneliness for the individual involved. For Peters-Golden (1982) only 50% of the breast cancer patients reported adequate amounts of support. Difficulties in obtaining social support was also reported by Meyerowitz, Watkins and Sparks (1983) in a study with 50 patients and patients in the study said that family and friends often either avoided them or tried to cheer them up. Vachon (1986) reported that individual mastectomy patients who lack initial support are likely to remain highly stressed over time. Baider and Kaplan-DeNour (1984) found that couples at high risk of developing psychological distress following the mastectomy were those whose family environment did not allow them to openly express their feelings.

One of the better studies reviewed was one in which Northouse (1988) researched social support in patients and husbands in relation to adjustment to breast cancer. Fifty
hospitalized post-mastectomy patients at 3 and 30 days post surgery comprised the sample. The women were aged between 25 and 76 and the majority worked outside the home. Most had two step surgery with biopsy preceding mastectomy. Eighty four percent of the sample had radical mastectomies with only 16% receiving less extensive surgery. Approximately 32% received chemotherapy following surgery, 8% received radiotherapy, and 60% required no adjunct therapy. The instruments used were a social support questionnaire designed by the researcher and the Affects Balance Scale, the Brief Symptom Inventory and The Psychosocial Adjustment to Illness Scale which measured psychosocial adjustment. All instruments were completed at 3 days and 30 days post surgery.

Findings were that patients and husbands who reported higher levels of social support from spouses, family members, friends, nurses, and doctors reported fewer adjustment difficulties. Further, social support accounted for more variance in adjustment over time than did the variables of demographic and medical conditions. The researcher concluded that spouse and family support appear to be two important sources of support to both patients and husbands following a mastectomy.

The instrument used to measure social support was newly developed by the researcher. Details on scale
development and reliability and validity data were given. The researcher did not explain the sample adequately. It was stated that all participants completed the instruments at 3 and 30 days post surgery but the length of time since diagnosis was not given. This is important as scores may be affected by treatments given prior to surgery. While the researcher explained that 32% of the sample was receiving chemotherapy and 8% radiotherapy it was not explained whether these were being given prior to surgery. The sample were recruited by ward staff. Twenty three patients choose not to participate. How these differed from those who chose to participate is unknown.

Summary

From the literature it appears that social support is required at times of illness. In the review it can be seen that the concept of social support has received considerable attention from researchers. Many studies reported that social support is an important and positive variable in the adjustment to breast cancer (Bloom, 1982; Fulch and Mettlin, 1982; Jamison, Wellisch and Pasnau; Peters-Golden, 1982; Northouse, 1988).

Theories suggest that social support may have a buffering or moderating role in coping and health outcomes (Greer, Morris and Pettingale, 1979, Greer and Silverfarb,
1982). For most researchers social support is presumed to be unidirectional. The theory of reciprocity emphasizes bidirectionality and exchange (Tilden and Galyen, 1987). Some researchers have recognized the concept as bidirectional (Kahn, 1979, Kasl and Wells, 1985, Norbeck, 1981, Tilden, 1985) with the potential of preventing the unpleasant feelings of indebtedness and dependency.

Sources of social support include next-of-kin and significant others. Woods and Earp (1978) emphasized a person who listens to concerns, Northouse (1981) and Peters-Golden, (1982) those who demonstrate understanding, Northouse (1981), with whom the individual could discuss concerns and Vachon (1986) with whom the person would not have to put on a false front. Some sources of support may be more important than others. Married individuals may have more or less social support than others yet neighbors, friends or even acquaintances may even be more beneficial as they are removed from the individuals intimate contacts and as such can provide the required distance yet support. Natural networks are a potential source of support but may not include individuals who have experience in dealing with the specific situation.

There has long been the assumption that social support is always positive and beneficial (Antonucci and Depner, 1982). Recognition that social support may have negative
features is relatively recent and literature exists (Barrera, Sandler and Ramsay, 1981, Hall and Wellman, 1985, Schumaker and Brownell, 1983) suggesting that some ties with friends and families are sources of stress and conflict rather than support. Several authors (Antonucci, 1985; Tilden, 1985, Wortman and Conway, 1985) have commented on the cost of social support both to the recipient and the provider. These costs and benefits of receiving or giving social support are important. Support attempts directed towards an individual may be unhelpful and reductionist because they discourage discussion of real problems or feelings, encourage recovery quickly and resumption of previous lifestyle, or rely on giving advice (Wortman and Lehman, 1985).

Some studies showed that patients perceived that little social support was available to them and that was available was ineffective. Peters-Golden (1982) reported findings for 100 breast cancer patients which demonstrated that not only did expected support fail to materialize for the majority of the sample but that the support when offered was often inappropriate in nature. The withdrawal from family and friends reported has been widely recognized by other researchers (Wortman and Dunkel-Schetter, 1979). Some individuals offering social support may hold misconceptions about the particular illness and therefore
speak inappropriately. However, evidence exists which
refutes the findings that social support may not be
beneficial. Dunkel-Schetter (1984) and Zemore and Shepel,
(1989) found that individuals with cancer are supported in
their situation and Gotay (1984) found that seeking social
support was a commonly cited strategy in both early and
late stages of cancer but individuals with advanced stage
disease used more social support than recently diagnosed
individuals. In a study with 72 individuals with cancer
Oberst et. al.(1991) found that social and recreational
activities were the activities most disrupted, which may
mean that even if support is desired, it is difficult to
maintain.

The influences of social support on coping and
adjustment have been recognized. Krause (1991) showed the
importance attached to social activity and social support
by Finnish post mastectomy women and Ali and Khalid,
(1991), with Egyptian women coping with breast cancer.
Maguire (1978) in a longitudinal study showed a
relationship between social support and depression and
anxiety. There was a greater incidence of depression,
anxiety and sexual problems among the breast cancer
patients than among the no-cancer controls. Northouse
(1988) reported that women with more social support had
less fear of disease recurrence and Funch and Mettlin
(1982) that social support is related to psychosocial adjustment but not to physical recovery. Zemore and Shepel (1989) showed that for 301 breast cancer patients that perceived emotional support was positively correlated with adjustment as measured with an Emotional Adjustment Scale.

In the studies the concepts of social support and adjustment have been defined and measured in different ways. Few studies (Northouse, 1988; Zemore and Shepel, 1989) explained the theoretical framework within which social support was to be studied. While the concepts have received considerable attention by nurse researchers it is difficult to compare findings. Much effort has been expended in developing instruments measuring social support in nursing. Stewart (1989) reviewed 21 of the instruments developed by nurse researchers and used in 32 of 52 social support studies. He concluded that social support has been studied from the perspective of type, source, direction, drawback, disposition, description or evaluation, duration and level (Stewart, 1989) and that available and enacted emotional and instrumental support from family and friends are most studied. Further, he determined that the number of diverse measures reported could be considered superfluous. In the studies reviewed social support was measured by interview (Peters-Golden, 1982; Maguire, 1978; Dunkel-Schetter, 1984; Funch and Mettlin, 1982) and by
researcher designed social support questionnaires (Zenmore and Shepel, 1989; Woods and Earp, 1978; Jamison et. al. 1979; Northouse, 1988). There is therefore difficulty in drawing conclusions.

Similarly adjustment has been measured by a variety of instruments. Zenmore and Shepel (1989) used an Emotional Adjustment Scale; Jamison et.al. (1978) the Eysenck Personality Inventory and the Rotter Internal Locus of Control Scale; Funch and Mettlin (1982) a Physical Index and the Bradburns Psychological Well Being Scale; and Northouse (1988) the Affects Balance Scale, the Brief Symptom Inventory and the Psychosocial Adjustment to Illness Scale. The diversity of instruments used again makes comparison of results difficult.

Overall, from the review it appears that social support is important in coping and adjusting to cancer. Sources of social support are varied and the adequacy of support required or available may fluctuate. In the present study, the theoretical perspective used is based on the work of Khan (1979) and Norbeck (1981). Social support is defined as "interpersonal transactions that include one or more of the following: the expression of positive effect of one person towards another; the affirmation or endorsement of another person’s behavior: the giving of material aid to another" (Khan, 1979, P.85). Included also
is the notion of "convoy" or group of individuals who supply the social support at a point in time. The study builds on the research reported with patients of mixed cancer types. The network members comprising the "convoy" of social support are examined simultaneously with their importance in the social support domains of affect, aid and affirmation. The relationship between social support, coping and psychosocial adjustment are examined. The concepts are measured with instruments deemed reliable from previous studies and the sample is newly-diagnosed female breast cancer patients.

Demographics

Few studies in the literature examine the influence of environment variables on coping or adaptation responses in the patient with cancer. The studies that explored factors such as job, home environment, sexual difficulties were those using the PAIS as previously reported. Most other authors alluded to rather than directly address the effects maintaining job and family responsibilities have on coping. Some authors have asserted that maintaining family role responsibilities while undergoing cytotoxic chemotherapy is extremely important to the patient, but this suggestion is not supported by empirical findings. Studies reporting the effects of age, education, occupation, marital status and
length of time since diagnosis were not found in the literature. These variables are examined in the present study.

Overall conclusion to literature review

Appraisal

Appraisal determines whether the event is perceived as stressful or benign (Lazarus and Folkman, 1984; Lazarus and Launier, 1978). The literature review supports the belief that cancer is stressful. Cancer patients exhibit a wide range of responses to the diagnosis of cancer which include avoidance, distancing, cognitive distortions, confronting and distress. The available studies reviewed employed interviews as a method of data collection. A criticism is the questionable validity or subjectivity of the data. With the exception of Morris et. al. (1986) and Pettingale (1985) retrospective recall (for periods of three months to ten years) was used to identify appraisal of the situation. recall may have been colored by the passage of time in these studies. Only one study (Oberst, Gass and Ward, 1989) assessed the degree of harm/loss, threat or challenge associated with cancer as suggested by Folkman and Lazarus (1984). The study was with caregivers and not with individuals experiencing cancer.
Samples in the studies were diverse in types of cancer, cancer stage and time since diagnosis. All age groups were represented in the samples. Older adults may have a different outlook when compared to younger adults which did not seem to be a consideration. Method of participant recruitment was different for each of the studies. These ranged from the media, major London city hospitals, out-patient departments and self-help groups. How these differences might interfere with results is unknown.

Appraisal denoting stress may lead to poor coping as the outcome is unclear and there is difficulty in assigning meaning to any visible cues (lazarus and Launier, 1978). The literature search revealed no studies that linked appraisal with coping in a cancer population. One study was found that explored the relationship appraisal and survival (Pettingale et. al, 1979). The findings suggest that denial as an initial reaction to cancer may be protective and promote survival.

There is a dearth of empirical studies on appraisal that involve cancer patients receiving cytotoxic chemotherapy. It is apparent that further studies are necessary with specific populations. The present study undertaken has examined appraisal in newly-diagnosed breast cancer individuals. Appraisal is defined as the meaning of
the specific situation of cancer and cytotoxic chemotherapy to the individual. It is measured objectively by an open question which elicits the meaning of the situation and a closed question to which individuals respond in terms of harm/loss, threat or challenge.

Cancer, as a diagnosis generally has been shown to be a stressor. Little empirical work has been reported on the coping mechanisms used to deal with cancer and/or treatment modalities. Many of the studies reviewed lack theoretical framework, definitions and reliable and valid instrumentation.

In the majority of studies reviewed coping was measured by interview and only one researcher (Morris, Blake and Buckley, 1985) described in any detail the process of analysis. Just two studies (Hertz, 1989; Perry, 1990) used a recently-developed valid and reliable instrument. The sample numbers in the studies varied from small (N=20) to large (N=120). Mixed cancer participants were studied and time since diagnosis differed from study to study.

In the studies, coping was expressed in emotive and problem-focused modes. However, it is apparent that the coping responses used by well-defined groups of patients require further research. The theoretical framework within which any research is to be placed needs definition. The sample needs to be as homogenous as possible and valid and
reliable instruments need to be used. The present research investigates coping within the Lazarus and Folkman (1984) model of stress and coping. The sample is female breast cancer patients attending outpatient facilities for cytotoxic chemotherapy. The Ways of Coping Checklist which is a reliable and valid instrument was used to measure coping.

**Relationship between coping and adjustment**

Little research exists in cancer populations that explains the relationship between coping and adjustment. That which exists for cancer patients and studies with other populations suggest that individuals use both emotion-focused and problem-focused strategies with varying effects. The relationship between coping and adjustment proposed by Lazarus and Folkman is that the more the individual has at stake the more interference there will be in psychosocial adjustment. Based on this premise it is proposed that emotion-focused coping will lead to poorer adjustment and cognitive strategies will lead to better adjustment. Hypotheses based on these conceptions are tested in the proposed research. This present study measures coping and psychosocial adjustment and examine the relationships between coping methods employed and adjustment in seven domains of everyday life.
Adjustment

Clinical and anecdotal research confirm the importance of adjustment to cancer. Studies on adjustment to cancer have focused on the patient with other studies focusing on both patients and spouses. Some longitudinal studies also exist which attempt to examine adjustment changes over time.

Conceptualization of adjustment differs among researchers and multiple ways of measuring the concept have been attempted. Some researchers have measured adjustment from the single perspective of Mood or Depression while others have measured the concept with multiple measures of adjustment.

There have been conflicting reports on adjustment to breast cancer. These range from emotional self-limiting reactions, thoughts of suicide and use of tranquilizers. In some studies physical adjustment improved over time, in others level of distress remained the same. A difficulty in comparing results arises in relation to study designs. The samples varied in number, adjuvant treatments types and inclusion of sexes.

From the literature review it appears that adjustment has been investigated from a number of perspectives and that there are only a few studies in which reliable and valid instruments have been used (Bailer and Kaplan-DeNour,
1984; Northouse and Swain, 1987; Northouse, 1990; Worberg, 1989). Baider and Kaplan-Denour (1984) and Northouse and Swain (1987) have studied adjustment of husband and wives on a longitudinal basis. Worberg (1989) compared three groups on PAIS scores. There was no study found in the literature that investigated adjustment in a sample of newly-diagnosed breast cancer patients being treated by cytotoxic chemotherapy in outpatient or day care facilities while living at home.

Studies are necessary that can define psychosocial adjustment both theoretically and operationally while placing it within a theoretical perspective. Standardized valid and reliable instruments need to be used and the sample clearly defined. This researcher defined adaptation in terms of psychosocial adjustment and measured it with the multidimensional Psychosocial Adjustment to Illness Scale. The sample included newly-diagnosed individuals with breast cancer receiving cytotoxic chemotherapy in outpatient or day care facilities. Adjustment to illness is assessed within the stress-coping theory of Lazarus and Folkman (1984) and measured as an outcome of appraisal, coping and social support.
Social support

Studies by Bloom (1982); Fulch and Mettlin (1982); Jamison, Wellisch and Pasnau, 1982; Peters-Golden, (1982); Northouse, (1988); confirm that social support is required at times of illness. Theories suggest that social support may have a buffering or moderating role in coping and health outcomes (Greer, Morris and Pettingale, 1979; Greer and Silverfarb, 1982). From the literature review it is seen that the concept of social support has received considerable attention from nurse researchers.

Sources of social support include next-of-kin and significant others. Woods and Earp (1978) emphasized a person who listens to concerns; Northouse (1981) and Peters-Golden (1982) suggest those who demonstrate understanding; and Vacron (1986) further suggest an individual with whom a person would not have to put on a false front. Some sources of support may be more important than others. Married individuals may have more or less social support than others yet neighbors, friends or even acquaintances may even be more beneficial as they are removed from the individuals intimate contacts, and as such, can provide the required distance yet support. Natural networks are a potential source of support but may not include individuals who have experienced in dealing with a specific situation.
The assumption is held that social support is always positive and beneficial (Antonucci and Depner, 1982). Recognition that social support may have negative features is relatively recent and literature exists (Barrera, Sandler and Ramsay, 1981, Hall and Wellman, 1985, Schumaker and Brownell, 1983) to suggest that some ties with friends and families are sources of stress and conflict rather than support. Several authors (Antonucci, 1985; Tilden, 1985, Wortman and Conway, 1985) have commented on the cost of social support both to the recipient and the provider. Some studies show that patients perceived that little social support was available to them and that which was available was ineffective (Peters Golden 1982, Wortman and Dunkel-Schetter, 1979). However, some evidence exists which refutes the findings that social support may not be beneficial (Dunkel-Schetter (1984) and Zenmore and Shepel, 1989).

The influences of social support on coping and adjustment have been recognized (Krause, 1991, Nafia and Hous, 1989, Maguire (1978, Northouse, 1988, Punch and Mettlin, 1982, Zenmore and Shepel, 1989). However, in these studies, the concepts of social support and adjustment have been defined and measured in different ways. Few studies (Northouse, 1988, Zenmore and Shepel (1989) explained the theoretical framework within which
social support was to be examined. While the concepts have received considerable attention by nurse researchers, it is difficult to compare findings. Much effort has been expended in developing instruments to measure social support in nursing. Stewart (1989) reviewed 21 of the instruments developed by nurse researchers and used in 32 of 52 social support studies. He concluded that social support has been studied from many perspectives and determined that the number of diverse measures reported could be considered superfluous. In the studies reviewed, social support was measured by interview (Peters-Golden, 1982; Maguire, 1978; Dunkel-Schetter, 1984; Punch and Mettlin, 1982) and by researcher-designed social support questionnaires (Zenmore and Schepel, 1989; Woods and Earp. 1978; Jamison et. al. 1979; Northhouse, 1988). Therefore, difficulty in comparing results and drawing conclusions exists.

Similarly, adjustment has been measured by a variety of instruments. Zenmore and Shepel (1989) used an Emotional Adjustment Scale; Jamison et. al. (1978), the Eysenck Personality Inventory and the Rotter Internal Locus of Control Scale; Punch and Mettlin (1982) a Physical Index and the Bradburns Psychological Well being Scale; and Northouse (1988) the Affects Balance Scale, the Brief Symptom Inventory and the Psychosocial Adjustment to
Illness Scale. The diversity of instruments used again makes comparison of results difficult.

Overall, from the review, it appears that social support is important in coping and adjustment to cancer. Sources of social support are varied and the adequacy of support required or available may fluctuate. In the present study the theoretical perspective used relative to social support is based on the work of Khan (1979) and Norbeck (1981). In this model, social support is defined as "interpersonal transactions that include one or more of the following: the expression of positive effect of one person towards another; the affirmation or endorsement of another persons behavior; the giving of material aid to another" (P.85). Included also is the notion of "convoy" or group of individuals who supply the social support at a point in time. The study builds on the research reported with cancer patients in a number of ways. The network members comprising the "convoy" of social support is examined simultaneously with their contribution in the social support domains of affect, aid and affirmation explained. The association between social support, coping and psychosocial adjustment was examined. The concepts were measured with reliable and valid instruments and the sample includes newly diagnosed breast cancer patients.
Summary of the literature

In summary, the literature review has identified existing research pertaining to appraisal, coping, psychosocial adjustment to illness and social support with samples of cancer patients. It also has identified international research on the subject and the gaps in knowledge which exist.

Appraisal

The literature shows that cancer is appraised as stressful and that individuals exhibit a wide range of responses (anger, avoidance, confronting, denial, distancing, hopelessness, optimism etc.). For Lazarus and Folkman (1984), the three types of appraisal are: harm/loss, anticipated threat, and challenge. Only one study (Oberst, Gass and Ward, 1989) used this framework and the study was with cancer family-member caregivers. The samples used in the studies on appraisal varied widely in terms of sex, type of cancer, stage of disease, treatment modality, and time since diagnosis. The method used most often was the interviews (Frank-Stromborg, 1984, Frank-Stromborg, 1989, Krause, 1991, Greer, Morris and Pettingale, 1979, Morris, Blake and Buckley, 1985, Mages et. al., 1982, Westbrook and Viney, 1982). Two of the studies were from the United Kingdom (Greer, Morris and
Pettingale, 1979, Morris, Blake and Buckley, 1985) and one from Finland (Krouse, 1991) was also reviewed. The results from these international studies showed divergence of appraisal response and in this they were no different from the results of studies from the United States of America.

**Relationship between coping and adjustment**

Only one study (Pettingale et. al., 1985) investigated the relationship (through interview) between appraisal and adjustment to illness in female breast cancer patients. These researchers found significant differences in survival when women were compared by their initial response to cancer.

**Coping**


Overall, the studies reported expressions of coping in emotive and cognitive modes. Problem-focused coping was
used most often in encounters that were appraised as changeable and emotion focused-coping used in encounters appraised as unchangeable (Lazarus and Folkman, 1984). Of the studies reviewed two were Canadian (Gotay, 1984; Lierman, 1988). These used semi-structured questionnaires to investigate coping responses. Findings were varied and coping strategies ranged from taking firm action to seeking information. The Egyptian study reviewed (Ali and Khalid, 1991) used an interview to investigate coping responses and found that using faith, compliance and information seeking helped the individual to cope. All of the remaining studies were from the United States and demonstrated a variety of coping responses.

Overall, the literature review demonstrated a deficiency of empirical studies related to coping. There is no research with breast cancer women using the Lazarus and Folkman Ways of Coping Checklist and none of the studies reviewed used female breast cancer women who were receiving chemotherapy as day care patients.

Adjustment to illness

From the literature it is clear that adjustment has been measured in a variety of ways: interviews (Grandstaff, 1976, Jamison et. al., 1978, Pettingale et.al., 1981, structured questionnaires (Hopkins, 1986, Lehmann et.al.,
1978), Psychosocial Adjustment to Illness Scale (PAIS) (Baider and Kaplan De-Nour, 1984, Northhouse and Swain, 1987, Northhouse, 1990, Worberg et.al., 1989), the Effect Balance Scale (Northhouse and Swain, 1987, Northhouse, 1990), the Brief Symptom Inventory (Northhouse and Swain, 1987, Northhouse, 1990), the Beck Depression Inventory (Krouse and Krouse, 1982), and Profile of Mood States (Sutherland et.al., 1985), Emotional Adjustment to Illness Scales (Zenmore and Shepel, 1989), a Personality Inventory and the Rotter Internal Locus of Control Scale (Jamison et.al., 1978) and with the Bradburns Psychological Well Being Scale (Funch and Mettlin, 1982).

Some samples used included individuals with mixed site cancer (Lehmann et. al., 1978, Krause and Krause, 1982), and were of mixed sex (Lehmann, 1978, Sutherland, Walker and Till, 1985). Other samples used husbands and wives (Northhouse and Swain, 1987, Northhouse, 1990).

Only two of the studies reviewed were based on non USA research. The Israeli study (Baider and Kaplan De-Nour, 1984) used the PAIS scale and results are compared with the findings from this study. The Canadian study (Sutherland Walker and Till, 1985) measured Mood as an indicator of adjustment.

In the literature there is some research reported which uses the PAIS to identify psychosocial adjustment to

Social support

Social support has been identified in the literature as an important resource variable for women with breast cancer. The literature shows that social support is sought and is mainly beneficial. Some studies have shown that little social support was available (Peters-Golden, 1992) failed to materialize (Quint, 1963) or proved to be inappropriate (Peters-Golden, 1982). The concept has been measured through interviews (Peters-Golden, 1982; Dunkel-Schetter, 1984, Zenmore and Shepel, 1989, Quint, 1963) by investigator constructed questionnaires (Wood and Earp, 1978, Jamison et.al., 1978, Northouse, 1988). Overall, considerable research has been generated on social support in women with breast cancer. However, issues of sampling and instrumentation make comparison of results difficult. There is no Irish study existing in which social support available and used by breast cancer patients is investigated.

Overall, there is some information available in relation to appraisal, coping, social support and
adjustment to illness in breast cancer women. However, the concepts have not all been investigated in one study and the relationships between them explored. Further, the instruments used in some studies lacked evidence of validity and reliability. This present research is significant as there has never been a study published that has investigated all of the concepts in one study. Further, as there are no studies relating to patient response to the diagnosis and associated treatment modalities in breast cancer in Ireland this study will present exploratory research on the topic.
CHAPTER 3

RESEARCH DESIGN

The study is a descriptive study of Irish women with breast cancer who are receiving cytotoxic chemotherapy. The study addresses six specific research questions. The first question pertains to the relationship between primary appraisal and coping. The second addresses the relationship between appraisal and psychosocial adjustment to illness. A third question examines the relationship between coping and the outcome of the stressful encounter which is measured in this study by the patient’s responses to the Psychosocial Adjustment to Illness instrument. The fourth question explores the relationship between coping strategy employed and the social support variable. The fifth question investigates the relationship between social support and psychosocial adjustment to illness. Question six examines the relationship between all variables in the study and psychosocial adjustment to illness.

Four instruments were used. A questionnaire was used to investigate primary appraisal (Part A) and to examine demographic and personal characteristics Part B). Part A consists of two open-ended and one closed-choice question. Part B consists of questions in relation to age, occupation, marital status, length of time since diagnosis and understanding of the illness. The Ways of Coping
Checklist, (Lazarus and Folkman, 1985) which evaluates the degree of coping, the Psychosocial Adjustment to Illness Scale which examines adjustment (Derogates, 1986) and the Norbeck Social Support Scale (Norbeck, Linsey and Carrieri, 1981) were administered to all individuals in the sample.

The research design enables examination of cognitive appraisal, coping responses, social support experienced, and level of psychosocial health in a sample of Irish women with breast cancer receiving cytotoxic chemotherapy on a day care basis.

Sample

One hundred and forty six patients were asked to participate in the study. One hundred patients agreed and completed the research instruments. When the study was initially planned all participants were to be drawn from one hospital site. However, it soon became apparent that it was not going to be possible to recruit sufficient numbers of newly diagnosed individuals from the one outpatient site. Patients with relapsed disease were then included while at the same time negotiations were opened regarding the use of 4 other sites. Shortly after opening the 4 other research sites it became evident that sufficient newly diagnosed patients would be available. Information was collected from ten patients with relapse
disease who were receiving a second or subsequent course of chemotherapy. In the final analysis these data were excluded as it was thought that the experiences of these individuals might differ considerably from those of first time recipients. The sample therefore became 90 individuals.

Of these ninety patients four patients stated that the length of time since diagnosis ranged from 4 to 9 years, yet they were first time recipients of chemotherapy. As the length of time since diagnosis was so different from the other sample members (range 4 to 40 weeks, mean 18 weeks) these patients were excluded from the analysis. The sample therefore included eighty six female breast cancer patients attending outpatient oncology facilities as first time recipients of chemotherapy.

All participants were asked on recruitment to the study to respond to the primary appraisal questions (Part A of the questionnaire). The three research instruments (The Ways of Coping Checklist, The Psychosocial Adjustment to Illness Scale and the Norbeck Social Support Questionnaire) were administered during the third or subsequent chemotherapy treatment. Criteria for inclusion in the sample were: (i) diagnosed with breast cancer, (ii) currently receiving a first course of chemotherapy for breast cancer, (iii) in hospital for not more than half of
the time during the past 4 to 12 week period, (iv) aged 18 years of age or older, (v) pre menopausal (as designated in patient notes), (vi) no concomitant disease present, (vii) not known to have a psychiatric disorder, (viii) physically able to participate, (ix) able to read and write English, (x) willing to partake in the study.

Rationale for subject exclusion

A homogenous sample of female breast cancer patients were subjects in the study. The decision to use women with breast cancer was based on the high prevalence of breast cancer in women in Ireland. For many women this is their first illness. Women with other cancers were excluded as they may have many other problems. A treatment modality most often given for breast cancer disease is cytotoxic chemotherapy, and most women with breast cancer are treated in day facilities.

Excluded from the study were women experiencing acute physical distress symptoms (nausea, vomiting, pain) and those classified by the oncology physician as being in the terminal stages of the disease. Further, patients with known brain involvement (cerebral metastases) or psychiatric disorders were excluded as they may present an impaired ability to communicate fluently, and other problems relative to misrepresentation of words or speech.
Patients with a previous history of malignant disease or current major systemic illness likely to influence life expectancy were also excluded. Only women being treated by oncologists were included. Many other breast cancer women are treated by surgeons in general hospitals throughout the country. The treatment protocols, settings and experiences of doctors and nurses working with these individuals appears to differ considerably from those in designated oncology units. Women being treated in such circumstances were not included in the sample.

**Rationale for sample size**

Sample size for this study was determined based on the findings for effect size and power calculations in a study by Gass and Chang (1989). This study was focused on coping and psychosocial health dysfunction in widows and widowers. The design of the present study most closely approximates the study by Cass and Chang (1989). Correlations reported between coping, the independent variable, and psychosocial adjustment, the dependent variable, ranging from .21 to .36 in their research.

Medium effect size was considered acceptable for this study because of the nature of the research. This is proposed in order to account for differences between the groups, that may occur due to study bias (Cohen, 1988).
Cohen says that medium effect size of .50 yields a point biserial correlation between population membership and dependent variables of .24, and for small effect size of .25 a point by serial of .10 (Cohen, 1988, P.25). The Gass and Chang (1989) study yielded correlations within these effect sizes.

Based on an effect size of .30, a significant alpha of .05, and a power of .80 for the proposed study, a sample size of seventy individuals ensures an adequate sample size. At the completion of the study power was again calculated setting the alpha at .05 and a power level at .80, .90, and .95. With 86 individuals in the sample and a power of .8 differences could be detected between items at a .3 level. When power was set at .95 then differences between items could be detected at the .40 level. As the study was exploratory and not based on repeated measures but the treating of each hypothesis as a single independent hypothesis, it was not considered necessary to reduce the number of hypothesis tested.

Setting

The sample was drawn from five oncology units. Four of these were in the city of Dublin, Ireland and one in a hospital 30 miles from Dublin. In the latter site the patients recruited were treated by one of the oncologist
from Dublin and it was considered by him an outlying facility for his practice. The five units are associated with major University Hospitals, and patients with breast cancer are treated in day care or outpatient facilities. Each oncology center has a Medical Oncologist Director and nurses trained in oncology work in the units. In the facilities chemotherapy protocols given to treat breast cancer are similar. Specifically, the protocol consists of Cyclophosphamide, Methotrexate, and 5-Fluorouracil. Prophylactic antiemetic are given, and protocols include an initial medical screen and one day admission to the hospital for the first administration of the first chemotherapy course. Thereafter, each individual attends the day care or outpatient facility every three weeks for six to eight treatments. Nurses who have completed a special university based course in oncology lead the staff team caring for patients in each facility. At each site this nurse became the oncology nurse/research assistant.

**Procedure**

Subjects were selected from case loads of the oncology physicians. The Nursing and Medical Directors of the facilities were consulted regarding the study and their cooperation gained as to subject selection and study procedures. In each facility a request was made for
assistance from the oncology nurses. This request concurred with the desires of the units as the Directors felt that the research would be more meaningful and interesting if staff were involved in patient identification and data collection. For each site a named specialist nurse was identified as a research assistant for data collection purposes. The variables to be measured, the inclusion and exclusion criteria for sampling, and the instruments to be used were discussed until an understanding was achieved.

Potential subjects were identified from patients’ scheduled for treatment at the day care or outpatient facilities of each hospitals. Medical and nursing records were reviewed by a research assistant to identify people who met the inclusion criteria. On the first visit to the oncology outpatient service, patients who fulfilled the inclusion criteria were identified. The purpose of the research was explained and permission for inclusion in the sample sought. Patients who agree to participate signed a consent form. On this visit the first part of the questionnaire (Part A) which related to cognitive appraisal was completed. At the third or subsequent return day visit for chemotherapy the Ways of Coping Checklist, Psychosocial Adjustment to Illness Scale, and the Norbeck Social Support Questionnaire were administered. Some patients completed
the instruments during the visit. Other patients found it too difficult to do so due to the activity level in the facility or the treatment being given and requested more time to complete the 134 item instruments. These were allowed to take the pack home and return it directly to the research assistant or mail it back in the envelop provided. If for any reason the patient was unable to accept the instruments at the third visit the fourth visit or subsequent visit was used.

Instruments

The concepts studied and the measurement instruments used are shown in Figure 2. Appraisal is measured by two items on a questionnaire. One question was open ended and required the individual to express in one or two sentences the meaning of the illness and treatment. The second question was a forced choice item which classifies appraisal into one of three categories: harmful loss without other losses, anticipated threat, or challenge. The Ways of Coping Checklist, the Psychosocial Adjustment to Illness Scale, and the Norbeck Social Support Scale were administered at the third or fourth visit for chemotherapy. A pilot test with a number of breast cancer patients of these instruments has shown feasibility of use and the possibility of completion within approximately one hour by study subjects.
CONCEPTUAL MODEL

FIGURE 2: HYPOTHESESED RELATIONSHIPS BETWEEN THE STUDY VARIABLES AND MEASUREMENT INSTRUMENTS USED. (Instrument denoted *)

PERSONAL FACTORS:
Age, Education, Occupation, Marital status, Understanding of illness, Length of time since diagnosis.

SOCIAL SUPPORT:
Network
Affirmation, aid, affect.
Appraisal

A questionnaire was used to investigate primary appraisal and to examine demographic and personal variables (see Appendix 1). It consisted of three questions. The first was an open-ended question which required the individual to describe (in one or two sentences) personal feelings about having cancer which required frequent chemotherapy as a hospital outpatient. This was felt necessary as the closed choice question may not be comprehensive enough to capture the feelings experienced.

In the second question three response choices were given. Respondents are told that for many people there is one feeling about the illness and treatment that predominates and asked "which of the following represents your predominant appraisal of your present situation". The choices were: (i) "harmful loss", (ii) "anticipated threats", (iii) "challenge". The question was based on the work of Lazarus and Folkman (1984) who propose that when an individual appraises a stressful situation that it can be perceived as one of these three choices.

Findings from studies conducted by Lazarus and Folkman (1984), indicated that individuals who define their situation as a "harmful loss" will view their it as a great personal loss but with no other related losses, fears, or problems they could not manage. To ensure that
respondents understood the meaning of the category in the questionnaire it was explained that "harmful loss" refers to damage already experienced.

Findings from studies conducted by Lazarus and Folkman (1984) indicated that individuals who define their situation as presenting "anticipated threats" define their situation as a loss with many other anticipated losses, fears, problems and worries that they will not be able to manage. To ensure that respondents understood the meaning of the category in the questionnaire it was explained that "anticipated threats" referred to danger that is anticipated.

Finally, findings from studies conducted by Lazarus and Folkman (1984) indicated that individuals who define their situation as presenting "a challenge" are determined to overcome or master the situation and use it as an opportunity for growth. To ensure that respondents understood the meaning of the category in the questionnaire it was explained that "challenge" refers to something to master or conquer.

The question was constructed by the researcher but is similar to one asked by Oberst, Gass and Ward (1989), and by Folkman et.al. (1980, 1986, 1988) and based on their studies over many years. The strategy of measurement is different to that of other researchers who used interviews
to elicit appraisal responses. Evidence of reliability is provided in the studies of Folkman and Lazarus (1984, 1986, 1988) who reported these responses consistently reported by individuals in longitudinal studies. Validity is assessed by the potential of the instrument to measure what it proports to measure. Content validity can be assumed based on the work of Folkman and Lazarus (1984) and based on the opinions of expert nurses who were asked to comment on the question.

The third question asked individuals to indicate in free text their understanding of the disease. This was thought necessary to objectify the perception held by the researcher that Irish people do not use the word cancer often and instead refer to the disease by any other terms.

Coping: The Ways of Coping Checklist

Coping was measured by the subjects' responses on The Ways of Coping Checklist (Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen, 1986). This instrument was developed to measure self reports of subjects on what they thought or did in relation to an event considered stressful. On the scale (Lazarus and Folkman, 1988), respondents were asked to respond to 67 items that describe behavioral and cognitive coping strategies used in a stress situation on a four point Likert scale. Responses range
from "not using a particular coping strategy" rated zero (0) to "used a great deal" rated three (3). Subjects were given this questionnaire to self score, and asked to circle the question response that best describes the extent of their use of each described strategy. Raw scores were obtained by summing the rating for the items on each subscale and dividing this total by the number of items on the respective scales. This procedure allows comparability among subscales that vary in length. The resulting scores range from 0 to 4. High scores indicate more frequent use of coping strategies.

There are eight subscales consisting of emotion-focused and problem-focused coping responses. These are confrontive (describing aggressive and hostile efforts to alter the situation), distancing (describing efforts to detach oneself and create a positive outlook), self controlling (describing efforts to regulate one's feelings), seeking social support (efforts to seek informational and emotional support), accepting responsibility (which acknowledges one's own role in the problem with a subtheme to make things right), escape-avoidance (which describes wishful thinking and efforts to escape), planful problem solving (describes problem-focused efforts to alter the situation), and positive reappraisal (which describe efforts to create positive meaning by
focusing on personal growth) (Lazarus and Folkman, 1988). The instrument has been widely used across various populations, with adolescent girls (De Maio-Esteves, 1990), functionally-disabled adults (McNutt, 1987) spouse-caregivers of persons with dementia (McCarthy-Neudorfer, 1991), widows and widowers (Gass and Chang, 1989), and several studies involving populations with chronic illness (Felton, Revensen and Hinrichsen, 1984) including diabetics (White, Richter and Fry, 1992).

Construct validity has been supported by the extent that findings were consistent with the theoretical predictions and through factor analysis where mean factor loadings ranged from .53 to .86, (Folkman and Lazarus, 1988, 1986, 1985). Test-retest correlation coefficients for a sample of 15 mentally handicapped adults (Wilk, 1990) ranged from .72 (distancing), to .50 (positive reappraisal). On the second administration, none of the scales on the Ways of Coping Checklist differed significantly from the initial administration.

Alpha internal consistency ranged from .80 to .85 for the total score and from .62 to .88 for the individual scales (Folkman and Lazarus, 1988; Folkman, Lazarus, Dunkel-Schetter, De Longis and Gruen, 1986; Gass and Chang, 1989; Lazarus and Folkman, 1983; Redeker, 1992; Wilk, 1990). The alpha coefficients for the subscales computed
for the sample in this study ranged from .50 to .81 for the total score. The subscales had moderate internal consistencies with alpha coefficients in the range .30 to .48. A limitation in using the instrument is that it was developed in the United States of America where it has been used in many studies. However, it may not reflect cultural differences for the population in this study.

**Psychosocial Adjustment to Illness**

Psychosocial adjustment to illness was measured by the Psychosocial Adjustment to Illness Scale - Self Report (PAIS-SR) (Derogates, 1986). The instrument is a self report scale based on a multidimensional, semi-structured questionnaire that requires 20 to 30 minutes to complete. The scale is designed to assess the psychological and social adjustment of patients to their illness. These 46 items comprise seven relatively independent domains of psychosocial adjustment derived from medical practice (Morrow, Chiarello and Derogates, 1978) and factor analysis (Derogates and Lopez, 1983).

The seven principal psychosocial areas in the instrument are related to: changes in health care orientation, vocational environment, domestic environment, sexual relations, extended family relationships, social environment and psychological distress since illness.
Responses are rated on a four point Likert scale that ranges from "improvement" or "no change since illness" rated zero (0) to a "great deal of negative change since illness" rated three (3). Scores are summed for each domain and for the overall PAIS adjustment score. Higher scores indicate less or poorer adjustment to illness (Derogates and Lopez, 1983).

The seven items on the Health Care Orientation measure are concerned with the nature of the respondents' health-care orientation, and whether it will promote a positive or negative adjustment to the illness. Attitudes about health care in general, perceptions of health-care professionals, quality of information and the nature of the patients' expectancies about the condition presently-sustained are assessed. The six items on the Vocational Environment subscale reflect the impact of the medical disorder on vocational adjustment which refers to work, school, or home, whichever is appropriate to the situation. Items assess the perceived quality of vocational performance, vocational satisfaction, lost time, and vocational interest. Measurement in the domain of Domestic Environment (eight items) is oriented towards illness-induced difficulties that arise in either the environment or home environment. Problems in adaptation are addressed with the eight items that evaluate financial impact of
illness, quality of relationships, family communication, and effects of physical disabilities. The fourth subscale Sexual Relationship (six items) is designed to measure changes in sexual functioning or relationship associated with the patients' illness. Items are presented in a progressive sequence, assessing frequency, quality and level of satisfaction. The section on Extended Family Relationships (five items) is designed to measure disruption or derangement in extended family relationships due to the illness. Impact on communications, quality of relationships, interest in interacting with family and other variables are evaluated by responses to this scale.

The items on the Social Environment subscale (six items) reflect the individuals' current social and leisure time activities as well as the degree to which the person has experienced limitations in these activities due to the present illness. The final section of the scale comprising seven items. Psychologic Distress, measures dysphoric thoughts and feelings (distress, depression, hostility, self esteem, body image problems and inappropriate guilt) associated with the illness. Normative data is available for lung cancer patients, renal dialysis patients, acute burn patients and hypertension patients (Derogates, 1990).

In reported studies, there is a high degree of internal consistency with Chronbach Alphas ranging
predominantly from .80 to .93, based on responses of subjects with cardiac and diabetic conditions (White, Richter, and Fry, 1992) lung cancer and renal disease (Derogates, 1986), hypertensive patients (Morrow, Chiarello, and Derogates). Slightly lower subscale alpha internal reliabilities were reported for a sample of burn patients at .51 to .94 (Browne, Steiner, Byrne, Brown and Love, 1987). For this study the reliabilities computed for the total PAIS scale ranged from .60 to .83. Inspection of the intercorrelation matrix revealed that the subscales were relatively independent of one another though contributing to the total score. This lends support to the construct validity of the PAIS.

There is also a high degree of reported intrarater reliability using the PAIS interview format to rate the adjustment for breast cancer \( r = .74 \) to \( .86 \) (Friedman et al. 1988). Evidence of construct validity has been provided through the process of instrument development by the authors and by factor analysis and previous research indicating significant correlations with the empirical and rational hypothesized structure (Derogates, 1986). Evidence for convergent validity of the PAIS was assessed by comparing the PAIS total score with other valid measures or indicators of attitude, mood, or symptomatology, and the general range is \( r = .60 \) to \( .81 \) (Kaplan-De Nour, 1982;
Derogates and Lopez, 1983; Morrow et al 1978). Work has also shown the concurrent validity of the PAIS with clinical judgment (Roberts et al, 1987). A limitation in using the instrument is that it was developed in the United States of America where it has been used in many studies. However, it may not reflect cultural differences for the population in this study.

**Social support: Norbeck Social Support Scale**

Social support was measured by the Norbeck Social Support Questionnaire. The instrument is based on the definition of social support given by Khan (1979) that states "social support is interpersonal transactions that include one or more of the following: The expression of positive affect of one person towards another; the affirmation or endorsement of another persons behavior; perceptions or expressed views; the giving of material aid to another" (p.85). The operational definition for this study is the listing of personal network of significant individuals in the person’s life (convoy), and the replies to the nine questions on the Norbeck Social Support Scale in terms of Total Functional, Total Aid and Total Loss scales.

The instrument that measures perceived social support has three main variables: Total Functional, Total Network,
and Total Loss. The instrument is self administered with the average completion time of 10 minutes. The first part of the instrument (Total Functional) requests a listing of each significant person in the individual's life who supplies social support at any point in time. There is a space for the respondent to specify the category of relationship for each person from a list of categories presented in the instructions, including spouse or partner; family or relatives; friends; work or school associates; neighbors; health care providers; counsellor or therapist; minister/priest, etc. An example of the network list is provided in the instructions. The number in the network is determined by the number of individuals listed by the study subjects on the network list.

After listing the network members, respondents are asked to answer eight questions. Two questions are presented to measure each of the functional properties of social support: a) affect, b) affirmation and c) aid. In these, respondents are asked to rate each of their network members on a Likert scale in terms of help provided using (1 = not at all) to (5 = a great deal). Questions seven and eight relate to the duration of the relationship with the listed contacts and frequency of contacts. Question nine measures recent loss of important relationships during the past year (Total Loss). Scoring is directly from the
questionnaire. The mean score represents the ratings on each item for the entire network list.

Alpha internal consistencies calculated for the total score demonstrates ranges of .80 to .85 for the total score, and .85 to .92 for the individual scale alpha (Norbeck, Lindsey and Carrieri, 1981). Concurrent validity has been investigated (Norbeck, Lindsey and Carrieri, 1981) with simultaneous administration of a number of other measures of social support including the Social Support Questionnaire developed by Cohen and Lazarus (1973). The correlations between these scales ranged from .31 to .56. Construct validity was tested with the Profile of Mood State showing no significant relationships. In the present study total functional social support was seen to correlate significantly (r = .23, p < .02) with the seeking social support scale of the Ways of Coping Checklist.

The instrument has been widely used across various populations, with post-mastectomy patients (Feather and Wainstock, 1989), chronically ill adults (Primomo, Yates and Woods, 1990), female graduate students (Brandt and Weinert, 1981). However, the instrument has been developed and used with American populations but never with an Irish sample. A limitation may be that it does not reflect cultural differences. A normative database for employed adults is provided by Norbeck (Norbeck, 1981, 1985) and use
of the instrument is given in exchange for a copy of scores from different populations. In this study the scales used pertain to: network number (convoy) and most important individual in the network and the total functional amount of support given by that network.

**Demographic and disease related questionnaire**

Demographic and disease related data was collected on a questionnaire devised for the purpose. Information on age, marital status, occupation of both women and spouses, length of time since diagnosis, surgery performed, time since diagnosis, number and type of chemotherapy treatments, menopausal status and understanding of illness was collected from the study participants. Data was not collected on cancer type or disease extent at the time of treatment as agreement reached with medical staff did not include this information.

**Using the instruments in an Irish context**

There are no Irish studies reported in the literature in which researchers have used the questions constructed to measure Cognitive Appraisal, the Ways of Coping Checklist, the Norbeck Social Support Scale and the Psychosocial Adjustment to illness Scale. Because the instruments were developed, tested and primarily used in the United States
of America it was decided that the opinions of expert Irish nurses should be sought as to the appropriateness of use and that a pilot study with a small sample of Irish patients should also be undertaken.

Five Irish nurses who had studied for the oncology University certificate and who worked with cancer patients in outpatient facilities in large General Hospital were asked to comment on the content and to facilitate the pilot study. The comments received were positive. Some questions on the ways of Coping Checklist were thought to be repetitive and the length of the questionnaire was considered a possible deterrent to completion.

The patients who participated in the pilot study (n=7) were those attending for chemotherapy for bowel, lung and stomach cancer. They found little difficulty with the questions. In the closed question relating to cognitive appraisal, participants felt that they could choose one of the options offered to explain their predominant feeling. Further, they could use the open question to express any other feelings experienced. The Ways of Coping Checklist was found easy to complete but respondents commented on repetitiveness of some questions. There were no reported difficulties with completion of the Norbeck Social Support Scale or the Psychosocial Adjustment to Illness Scale. However, respondents did comment on the length of the
instruments and the difficulty that may be found with completion within one out-patient visit.

**Human subjects**

Permission to carry out the study was requested from the ethics committee of each hospital, from the Oncologist and Hospital Management. The request was processed directly by an oncologist physician in three of the hospitals included. It was processed directly by the Director of Nursing in one hospital and the researcher was requested to attend an interview with the Ethics Board of one hospital. In the latter a presentation was given based on the research instruments and study design. Participants in the study were given an explanation of the study by the oncology nurse/research assistant and asked for their participation. If agreeable to participate patients are asked to read the consent form and sign it. Patients are assured that if they did not wish to participate in this study that their care would not be compromised in any way. Participants were also encouraged to ask questions and they were told that they may withdraw at any time from the study.
CHAPTER 4
RESULTS

BACKGROUND INFORMATION

Data analysis included several sequential steps. Descriptive and graphic examination of subject responses were initially used to examine the data. During the study development three subgroups were considered to merit comparison and separate analysis. These were the threat appraisal, the harm loss and the challenge appraisal groups. During the data collection phase these three distinct groups emerged and it was possible to progress as planned. The questions asked at the outset of this study were:

1. Will the type of appraisal expressed by subjects significantly influence coping strategies used to deal with the diagnosis of breast cancer and cytotoxic chemotherapy treatment?

2. Is there a significant difference in the psychosocial adjustment to illness scores with respect to types of appraisal groups?

3. How, and to what degree, will coping strategy employed by the study subjects significantly influence psychosocial adjustment to illness scores in women with breast cancer?
4. How, and to what degree, will the strength of social support influence the coping strategy used by the study subjects?

5. How, and to what degree, will the level of social support influence psychosocial adjustment to illness?

6. In this sample of patients with breast cancer which of the variables will explain the greatest amount of variance in psychosocial adjustment to illness?

At the outset of the study the following hypotheses were defined:

H1a There will be no difference between the harm/loss, challenge appraisal and threat appraisal groups with respect to problem-focused scores on the Ways of Coping Checklist,

H1b There will be no difference between the harm/loss, challenge appraisal and threat appraisal groups with respect to the emotion-focused scores on the Ways of Coping Checklist,

H2 There will be no difference between the harm/loss, challenge and threat appraisal groups with respect to psychosocial adjustment to illness scores,

H3a There will be no difference between individuals who are problem-focused as indicated by the Ways of Coping Checklist and the emotive-focused groups with
respect to Psychosocial Adjustment to Illness scores,

H4a  There will be a positive correlation between levels of social support and problem-focused scores obtained on the Ways of Coping Checklist for subjects in the study,

H4b  There will be an inverse relationship between levels of social support and emotion-focused scores obtained on the Ways of Coping Checklist for subjects in this study,

H5a  There will be a correlation between levels of social support and scores obtained on the Psychosocial Adjustment to Illness Scale for subjects included in the sample.

Additional Hypotheses

In order to take full advantage of the data collected it was decided to formulate additional hypotheses. This was found necessary as it was felt that when the analysis using 2 subscales (emotion-focused and problem-focused) was done that further exploration in relation to the seven subscales of the ways of Coping Checklist might be productive. The additional hypothesis in relation to appraisal and coping became:
There will be no difference between the harm/loss, challenge-appraisal and threat appraisal groups with respect to scores for Confrontive, Distancing, Self-Control, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem Solving and Positive Reappraisal scales on the Ways of Coping Checklist.

For similar reasons additional hypotheses in relation to coping and psychosocial adjustment to illness became:

There will be a significant positive relationship between the individual coping strategies as expressed on the Ways of Coping Checklist with respect to total and subscale scores on the Psychosocial Adjustment to Illness scales.

Data analysis procedures

Statistical analysis was performed using the Statistical program for the SAS 6.04 (SAS Institute, Cary Worth, Carolina, USA, 1992). Data were analyzed using descriptive and inferential statistics. Frequency distributions, histograms, measures of central tendency, equality of variance and tests of skewness/kurtosis were used to examine the variables ranges, and especially to check for violations of statistical assumptions. Pearson's correlation coefficients and scatterplots were
used to examine relationships between coping, psychosocial adjustment, social support, demographic and personal variables. Of those who participated in the study all subjects completed the Appraisal questions, the Ways of Coping Checklist and the Norbeck Social Support Questionnaire. Two subjects did not complete the Psychosocial Adjustment to Illness Scale. Missing data was dealt with as suggested by the authors of the scale.

As there is no evidence in the literature that the personal variables of age, occupation, marital status and length of time since diagnosis made a difference to primary appraisal, coping or psychosocial adjustment to illness the relationship of these to the study variables were firstly analyzed. No significant correlations were found for the total scale scores and the variables then did not need to be controlled in the analysis.

The frequency with which each of the appraisal types were used was identified and then the sample was divided into three groups representing Harm/Loss, Anticipated Threat and Challenge groups. For the Ways of Coping Checklist group means and standard deviations were determined by subscale and for the total scale. Analysis of variance was performed to investigate the differences between mean scores for each of the three appraisal groups with respect to coping. For the Psychosocial
Adjustment to Illness Scale (PAIS) group means and standard deviations were determined by subscale and for the total scale. Analysis of variance was performed to investigate the differences between mean scores for the three appraisal groups with respect to Psychosocial Adjustment to Illness. Pearson product-moment correlations were used to investigate the relationships between coping and psychosocial adjustment to illness.

For the Norbeck Social Support Questionnaire (NSSQ) group means and standard deviations were determined for network support and for the total Functional Support Subscales. Correlations were used to explain the relationship between social support and coping and between social support and psychosocial adjustment to illness.

The results from this study are presented in several stages. First, sample characteristics are described. Secondly, results are reported by individual tests. Thirdly, each hypothesis is addressed. Descriptive and graphic presentation of the findings are given. Finally, the findings based on additional hypotheses are presented.
Sample Characteristics

The study convenience sample were recruited from five oncology outpatient departments attached to University-affiliated hospitals. The following table shows the number and percentage of participants from each site:

Table 1

Number of participants and percentage recruited to the study at each site

<table>
<thead>
<tr>
<th>Site</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
<td>18.6</td>
</tr>
<tr>
<td>2</td>
<td>23</td>
<td>26.7</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>20.9</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>12.9</td>
</tr>
<tr>
<td>5</td>
<td>18</td>
<td>20.9</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>

In each site a Consultant Oncologist Physician works with nurses in the outpatient treatment of patients with breast cancer. One physician cared for the patients in two sites (site 2 and 3). One of these sites was in the city of Dublin, while the other was in a country town some 30 miles from the city.

The chemotherapy treatment given was similar. For 97% of the sample it consisted of Cyclophosphamide, Methotrexate and 5-Fluorouracil (CMF). For other patients an additional drug was also used. Each patient
an additional drug was also used. Each patient attended for an outpatient appointment to receive the drugs once every 3 weeks. Patients attending the chemotherapy clinics were approached and invited to participate by a nurse specialist in each site. The purpose of the study, the nature of the questionnaires and the voluntary nature of participation were explained verbally and in writing. Subjects expressing a willingness to participate were given the study instruments to take home or complete in the clinic. Completed instruments were mailed back or hand-delivered at the next appointment.

Demographics

Sample demographics in relation to age, marital status, race and employment status are presented in table 2.
Table 2
Demographic Characteristics of breast cancer patients
Characteristics  N=86

<table>
<thead>
<tr>
<th>Age</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>26 - 72 years</td>
</tr>
<tr>
<td>M</td>
<td>43.8</td>
</tr>
<tr>
<td>SD</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Frequencies and percentages

<table>
<thead>
<tr>
<th>Marital status</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>67</td>
<td>80</td>
</tr>
<tr>
<td>Single</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Widowed</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>86</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed outside home</td>
<td>26</td>
</tr>
<tr>
<td>Occupied within the home</td>
<td>60</td>
</tr>
</tbody>
</table>

From Table 2 it can be seen that patients who participated in the study ranged in age from 26 to 72 years (M 43.8, SD=7.9). Only three individuals were over 56 years old. Sixty seven subjects were married (80%), 9 women were single and another 2 were separated. Three subjects were widowed and a further 3 divorced. All women were white and Irish. Seventy percent of the sample stated that they were housewives and were not working outside of the home. In examining the data
presented by women who worked outside of the home it was
found that 11% were working as lower professionals and 9% as intermediate non-manual workers. Lesser numbers were
employed in all other work categories as defined by the
Irish Census Office.

Disease-related characteristics

Table 3 shows disease-related characteristics. Those reported are length of time since diagnosis, treatment status, surgery performed and type of surgery, number of chemotherapy treatments received before completion of the instruments and type of chemotherapy being given.
Table 3
Disease characteristics of subjects

Length of time since diagnosis

<table>
<thead>
<tr>
<th>Range</th>
<th>4 - 40 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>18 weeks</td>
</tr>
<tr>
<td>SD</td>
<td>8 weeks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment status</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial treatment</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>

Surgery

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>75</td>
<td>88</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Missing data</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Type of surgery

<table>
<thead>
<tr>
<th>Type of surgery</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastectomy</td>
<td>51</td>
<td>69</td>
</tr>
<tr>
<td>Lumpectomy</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>Segmentectomy</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Missing data</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

No of chemo treatments

<table>
<thead>
<tr>
<th>Range</th>
<th>2-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>6</td>
</tr>
<tr>
<td>SD</td>
<td>3</td>
</tr>
</tbody>
</table>

Type of chemotherapy

<table>
<thead>
<tr>
<th>Type of chemotherapy</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMF</td>
<td>70</td>
<td>98</td>
</tr>
<tr>
<td>5FU/Leukoverin</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Missing data</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

Length of time since diagnosis and treatment status

The time since diagnosis varied from 4 to 40 weeks with a mean of 18 weeks. However, the majority of women (94%) were within 30 weeks of diagnosis. The variation in time since diagnosis occurred because women completed
the data collection instruments at the time of 3rd or subsequent chemotherapy treatment and this time varied.

**Treatment status**

All eighty six of the women were having chemotherapy for the first time. No women were included who were receiving a second or subsequent treatment program.

**Surgery**

Eighty eight percent (N=75) of the women had surgery. Of these, 69% had a mastectomy, 17% a lumpectomy and 9% a segmentectomy.

**Number and type of chemotherapy treatments**

While all participants were receiving chemotherapy they were at different treatment stages. The number of treatments at time of testing ranged from 2 to 14 with a mean of 6 and a standard deviation of 3. However, the majority (87%) were within the range of 2 to 8 treatments. Ninety eight percent of the sample were receiving the Cyclophosphamide, Methotrexate and 5-Fluorourcil (CMF) medication regime while the remainder were receiving other drugs as well as CMF.
Summary

In summary, this sample of breast cancer women were predominantly married (80%) and had a mean age of 43.8 years. The majority (70%) reported their employment status as that of housewife. The time since diagnosis ranged from 4 to 40 weeks with a mean of 18 weeks and a standard deviation of 8 weeks. Eighty eight percent of the women had surgery with the majority (69%) having had a mastectomy prior to testing. All women were Irish, newly diagnosed and undergoing a first treatment course of chemotherapy. The number of chemotherapy treatments ranged from 2 to 14 with a mean of 6 and a standard deviation of 3. Cyclophosphamide, Methotrexate and 5-Fluorourcil (CMF) was the most common type of treatment being administered.

Appraisal of the situation

In this research the first question asked related to how women with breast cancer appraised having cancer and receiving chemotherapy. Two questions were used to elicit this information. The closed question was based on Lazarus and Folkman’s work on appraisal and coping. It was phrased "for many people there is one feeling about the illness and treatment which predominates. For you, which of the following represents your predominant
appraisal (the feeling you have most often) of your present situation. The choices in the closed answer format were "Harmful Loss", "Anticipated Threat", or "Challenge". Table 4 shows the results.

Table 4
Situation Appraisal

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmful Loss</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Anticipated Threat</td>
<td>31</td>
<td>37</td>
</tr>
<tr>
<td>Challenge</td>
<td>47</td>
<td>53</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>

The greater number of respondents (N=47) reported that the predominant feeling experienced was one of "challenge". Thirty one individuals reported feelings of "Anticipated Threat" and 8 individuals felt that the situation represented one of "Harmful Loss". In the second question subjects were also given an opportunity to describe in their own words how they felt about being diagnosed with a disease which requires chemotherapy and frequent treatment. Ninety percent of participants chose free text to comment further on feelings experienced. Fifty percent of the comments contained the word "shock". Examples of statements were: "I was initially shocked and angry that this could happen to me and more especially to
diagnosis was shock"; "...Initially I was shocked. The feeling lasted about one day and the operation the following day made it easier to come to terms with the diagnosis"; "... I was totally shocked and devastated." and "...At the beginning shock, fear, tears and I felt that God had forgotten about me". Other comments related to feelings of anger "I feel angry that my life span has been shortened", "I feel angry and sometimes sorry for myself...", and "... I feel angry that God should do this to me when I have three young children to look after". Lesser numbers of respondents wrote about feelings of fear, devastation, fright, confusion, and anxiety.

**Coping Responses**

Coping was measured by the Ways of Coping Checklist. Eighty six completed instruments were returned and analyzed. The research objective of determining predominant coping strategies used was addressed and yielded the data depicted in tables 5 and 6.
Table 5

Mean and standard deviations on the coping scale and subscales on the Ways of Coping Checklist

<table>
<thead>
<tr>
<th></th>
<th>Total group (N=86)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Problem-focused coping</td>
<td>1.2</td>
</tr>
<tr>
<td>Emotion-focused coping</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Table 5 presents the results pertaining to the mean score and standard deviation attained for problem-focused and emotion-focused coping strategies. From this table it can be seen that both coping strategies were used by the respondents in the study. There are no statistical significant differences between the scores of both however. Inter and intra individual scores were checked and showed that individuals used both coping strategies in almost equal amounts.

Based on the mean score it appears that for this sample of breast cancer women emotion-focused strategies were used more often than problem-focused strategies.

To investigate further the use of individual coping subscales the mean and standard deviations for each subscale were also examined. These results are presented in Table 6.
Table 6 presents the overall mean score and standard deviation for each of the 8 subscales of the Ways of Coping Checklist. High scores indicate more frequent use of the coping strategy. It can be seen that the individual strategies used most often were Seeking Social Support, Distancing, Positive Reappraisal, Planful problem solving, Self Controlling and Escape-Avoidance.

Seeking Social Support was the most commonly used coping strategy. The actions which were described were "talked to someone to find out more about the situation" (Item mean score 2.2 (max 3) rank 3 of 67); "Accepted sympathy and understanding from someone" (Item mean score 2.0, Rank 6 of 67); and "talked to someone about how I was feeling" (Item mean score 2.0, Rank 8 of 67).
Positive reappraisal was the second most common coping strategy. The item "rediscovered what is important in life" was the item most often used by respondents to describe this strategy (Item mean 2.3 (max 3) rank 1 of 67 items). Distancing was the third most frequently used coping strategy. The action most often taken in this domain was "looked for a silver lining, so to speak, tried to look on the bright side of things" (item mean score 2.1, Rank 5 of 67).

The forth most common coping strategy was Self Controlling. The action most often taken was "I tried to keep my feelings from interfering with other things too much" (Item mean score 2.0, Rank 8 out of 67).

The least used strategy was accepting responsibility (realized I brought the problem on myself; promised myself that things would be better next time; Criticized or lectured myself and apologized or did something to make up).

**Summary**

For this sample of women with breast cancer both problem-focused strategies and emotion-focused strategies were used. Slightly higher mean scores were reported for emotion-focused strategies. Examination of individual subscale mean and standard deviation scores showed that the strategy used most often was seeking social support.
Psychosocial Adjustment to Illness

The Psychosocial Adjustment to Illness Scale (PAIS) provides information about global adjustment as well as information about adjustment in specific psychosocial domains. The mean response on the scale which ranges from 28 (extremely well adjusted) to 76 (poorly adjusted) was first computed. The mean score for the individual subscales on the PAIS was also calculated. Results can be seen on Table 7.

Table 7
Psychosocial Adjustment to Illness for Scale Domains and Total PAIS Adjustment

<table>
<thead>
<tr>
<th>Domain</th>
<th>Patients (n=86)</th>
<th>T Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Health Care Orientation</td>
<td>53.4</td>
<td>8.8</td>
</tr>
<tr>
<td>Vocational Environment</td>
<td>58.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Domestic Environment</td>
<td>51.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Sexual Relations</td>
<td>54.4</td>
<td>8.3</td>
</tr>
<tr>
<td>Extended Family Relations</td>
<td>57.5</td>
<td>9.2</td>
</tr>
<tr>
<td>Social Environment</td>
<td>51.8</td>
<td>14.0</td>
</tr>
<tr>
<td>Psychological Distress</td>
<td>58.2</td>
<td>10.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>54.8</td>
<td>11.7</td>
</tr>
</tbody>
</table>

The scores obtained with respect of the Psychosocial Adjustment to Illness Scale ranged from 23 to 75 with a Total mean score of 54.8 and a standard deviation of 11.7. The scores for the subscales were all within the 50-60 range.
This sample indicated fairly high scores on the PAIS based on overall norms (50) for control groups. This indicated a moderate amount of psychosocial problems. The domains most affected were Vocational Environment (M=58.4), Psychological Distress (M=58.2) and Extended Family Relationships (M=57.5). The scale least affected was Domestic Environment (M=51) and Social Environment (M=51.8).

Social Support

Social support was measured by the Norbeck Social Support Scale. Firstly, each participant was asked to list the number of individuals in their personal network of social support. The minimum number of individuals listed was 1 with the maximum of 24, a mean of 11.5 and a standard deviation of 6.2. The person most important in the network for 68 participants (79%) was spouse or husband, for 12 individuals (14%) it was a family member, 5 individuals (6%) a friend and for 1 (1%) individual a counsellor/therapist was the most important social support listed. Table 8 presents the means, and standard deviations for scales within the Norbeck Social Support Questionnaire and for the total scale.
Table 8
Means, Standard deviations, Range of scores for items on the Norbeck Social Support Scale

<table>
<thead>
<tr>
<th>Domain</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affirm 1</td>
<td>50.4</td>
<td>27.7</td>
<td>5-120</td>
</tr>
<tr>
<td>Affirm 2</td>
<td>50.3</td>
<td>30.9</td>
<td>5-153</td>
</tr>
<tr>
<td>Affect 1</td>
<td>43.7</td>
<td>24.5</td>
<td>5-115</td>
</tr>
<tr>
<td>Affect 2</td>
<td>48.1</td>
<td>27.4</td>
<td>5-120</td>
</tr>
<tr>
<td>Aid 1</td>
<td>47.0</td>
<td>27.2</td>
<td>5-126</td>
</tr>
<tr>
<td>Aid 2</td>
<td>40.2</td>
<td>20.7</td>
<td>5-109</td>
</tr>
<tr>
<td>Total Functional (1-6)</td>
<td>279</td>
<td>152</td>
<td>30-686</td>
</tr>
<tr>
<td>Network</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number in network</td>
<td>11.5</td>
<td>6.2</td>
<td>1-24</td>
</tr>
</tbody>
</table>

From Table 8 it can be seen that the Total Functional Social Support received by the sample had a mean of 279 and a standard deviation of 152. The overall range described as possible is 30-686. The network numbers ranged from 1-24 with a mean of 11.5 and a SD of 6.2.
Primary hypothesis:

Relationship between Cognitive Appraisal and Coping

Research question 1 asked: Will the type of appraisal expressed by subjects significantly influence coping strategies used to deal with the diagnosis of breast cancer and cytotoxic chemotherapy treatment?. Two null hypotheses were formulated. These were:

H1a There will be no difference between the harm/loss, challenge appraisal and threat appraisal groups with respect to problem-focused scores on the Ways of Coping Checklist.

H1b There will be no difference between the harm/loss, challenge appraisal and threat appraisal groups with respect to the emotion-focused scores on the Ways of Coping Checklist.

To test the hypothesis and to demonstrate differences among the three group means in respect to the coping scales an analysis of variance was performed.

Table 9 presents the analysis.

Table 9

Analysis of variance: Appraisal and Coping Scales

<table>
<thead>
<tr>
<th>Coping Scales</th>
<th>F Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem-focused coping</td>
<td>2.96</td>
<td>0.06</td>
</tr>
<tr>
<td>Emotion-focused coping</td>
<td>0.00</td>
<td>0.99</td>
</tr>
</tbody>
</table>
Results show that there were no significant differences between the harm/loss, challenge appraisal and threat appraisal groups with respect to problem-focused coping scores on the Ways of Coping Checklist. Hypothesis 1a was supported.

Results also show that there were no statistically significant difference between the harm/loss, challenge appraisal and threat appraisal groups with respect to the emotion-focused coping scores on the Ways of Coping Checklist. Hypothesis 1b was supported.

**Relationship between Appraisal, and Psychosocial Adjustment to Illness**

The second research question asked if there was a significant difference in the Psychosocial Adjustment to Illness scores with respect to types of appraisal groups?

To answer this question and to investigate the relationship between appraisal and psychosocial adjustment to illness the following null hypothesis was formulated.

**H2** There will be no difference between the harm/loss, challenge and threat appraisal groups with respect to Psychosocial Adjustment to Illness scores

To test hypothesis 2 an analysis of variance was used to assess the differences in mean scores between the
appraisal groups. This analysis is presented on Table 10.

**Table 10**

**Analysis of variance: Appraisal and Psychosocial Adjustment to Illness**

<table>
<thead>
<tr>
<th>PAIS</th>
<th>Patients (n=86)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAIS</td>
<td>F Value  p Value</td>
</tr>
<tr>
<td>Total PAIS</td>
<td>3.57  0.03</td>
</tr>
</tbody>
</table>

There were significant differences (F = 3.57, p < .03) between the three appraisal groups with respect to the total scores on the Psychosocial Adjustment to Illness scale. A t Test was used to identify the differences between mean scores for the three appraisal groups. Results showed little difference between the harm/loss and anticipated threat groups. The challenge appraisal group was significantly different from the harm/loss and the anticipated threat group. Hypothesis 2 was supported. To understand better the differences between appraisal groups with respect to the total score in the PAIS, an analysis of variance was done on the subscales and is presented on Table 11.
Table 11

Analysis of variance: Appraisal and Psychosocial Adjustment to Illness

<table>
<thead>
<tr>
<th>PAIS Scales</th>
<th>F Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care Orientation</td>
<td>1.21</td>
<td>0.30</td>
</tr>
<tr>
<td>Vocational Environment</td>
<td>0.98</td>
<td>0.38</td>
</tr>
<tr>
<td>Domestic Environment</td>
<td>1.68</td>
<td>0.19</td>
</tr>
<tr>
<td>Sexual Environment</td>
<td>2.70</td>
<td>0.07</td>
</tr>
<tr>
<td>Extended family Relations</td>
<td>0.22</td>
<td>0.80</td>
</tr>
<tr>
<td>Social Environment</td>
<td>5.17</td>
<td>0.007</td>
</tr>
<tr>
<td>Psychological Distress</td>
<td>1.68</td>
<td>0.19</td>
</tr>
</tbody>
</table>

This showed the challenge group to be significantly (p<.007) different statistically from the other two groups in relation to the subscale Social Environment. This finding shows that the challenge appraisal group were significantly better adjusted in terms of the social environment scale in the PAIS.

Relationship between Coping and Psychosocial Adjustment to Illness

The third research objective of the study was to examine the relationship between Coping and Psychosocial Adjustment to Illness. The hypothesis to be tested was:

H3a There will be no relationship between individuals who use problem-focused coping (as indicated on the
Ways of Coping Checklist) and those who use emotion-focused coping with respect to Psychosocial Adjustment to Illness Scores. Correlation coefficients were used to examine the relationship. There were no statistically significant associations between either problem-focused (r=−.04, p<.65) or emotion-focused (r=+.16, p<.12) coping strategies and the total PAIS score. Hypothesis 3a was supported.

Relationship between Social Support and Coping

Research question 4 asked how and to what degree the strength of social support as measured by the Norbeck Social Support Scale influences the coping strategy used by the study subjects? The hypotheses derived from this question were:

H4a There will be a positive correlation between levels of social support and problem-focused scores obtained on the Ways of Coping Checklist for subjects in the study,

H4b There will be an inverse relationship between levels of social support and emotion-focused scores obtained in the Ways of Coping Checklist for subjects included in this study.
To test hypothesis 4 correlation statistics were used. Results showed the correlation between emotion-focused coping and total functional social support as non significant ($r = .03$, $p < .73$). Further, there was no significant relationship between levels of social support and problem-focused coping scores ($r = -.04$, $p < .67$). Neither hypotheses 4a or 4b was supported.

**Relationship between social support and psychosocial adjustment to illness**

Question 5 addresses the relationship between social support and Psychosocial Adjustment to illness. It asks how and to what degree will the level of social support influence psychosocial adjustment to illness? The hypothesis derived from this question was:

**H5:** There will be a positive relationship between levels of social support and scores obtained on the Psychosocial Adjustment to Illness Scale for subjects included in the sample.

To test hypothesis 5 and the relationship between social support and psychosocial adjustment to illness correlation statistics were used. Results showed no statistically significant relationships ($r = -.04$, $p < .71$). The hypothesis therefore was rejected.
Factors which explain Psychosocial Adjustment to Illness

The final question addressed was:

6. In this sample of patients with breast cancer which of the variables will explain the greatest amount of variance in psychosocial adjustment to illness?

A multiple regression analysis was performed to empirically explain psychosocial adjustment in women with breast cancer and the relative importance of the variables in explaining adjustment. Using psychosocial adjustment to illness a backward elimination procedure was performed. The factors which explained the variance in Psychosocial Adjustment to Illness are shown in Table 12.
Table 12

Regression analysis on Psychosocial adjustment to illness

<table>
<thead>
<tr>
<th>Variables</th>
<th>R²</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping (Self-control)</td>
<td>.03</td>
<td>.08</td>
</tr>
<tr>
<td>Coping (Escape-avoidance)</td>
<td>.22</td>
<td>.00</td>
</tr>
<tr>
<td>Time since diagnosis</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>Social support (Affirm 1)</td>
<td>.01</td>
<td>.05</td>
</tr>
<tr>
<td>Social support (Affirm 2)</td>
<td>.02</td>
<td>.06</td>
</tr>
<tr>
<td>Social support (Affect 2)</td>
<td>.04</td>
<td>.005</td>
</tr>
<tr>
<td>Social support (Aid 2)</td>
<td>.02</td>
<td>.01</td>
</tr>
</tbody>
</table>

Overall 38% of the variance in psychosocial adjustment to illness was explained by 2 emotion-focused coping scales (self-control and escape-avoidance), 4 social support scales and time since diagnosis. The factors which explained the variance in psychosocial adjustment to illness were: self-controlling coping strategies (3%), escape-avoidance coping strategies (22%), time since diagnosis (4%) and social support.

Additional Hypothesis: Relationship between Cognitive Appraisal and Coping

A additional hypothesis was added to explore the relationship between appraisal and coping. This was done in an effort to explain the relationship between appraisal choice groups and scores achieved on the subscales on the Ways of Coping Checklist. The additional hypothesis was:
H1c There will be no difference between the harm/loss, challenge appraisal and threat appraisal groups with respect to scores for Confrontive, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem Solving and Positive Reappraisal on the Ways of Coping Checklist.

An analysis of variance was performed to test this hypothesis. Findings are presented in Table 13.

Table 13:

Analysis of variance: Appraisal and Coping Scales

<table>
<thead>
<tr>
<th>Coping Scales</th>
<th>F Value</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Confrontive</td>
<td>2.11</td>
<td>0.12</td>
</tr>
<tr>
<td>2 Distancing</td>
<td>0.10</td>
<td>0.90</td>
</tr>
<tr>
<td>3 Self-Controlling</td>
<td>0.37</td>
<td>0.69</td>
</tr>
<tr>
<td>4 Seeking Soc.Supp.</td>
<td>0.56</td>
<td>0.21</td>
</tr>
<tr>
<td>5 Accepting Resp.</td>
<td>0.97</td>
<td>0.38</td>
</tr>
<tr>
<td>6 Escape-Avoidance</td>
<td>3.58</td>
<td>0.03</td>
</tr>
<tr>
<td>7 Planful Prob.Solving</td>
<td>0.81</td>
<td>0.44</td>
</tr>
<tr>
<td>8 Pos Reappraisal</td>
<td>0.43</td>
<td>0.65</td>
</tr>
</tbody>
</table>

The data shows that there was a significant difference (p<.03) between the groups with respect to the scores on the Escape Avoidance Scale of the Ways of Coping Checklist. Using a t-test the challenge appraisal group was found to be statistically significantly different (t=5.17, p<.007) from the anticipated threat
and harm/loss groups. Hypothesis 1C was not supported.

Additional Hypothesis: Relationship between Coping and Psychological Adjustment to Illness

An additional Hypothesis was formulated to test the relationship between individual coping strategies and Psychosocial Adjustment to Illness. This hypothesis stated:

H3b There will be significant relationships between the individual coping strategies of confronting, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful-problem solving and positive reappraisal with respect to total and subscale scores on the Psychosocial Adjustment to Illness scale.

Correlation coefficients were used to investigate these relationships. Results showed that higher scores on the PAIS (less psychosocial adjustment) were related to more escape avoidance behaviour ($r = .39$, $p < .000$). Hence the higher the Escape Avoidance the higher the PAIS score and the lower the adjustment. In contrast, higher scores on the PAIS were statistically significantly related to less use of the coping strategy of distancing ($r = -.21$, $p < .04$).
Further, the Escape-Avoidance scale of the WCC was found to correlate significantly with the Health Orientation Scale ($r=.29$, $p<.006$), Domestic Scale ($r=.36$, $p<.000$), Sexual Relations Scale ($r=.29$, $p<.01$), Extended Family Scale ($r=.36$, $p<.000$), Social Environment Scale ($r=.42$, $p<.000$), and Psychosocial Distress Scale ($r=.29$, $p<.006$). Thus it appears that persons who use Escape-Avoidance as a coping mechanism experience more problems with respect to psychosocial adjustment in the domains of Health Orientation, Domestic Problems, Sexual Relations, Extended Family, Social Environment, and Psychosocial Distress.

**Demographic and Medical Variables**

Pearson's correlation statistics were used to investigate the relationship between demographic and medical variables and the variables of coping, psychosocial adjustment to illness and social support. Age was found to be related ($r=.22$, $p<.05$) to the sexual relations subscale on the PAIS. Time since diagnosis was significantly related to the sexual relations subscale on the PAIS ($r=.24$, $p<.04$) and inversely related to social support ($r=-.28$, $p<.01$). The number of chemotherapy treatments was significantly related to social support ($r=-.26$, $p<.01$) and to the self-controlling subscale in
the Ways of Coping Checklist ($r=-.23$, $p<.02$)

**Overall summary**

In summary, the women with breast cancer who comprised the sample for this study were predominantly married with an mean age of 43.8 years. The majority worked in the home. The time since diagnosis ranged from 4 to 40 weeks with a mean of 18 weeks. Eighty eight percent of the women had surgery with the majority (72%) having had a mastectomy prior to testing. All women were white, Irish and receiving treatment with chemotherapy for the first time. For the sample the number of chemotherapy treatments ranged from 2 to 14 with CMF being the most common type of treatment administered.

The majority of the women (53%) found having cancer for which they were receiving cytotoxic chemotherapy a challenge. Lesser numbers found the situation one of anticipated threat (37%) and harm/loss (10%). Both problem-focused and emotion-focused coping strategies were used by the women with a slightly greater use of the emotion-focused strategies reported. The coping strategies used most often were seeking social support, positive reappraisal and distancing. The least used strategies were accepting responsibility and confronting the situation. Results showed that there were no
significant differences between the harm/loss, challenge appraisal and threat appraisal groups with respect to problem-focused or emotion-focused scores on the Ways of Coping Checklist. There were statistically significant differences (p=.03) between the groups with respect to the scores on the Escape-Avoidance subscale of the ways of Coping Checklist.

The women reported some difficulties with Psychosocial Adjustment to Illness. The domains affected were Psychological Distress, Vocational Environment, Extended Family Relations, and Sexual Relations. The least affected scales were Domestic Environment. When appraisal groups were considered there were differences between the appraisal groups with respect to Psychosocial Adjustment to Illness.

The Challenge Appraisal Group were significantly different in terms of the total score on the PAIS and in respect of the Escape-Avoidance scale (p=.007). However, the results should be treated with caution. Two of the groups contained few participants: the harm/loss group (N=8), and the anticipated threat group (N=31).

Social support network numbers ranged from 1 to 24 with a mean of 11.5 and a SD of 6.2. The person most important in the network for 68 participants (79%) was spouse or husband, for 12 (14%) it was a family member,
for 5 individuals (6%) a friend and for 1 (1%) individual a counsellor/therapist was the most important social support listed. Results regarding the relationship between social support and coping show no significant relationships.

When the relationship between social support and psychosocial adjustment to illness was investigated no significant relationships were found. However, total Functional Social Support was seen to be correlated positively and significantly ($r=.23, p=.02$) with the seeking social support coping scale on the Ways of Coping Checklist.

Finally, variance in Psychosocial Adjustment to Illness was explained by the Escape Avoidance subscale on the Ways of Coping Checklist (14%) the use of Distancing as a coping strategy (6%), the cognitive appraisal strategy of challenge (6%), and time since diagnosis (4%).
CHAPTER 5:  
DISCUSSION  

The aim of this study was to provide information to help Irish nurses understand cancer patients better and as a consequence improve the nursing care provided to these patients. The study used as a framework the theory of psychological stress and coping developed by Lazarus and his colleagues (Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen, 1986, Lazarus, 1966, Lazarus, Averill and Opton, 1970, Lazarus and De Longis, 1983, Lazarus and Folkman, 1984, Coyne and Lazarus, 1980). Using the model the study examined cognitive appraisal of cancer and chemotherapy, the coping responses used, social support available, and psychosocial adjustment to illness in Irish breast cancer women receiving chemotherapy.  

Having reviewed the literature it was concluded that certain gaps in knowledge existed which this research attempts to fill. There is no Irish nursing research with women experiencing breast cancer and other Irish health care research has not addressed the topic of interest with Irish women. While cancer has been shown to be a stressful event little empirical research has
been reported which investigated primary cognitive appraisal responses, coping strategies, psychosocial adjustment to illness and social support available. There is also no study reported in the literature which investigates all of these variables in one study. This study has contributed to knowledge by providing information previously non existent regarding breast cancer women in general and Irish women in particular.

This Chapter presents a discussion and interpretations of the research findings and is divided into 5 main parts. It is organized around points rather than process and the major section headings refer to the concepts investigated: appraisal, coping, psychosocial adjustment to illness and social support to illness. Information is also presented which helps to evaluate the evidence for the model used as a framework for the study.

The findings are discussed within the context of the role of women in Ireland and comparison made with previously published research results. Limitations of the study are outlined and difficulties in conducting the study addressed. Clinical and research implications of the findings are discussed throughout this Chapter and also are summarized.
Cognitive Appraisal, Coping Responses, Social Support and Psychosocial Adjustment in Irish Women with Breast Cancer Receiving Cytotoxic Chemotherapy.

Appraisal

Cognitive appraisal is a process whereby the individual evaluates whether the event is relevant to his/her well-being and whether there is anything at stake in the encounter. The first question in this research related to how women with breast cancer appraised having cancer and receiving chemotherapy. Forty seven women (53%) reported that the predominant feeling experienced was one of "challenge". Thirty one individuals (37%) reported "Anticipated Threat" as the commonest feeling and 8 individuals (10%) felt that the situation represented a "Harmful Loss". These results show a diversity of response which is consistent with the theory and research of Folkman and Lazarus (1985).

Similar findings were also reported by Frank-Stromborg (1989), Frank-Stromborg et.al. (1984), and Pettingale et.al. (1979). Frank-Stromborg et.al. (1984) through interviews found that 27% of 340 mixed cancer patients reported feelings of challenge. In a further study of 461 male and female mixed cancer patients within 6 months of diagnosis the same researcher (Frank-Stromborg et al, 1989) found that 45% of the sample reported confrontive
behaviour. However, in these studies the interview was used exclusively to determine appraisal strategies used.

According to the theory of Folkman and Lazarus (1984) the challenge group can be considered as those who desire mastery or control over the situation. In the Irish culture where religious beliefs and family norms are strong, people are admired for maintaining a stiff upper lip in the face of adversary. The results therefore are not surprising.

However, not all of the women felt that the situation was one of "challenge". Thirty seven percent of the sample reported feelings of "Anticipated Threat" or foreseen danger. Just 8 individuals reported feelings of a "Harmful Loss". Given the amount of information provided through the media regarding breast cancer it is not surprising that a large percentage of the sample anticipated danger. On site visits women expressed fears of recurrence to the researcher and asked if they should seek a second medical opinion regarding their condition, or investigate alternative treatment strategies which might help. They cited friends whom they had known to have died from the disease but then immediately switched to expressions of hope when profiling public figures including two prominent women presently in politics who appear to have recovered fully from the disease. In
those short impromptu and unplanned conversations with
the women it appeared that feelings of appraisal may
fluctuate yet their predominant appraisal at the point in
time of data collection was that reported.

When the research commenced, a concern was that the
women would not find the appraisal choices presented
appropriate and therefore would leave the section
incomplete. However, all women completed the closed
choice question and there were no reported difficulties
in relation to completion. While the question was based
on qualitative research work of Folkman and Lazarus
(1985) the process of posing a closed choice question had
never been used before with women with breast cancer. It
is possible that individuals felt obliged to choose one
of the options and that there were other aspects of
appraisal not captured. However, there is a sound
theoretical rationale for the question and as such it can
be assumed to be valid.

Subjects were also given an opportunity to describe
in their own words how they felt about being diagnosed
with a disease which requires chemotherapy and having to
attend hospital for frequent treatment. Ninety percent
of participants choose free text to comment further on
feelings experienced. Fifty percent of the comments
contained the word "shock". Examples of statements were:
"I was initially shocked and angry that this could happen to me and more especially to my husband and family", "... the initial reaction to the diagnosis was shock", "Initially I was shocked. The feeling lasted about one day and the operation the following day made it easier to come to terms with the diagnosis", "I was totally shocked and devastated" and "At the beginning shock, fear, tears and I felt that God had forgotten about me". Other comments related to feelings of anger "I feel angry that my life span has been shortened", "I feel angry and sometimes sorry for myself", and "I feel angry that God should do this to me when I have three young children to look after". Lesser numbers of respondents wrote about feelings of fear, devastation, fright, confusion, and anxiety.

The self reporting of shock as a primary feeling is similar to the results of a Finish study (Krause, 1991) which reported that 68% of the 123 mixed cancer sample reported feelings of shock when confronted with the diagnosis of cancer. Further studies with American samples also show similar findings (Cantor, 1978, Frank-Stromborg, 1989, Holland, 1976, Mishel et al, 1984, Weisman, Worden and Sobel, 1980).

An interesting finding was that the feelings expressed in the open questions did not emulate those
expressed in the forced choice question on cognitive appraisal. However, the differences in answers between forced choice and free text could be caused by both questions being interpreted in different ways and it is the researchers contention that this is what happened. Although the free text question asked patients to describe in their own words how they felt about being diagnosed with a disease which requires chemotherapy on an outpatient hospital basis, the initial reaction the moment the doctor told the patient that cancer was diagnosed may have been described. A possible explanation might be that the most powerful emotional experience in relation to the diagnosis was shock. This consequently predominated the associated emotions recalled and the open type question gave women who had recently being diagnosed an opportunity to write down these feelings.

The subjective responses to the open choice question seem to cast doubt on the validity of the grouping of responses into three categories as done in the forced-choice question. However, without qualitative data based on interview to confirm that both questions were interpreted and answered similarly, it is proposed that the forced-choice question which is based on theory is probably as good as any other to measure primary
appraisal responses. In further studies of this nature an interview with participants will be helpful to confirm or refute the contention that both questions were interpreted differently.

At the beginning of this study the researcher proposed that the word cancer is not used very often when individuals discuss their diagnosis or treatment for cancer in Ireland. Instead words such as "tumor" and "growth" are found in the language which describes treatment or disease-related facts. With this in mind the word cancer was not used by the researcher when constructing the questionnaire or writing to individual participants. The third question which explored appraisal asked the patient to indicate their understanding of the disease. When the free text data was examined it was found that only 33% of respondents wrote the word "cancer". Comments included "my understanding of the illness is that I am one of the lucky ones....my tumor was localized and I have been told that this treatment is precautionary...", and "I know very little and in a way I do not want to know ... I just want to get on with my life....". Overall the majority of the women did not refer to the disease as cancer and some described their understanding of the illness in an denying or avoidance manner. The initial expectation of
both researcher and oncology nurses working with these patients was confirmed. Given the amount of publicity cancer gets in the media and the work of the Irish Cancer Society in promoting education and health seeking behaviour it is difficult to understand why the word "cancer" may still have connotations which do not allow free expression. Perhaps this is due to the fact that earlier treatments (1960-1970) were given in "Cancer hospitals" where treatment successes were poor and being referred to such facilities implied hopelessness. Another possible interpretation is that women use escape-avoidance behaviour and do not wish to confront the significance of the disease.

The results pertaining to cognitive appraisal present new knowledge. Firstly, the majority of Irish women with breast cancer perceive their situation as one of "challenge". Lesser numbers perceive the situation as "anticipated threat". Based on theory a method using a forced-choice question was used to elicit these appraisal responses. This method was exploratory and requires further research in relation to validity and reliability. When women describing in free text how they felt about being diagnosed with cancer the predominant feeling reported was that of "shock".
Coping Responses

The literature reviewed shows that little empirical research has been reported on the subject of coping with cancer. Approaches to measuring coping have differed and have been predominantly through interview. Only two studies exist which used a valid and reliable instrument to measure coping responses and no existing study used the Ways of Coping Checklist. This study contributes to knowledge by using a well known and validated coping scale. As there are no Irish studies which report findings relating to coping methods employed by Irish women in a stressful situation the study is particularly pertinent to Irish nursing.

Coping responses help to manage demands placed on an individual due to stressful events. In coping the individual evaluates whether anything can be done to overcome or prevent harm or to improve prospects (Folkman et al., 1986). Results show that both problem-focused and emotion-focused coping strategies were used by the sample. However, emotion-focused coping responses were used slightly more often. The findings that both problem and emotion-focused coping strategies co-exist and are used to manage stressful situations agree with results from a study of stressful encounters in middle aged men and women, (Folkman and Lazarus, 1980) and research
pertaining to how college students cope with examination stress (Folkman, et al, 1986).

The seemingly contradictory forms of coping used suggest that individuals during the course of a stressful encounter alternate the use of coping strategies. Based on their research Folkman and Lazarus (1984) propose that problem-focused coping is used more often in encounters that were appraised as changeable and emotion-focused coping in encounters seen as unchangeable. As the women in this study used slightly more emotion-focused coping strategies it could be suggested that they saw the situation as unchangeable, a high-stake situation, or one in which they had few options.

Lazarus and Folkman (1984) suggested that when levels of stress increase greatly, the individual’s ability to perform problem-focused coping diminishes. Thus the individual reliance on emotion-focused coping increases. It is interesting to note that at the commencement of the study doctors and nurses involved in this research commented on their perception relating to high stress levels in patients. They suggested that stress be studied in parallel with coping. The stress which doctors and nurses reported as seen in patients did not alone pertain to their disease but to other daily, social, marital, and family stressors such as: poor
marital relationships and the lack of divorce and family legislation, children leaving school and home, or being middle aged and unemployed or not working outside of the home. Further research on the topic of coping with breast cancer may benefit from a concurrent investigation of patient stress and the reasons for this stress.

When particular domains of coping were investigated the strategies used most often were seeking social support, positive reappraisal, distancing, and planful problem solving. The fact that subjects used the coping strategy of seeking social support provided limited support for the ideas that informational, material, and emotional support are sought in response to the stressful event experienced. During this study individuals could turn to family, friends and health-care professionals for social support. However, seeking social support is defined by Folkman and Lazarus (1984) as having components of both emotion-focused and problem-focused coping strategies. Particular actions which were undertaken were "talked to someone to find out more about the situation", and "accepted sympathy and understanding from someone". In oncology outpatient services nurses are ideally placed to listen to patient’s concerns and explain the ongoing situation and try to do so as much as possible. The use of "accepting sympathy and
understanding" is indicative of emotion-focused social support. This finding is important as many nurses can become so technical regarding "chemotherapy" that the individual's need for sympathy and empathy may be undervalued and individuals seeking such interventions may be ignored.

Positive reappraisal (a problem focused coping strategy) was the second most common used coping mechanism. "Rediscovered what is important in life" was the item most often chosen as representing this strategy. This points to self-reflection and working in an effort to find meaning in the situation. In prior studies (Alwin et al, 1980; Folkman et al, 1985) problem-focused coping and positive reappraisal were highly correlated. Similar findings were present in this study. This suggests that positive reappraisal may help problem-focused forms of coping. The needs of individuals to find meaning must be recognized by health care professionals and strategies encouraged to allow reflection and the discovery of such individualized meaning. The finding was not surprising as Irish people are very family and religious orientated and searching for meaning in the situation is common.

Distancing was the third most used coping strategy and is considered by Folkman and Lazarus (1984) as
emotion-focused coping. Distancing describes efforts to detach oneself from the situation. Examples of distancing are "looked for the silver lining" or "tried to look on the bright side of things". Some of the comments written by individuals when describing their understanding of the disease and referred to above seem to be descriptive of distancing.

Nurses need to understand that individuals may use both emotion-focused and problem-focused coping strategies and that the use of these may alternate over time. The nurse should be educated so that the explicit role is in assisting individuals to choose the strategies which are most effective for them at a particular point in time. Therefore nurses must realize that there may not be just one particular way to deal with a situation and the approach should be to empower patients to cope in their own way according to need.

There are no prior studies published which have used the Ways of Coping Checklist with breast cancer patients, and therefore comparison with other study results is difficult. However Hertz (1989, Lierman (1988), and Perry (1990), using the Jalowiec Coping Scale and found with mixed cancer samples, that patients showed both emotion and problem-focused coping strategies. However, Gotay (1984) showed that there were different coping
strategies used by early stage and late stage breast and gynaecological cancer patients. If the women comprising this sample were to be studied longitudinally the strategies used may be shown to change over time.

**Relationship between Appraisal and Coping Response**

In this study it was proposed that individuals who appraised the situation as a "challenge" rather than a "threat" would differ from those who appraised it in other ways. No statistical differences were found between the women comprising the three appraisal groups with respect to emotion-focused or problem-focused coping strategies. This finding was unexpected as for Folkman et. al. (1985, 1986) challenge was related to problem-focused coping and threat with emotion-focused coping. However, in their studies appraisal was measured predominantly through interviews.

These findings in this study may have been affected by the study design. As the design was with patients undergoing active treatment the attitude of professional staff may have affected the results.

**Psychosocial adjustment to illness**

Patients undergoing cancer treatments encounter many changes in social and vocational roles, lifestyle, self-image and self-concept and disruption in daily living
activities. In this study psychosocial adjustment to illness was measured using the PAIS self report scale. The scale had never been used with an sample of Irish women and as such the results provide important information. There was no study found in the literature which used a valid and reliable instrument reporting adjustment with newly diagnosed breast cancer women receiving chemotherapy on an outpatient basis. This study provides this information. The PAIS scale has been used with women experiencing cancer (including breast cancer) from other countries and the results presented from this study adds to the knowledge already generated.

Results from the study show that the patients did not report a great disruption in psychosocial adjustment to illness. However, certain domains of adjustment were affected. These were: vocational environment, psychological distress, extended family relationships, and sexual relations. The scale least affected was domestic environment. The results are similar to those of other studies (Baider and Kaplan-DeNour, 1984, Friedman et al, 1988, Gilbar and Kaplan-DeNour, 1988, Northouse and Swain, 1987, Northouse, 1987, 1990, Worberg et al, 1989) and different from a study of adaptation to diabetes mellitus (White, Richter and Fry, 1992). It was
expected that greater disturbance would have occurred in psychosocial adjustment. This expectation was based on the information regarding the perceived stress levels of the women involved (as previously discussed) and on the fact that attending treatment for cancer is disruptive of normal life patterns. The results are either correct and the perceptions incorrect or the instrument does not measure important domains of adjustment for Irish women.

**Relationship between Appraisal, and Psychosocial Adjustment to Illness**

A question asked by the researcher at the commencement of the work related to whether appraisal choice would influence adjustment to illness. Results show that there were significant differences in the PAIS scores for the three appraisal groups. The "challenge appraisal group" was significantly different from the other two appraisal groups and showed better psychosocial adjustment to illness. The results were expected as it was thought that if an individual felt "challenged" that the outcome of the disease would be significantly better than for those individuals who were overwhelmed by the situation. This perception was based on the work of Lazarus and his colleagues and Pettingale, et.al. (1985) who found significant differences in survival at five and
ten years when women were compared by their initial response to cancer. Those who had reacted initially with denial or fighting spirit had a more favourable outcome than those who initially experienced helpless/hopeless responses.

**Relationship between Coping and Psychosocial Adjustment to Illness**

The third research objective of the study was to examine the relationship between Coping and Psychosocial Adjustment to Illness (PAIS). Little research exists in cancer populations explaining this relationship. The results show no statistically significant relationships between emotion-focused or emotion-focused coping styles and the total PAIS scores. Because problem-focused coping strategies are perceived to be more adaptive and reality-orientated the expectation was that they would provide higher adjustment. However, contrary to expectation, problem-focused coping did not have a direct relationship with psychosocial adjustment to illness. This is difficult to explain as previous studies (De Maio-Esteves, 1990, Folkman et al, 1985, Folkman, Lazarus, Dunkel-Schetter, De-Longis and Gruen, 1986, Folkman, Lazarus, Gruen and De Longis, 1986, Mechanic, 1980) linked problem-focused coping with adjustment and
positive health outcomes and emotion-focused coping behaviour with poor adjustment and poor health outcomes (McCarthy Neundorfer, 1991). Folkman and Lazarus (1988) indicated that problem-focused coping would be more appropriate in situations perceived as being amenable to change and within personal control whereas emotion-focused strategies would be more appropriate for situations perceived as being beyond one’s control. It could therefore be posited that individuals in this study perceived the situation as one beyond their control.

However gender may play a part in coping and adjustment to illness and all in the present sample were women and the majority were married. Further, none of the other studies were exclusively with breast cancer women, the majority of whom were married, worked within the home and receiving treatment while continuing to live at home. None of the studies measured the variables coping and psychosocial adjustment to illness with the same instruments used in this study.

A positive relationship was found to exist between the PAIS total scale score and the Escape Avoidance score on the Ways of Coping Checklist ($r=.38$, $p<.000$). Individuals who had poorer psychosocial adjustment to illness used more escape-avoidance behaviour and less use of the coping strategy of distancing. This finding is

Individuals who used escape avoidance had greater problems in relation to health orientation, domestic environment, sexual relations, extended family relations, social environment and psychosocial distress. Based on the results of this study the use of escape-avoidance should be avoided as it may lead to poorer psychosocial adjustment to illness and therefore may impede recovery. The strong relationship between escape-avoidance and PAIS highlight the importance of nursing strategies to recognize and deal with the emotion-focused coping strategies used in escape avoidance, identify and intervene with consolation rather than individual coping strategies. The nurse therefore should study the meaning and dimensions of the process of escape-avoidance and distancing and assist individuals to move from relying on these strategies in the coping process.

**Social support**

One of the variables theorized to affect stress and coping and thus outcome effectiveness is social support (Lazarus and Folkman, 1984). In this study social support was examined from the perspective of network
size, most important individual supplying social support and amount of social support reported as given. Results show the mean number of individuals listed to supply social support as 11 with a standard deviation of 6. This was expected as in Ireland the majority of the population are Irish, family life is important and distance to visit non-problematic.

The person most important in the network for 74% of the participants was spouse or husband. This is reflective of the fact that most of the women were married. However, there is a growing awareness that traditional Irish family life with its unique values and beliefs is changing and that in many instances the importance of the spouse has diminished. Based on these opinions the findings that husbands were most supportive could be doubted and the results may have been due to social desirability of family life and relationships.

Total functional social support showed a moderate amount available. This finding was similar to that of Dunkel-Schetter (1984) and different from findings reported by Peters-Golden (1982). It was an expected result for Irish middle aged woman.

In the study the expectation was that social support would directly influenced coping. Results showed no significant relationships relating the level of social
support and problem-focused or emotion-focused coping strategies. The instrument measured the amount of functional support. It did not measure the quality of the functional support which Peters-Golden (1982) found inappropriate and unhelpful. Perhaps even though the support was available it was not what was really required.

Relationship between social support and psychosocial adjustment to illness

When the relationship between social support and psychosocial adjustment to illness was examined no significant relationships were found. These findings were unanticipated as there is evidence in the literature (Baider and Kaplan-DeNour, 1984, Funch and Mettlin, 1982, Northouse and Swain, 1987) to show that social support is an important factor in the adjustment of women to breast cancer.

An explanation for the differences in findings may be related to sample characteristics. The Irish sample of breast cancer women was very homogenous on demographic variables. These females may not be representative of women who live in other cultures or of samples with either greater numbers or mixed diagnosis. A further reason for the difference may be associated with
measurement. No other study was found for comparative purposes which used similar instruments to measure both social support and psychosocial adjustment.

Evaluation of the model

The framework used for this study was based on the stress coping theory of Folkman and Lazarus (1984). They theorized that the extent to which an individual feels threatened is expressed in primary appraisal and that this appraisal is expressed in feelings of harm, threat or challenge. The first question in this research related to how women with breast cancer appraised having cancer and receiving chemotherapy. The finding that the situation was predominantly perceived as either "challenge" or "anticipated threat" provides some support for the work of Lazarus and Folkman (1960, 1984).

Results also show that both problem-focused and emotion-focused coping strategies were used by the sample. However, emotion-focused coping responses were used slightly more often. These findings agree with results of studies by the researchers over a number of years (Folkman and Lazarus, 1980, Folkman, et al, 1986).

The theory proposed that cognitive appraisal is related to coping method used. While the study overall did not support the proposed relationships it does
suggest that the "challenge" appraisal group were significantly different from the harm/loss and anticipated threat group with respect to escape-avoidance coping.

The theory proposed that appraisal is related to psychosocial adjustment to illness. Results show that there were significant differences between the three appraisal groups with respect to psychosocial adjustment to illness. Again the "challenge" appraisal group was significantly different from the other two groups and those who were challenged had less adjustment problems. One of the variables theorized to affect stress and coping and thus outcome effectiveness is social support (Lazarus and Folkman, 1984). The study did not support these proposed relationships.

Overall, the theory used as a framework for the study proved useful. It guided the study and the investigation of relationships.

Overall summary

In summary, the breast cancer women who comprised the sample for this study were predominantly married with a mean age of 43.8 years. The majority worked inside the home. The time since diagnosis ranged from four to forty weeks with a mean of 18 weeks. Eighty-eight
percent had surgery with the majority (72%) having had a
mastectomy prior to testing. All women were in initial
treatment programs. The number of chemotherapy
treatments ranged from two to fourteen with a mean of six
treatments. Cyclophosphamide, Methotrexate and 5-
Fluorouacil (CMF) was the most common type of treatment
administered.

The majority of the women (n=47) found having cancer
for which they were receiving cytotoxic chemotherapy a
"challenge". Lesser numbers found the situation one of
"harm/loss" (n=8) or an "anticipated threat" (n=31).
Both problem-focused and emotion-focused coping
strategies were used. Slightly higher mean scores were
reported for emotion-focused strategies. Examination of
individual coping subscales indicated that the strategies
used most often were seeking social support, positive
reappraisal, and distancing. The least used strategies
were accepting responsibility and confronting the
situation. There was no difference between the
harm/loss, anticipated threat and challenge groups on the
type of coping used. The women reported a number of
psychosocial adjustment to illness problems. The domains
affected were vocational environment, psychological
distress, extended family relationships. The scale least
affected was domestic environment. When appraisal groups
were considered there were differences between the appraisal groups in respect to psychosocial adjustment to illness. The challenge appraisal group was significantly different from the harm/loss group but the difference between them just failed to reach statistical significance. When adjustment subscales were examined the challenge appraisal group was found to be significantly better adjusted in terms of the social environment psychosocial adjustment to illness. When relationships between coping and adjustment to illness were explored the use of escape-avoidance was found to be significantly related to poorer adjustment to illness in relation to health orientation, domestic, sexual, extended family, social and psychosocial distress domains.

Social support network numbers ranged from 1 to 24 with a mean of 11.5 and a SD of 6.2. The person most important in the network for 68 participants (79%) was spouse or husband, for 12 (14%) it was a family member, 5 (6%) a friend and for 1 (1%) individual the counsellor/therapist was the most important social support listed. Results regarding the relationship between social support and coping and psychosocial adjustment to illness showed no statistical relationships.
Time since diagnosis was related to greater problems in sexual relationships and in seeking social support. The number of chemotherapy treatments were related to less use of functional social support and less use of the strategy of self-controlling as a coping strategy. Twenty eight percent of the variance in psychosocial adjustment to illness was explained by the coping strategies of distancing (4%), escape-avoidance (14%) the cognitive appraisal strategy of challenge (6%) and time since diagnosis (4%).

Overall, the study identified situation specific responses and points to the important relationship among appraisal, coping, social support and the outcomes of a stressful encounter. The results are consistent with theory and the findings provide some support for the model proposed by Lazarus and Folkman.

This exploratory research contributes to the body of knowledge in cancer research. In particular, it explains relationships between appraisal, coping, social support and psychosocial adjustment to illness in breast cancer women. It provides a basic understanding of the feelings of Irish breast cancer women and provides a base for further nursing research on this topic in Ireland.
Limitations of the study

Overall, this study identified situation specific information on cognitive appraisal, coping responses, social support and psychosocial adjustment to illness in Irish breast cancer women. The results point to important relationships in a stressful encounter. As choices had to be made about the sample, the design and measurement of variables the study had certain limitations. Some difficulties were encountered in the study which may also have limited the results.

The nurses involved in data collection were committed to the study and made every effort to secure the participation of the patients identified. A difficulty for the researcher was maintaining regular contact with each site. This was achieved through telephone contact and at least weekly visits to each site. Five nurses were involved in the distribution of instruments and in data collection. While the nurses were told requirements it cannot be said with certainty that the instructions given to the patients were consistent.

The sample for this study was drawn from five outpatient hospital sites. The sample was restricted to patients within the same geographic region. The lack of random selection restricts the generalization of the
findings. The participants chose to take part in the study and as such were self selecting. How self selection might have biased the results is unknown. Subjects were generally positive about participation but were not familiar with the completion of standardized instruments. However, once a commitment was given almost all questionnaires were fully completed. An interesting fact was that individuals seemed inordinately "eager to please" and seemed afraid of producing "wrong information". This could be caused by lack of experience with research, unfamiliarity with instrument completion, social desirability or the notion that prevails in Irish society that in general the health care system is not criticized. It is unknown whether these factors influenced the results.

A number of individuals who were asked to participate in the study chose not to be included. A small number of patients (approximate N=8) felt that they would be unable to complete such a complex set of questionnaires. Other patients did not wish to do so or said that they felt too ill. No information is available on these individuals. The individuals who took part in the study may have been considerably different from those who chose not to participate.
When data collection began and based on the information available it was decided that all of the sample would be drawn from one hospital. This did not prove successful due to a lack of newly diagnosed breast cancer women coming to the hospital at that time for treatment. It was then decided to include women with relapse disease and to open further sites. Immediately, it became apparent that sufficient numbers of newly diagnosed women would become available over a number of months and data collection from women with disease relapse was discontinued. Data was therefore collected from 10 women which is not included in this analysis. How these may have differed from other women is unknown.

Disease related information was not collected regarding type of tumor or stage of disease at time of treatment. Agreement with medical staff to use "their patients" as subjects did not include these variables or access to the medical notes of patients. A limitation of data collection is in relation to these factors which may impact on health and treatment tolerance.

Women with newly diagnosed breast cancer who were receiving chemotherapy for the first time were to be included in the study. Length of time since diagnosis was conceived in terms of weeks or months.
A difficulty arose when patients who were receiving chemotherapy for the first time completed the instruments (N=4) but reported a long history of breast disease yet felt themselves "newly diagnosed". How these individuals might have differed from those included in the study is unknown.

The concepts investigated in this study were measured using valid and reliable instruments. However the instruments were developed, tested and normed on American populations. Coping, social support and psychosocial adjustment may be situation specific so scales developed from a factor analysis of responses to different stressors may not be appropriate to cancer patients. This may apply even though the scales had been considerably tested. Further, scales developed in another country may not reflect cultural differences.

The researcher did not determine the degree of coping or psychosocial distress experienced by the patients before the diagnosis of cancer and the commencement of chemotherapy. A comparison of premorbid and post-diagnosis scores would have determined whether cancer and its treatment had any effect on the variables under consideration. The absence of a baseline assessment limits the study from determining if factors were present in the individual or in the environment.
which preexisted the illness and which may have affected the results. Alternatively, a comparison group of subjects was not used making it difficult to determine if the results were due solely to the effects of cancer or to other concurrent stressors in the individuals life.

The present study was cross-sectional, descriptive, and exploratory and as such presents information on the variables measured for Irish breast cancer women. If the same framework was used for studies in another country it might show similarities or differences between individuals from a cultural perspective.

The study design meant that information was collected at one particular point in time. As such the findings are limited. A longitudinal investigation is required to examine ongoing relationships such as the influence of cognitive appraisal on coping strategies which may result in reappraisal and change in psychosocial adjustment over time.

Because all of the sample were women, findings from this study may not be generalized across gender. The data for the study were supplied by patients through the self reporting method. The factors which may have influenced these responses, for example the part played by social desirability of response and self preservation are unknown. Although patients in this research were
studied prospectively, i.e. during treatment, they were still asked to recall experiences in relation to coping, social support and psychosocial adjustment.

Instruments were completed during the outpatient visit or at home. Initially it was planned that all instrument completion could be done at the outpatient visit. This was not possible as some clinics were so crowded that it was physically impossible to give the women the privacy required. On other occasions the women felt that there was too much activity in the outpatient clinic and that they would prefer to complete it at home. A limitation therefore may have been the presence of family members, significant others and health care workers during instrument completion.

In this study one closed question was used to determine predominant cognitive appraisal used by the women. From these, individuals choose one type of appraisal from three options. The forced choice format may have limited the results. One other open ended question allowed women to express further feelings about their diagnosis and treatment. Very diverse data were generated from both questions. The study design limited instrumentation. A more useful approach to assessing appraisal might be a multiple item scale to measure the three dimensions of challenge, harm/loss and anticipated
threat. Consideration was given to using a multiple item scale but the inclusion of an instrument with a number of items was considered not possible due to the length of the other questionnaires included. In further studies a multiple item questionnaire or collection of qualitative data through interview may extend the results.

**Contribution to nursing science and clinical nursing practice**

**Nursing science**

Nursing is concerned with patterns of human behavior in interaction with the environment in a critical life situation for the patient. In the present study the human behavior studied pertained to appraisal, coping and psychosocial adjustment to illness. The critical life situation was having cancer for which chemotherapy was being administered. In this research the researcher has taken a theory borrowed from psychology and used it in nursing from a nursing perspective. The questions asked were based on clinical practice yet different to those which could be posed by individuals from other disciplines. The research generated is situation specific and contributes to nursing knowledge in the area of appraisal, coping and adjustment to illness.
Clinical practice implications

If nursing practice is the diagnosis and treatment of human responses to actual health problems then there are a number of nursing implications from this study. The first finding was that the majority of breast cancer women perceived their situation as one of "challenge" and that these individuals had fewer psychosocial adjustment to illness problems. Lesser numbers perceived the situation as a "harm/loss, or anticipated threat" situation. Feelings of shock, fear, confusion and anxiety were also reported. The implications for nursing are that a comprehensive assessment of individual patient's feelings should be performed, concerns should be emphatically listened to and recognized as part of a normal reaction. Although methods for assessing and intervening with individuals experiencing life-threatening illnesses exist, many nurses are not specifically trained in these methods. Educational programs related to these should be provided and implemented. Further, challenge appraisal should be encouraged and help given to patients so that they may see their situation in this manner.

The second finding was that the respondents used both emotion-focused and problem-focused coping strategies. However, emotion-focused coping was used
most often with strategies such as seeking social support, positive reappraisal and distancing used frequently. Nurses should make patients feel that they are respected as unique individuals and allow for their individual choices and differences in perceptions. They should help individuals to understand the fluctuations in responses without feeling that something is wrong or that no other individual could possibly react in this manner. Patients may have many concerns about what is happening to them during treatment and therefore require information so that positive reappraisal when used can lead to problem identification and resolution.

The greater use of emotion-focused strategies employed by this sample of women have implications for nurses particularly as it was found that the use of the strategies of escape-avoidance and distancing were related to poorer psychosocial adjustment to illness. Information related to escape-avoidance coping strategies should be discussed with nurses. Nurses should recognize that when these strategies are used predominantly and exclusively they may affect adjustment. Referrals to other services should be made by nurses as appropriate to individual needs.

Social support was sought mainly from husbands and family members. The value of spouse and family in the
life of the women with breast cancer should never be undervalued. A philosophy of nursing for cancer patients should encourage inclusion of family as partners in care and allow for open communication with them at all times. Furthermore, patients should be encouraged to seek and take as much social support as required from important people in their lives. Even though the Norbeck Social Support Questionnaire allowed respondents to list and quantify the support given by health care professionals, only one patient chose to include a health care professional in her social support convoy. The question professionals must ask is whether their support is valued or appropriate. Furthermore, they must ask whether care is in terms of treatment protocols, injections, and medications and if spending time with the patients just talking is undervalued, underdeveloped or a threat to their own personal ability.

Psychosocial adjustment was disrupted in a number of areas. It is imperative that nurses working with patients at outpatient level understand the ongoing difficulties of living for individuals who receive treatment on an outpatient basis.
Research implications

In the literature review, studies of appraisal, coping, social support and psychosocial adjustment to illness in a population of patients receiving chemotherapy were not found. This exploratory descriptive, correlation study has provided new information about patients responses and difficulties with coping and adjustment to breast cancer while concurrently receiving chemotherapy on an outpatient basis. However, findings from the study lead to many questions and potential for future research. The following outlines some questions which could be addressed in further studies.

The sample in this study was drawn from five sites in Ireland. It is unknown how these patients differ from others throughout Ireland or the World. This study could be replicated with a larger group of patients drawn from many sites or a comparative study with the United States or any other European country could be performed. Random sampling of individuals would also aid in generalization of results.

The data were collected at only one point in time. It is possible that responses change over time. For example, it would be interesting to test appraisal, coping, social support and psychosocial adjustment at
different time points in the patient's life. A follow up study could be done after one year when patients are no longer in active treatment and comparisons made with the results obtained in this study. Alternatively, a longitudinal study with data collected at a number of time points could be done and changes over time explored.

The study was quantitative. Valid and reliable instruments were used. Two free text questions allowed individuals to express opinions not allowed for in the forced choice questionnaires. Of particular interest was that 90% of the study sample elected to make free text responses in addition to the standardized responses. A triangulation study using both the instruments in this study and an interview to elicit qualitative data might be productive, especially in relation to measurement of cognitive appraisal, perception of illness and social support concepts.
Conclusion

The researcher’s interest in this topic was stimulated by clinical experience over many years with cancer patients. It also relates to a sustained interest in improving nursing care to cancer patients receiving treatment in outpatient centers. Given the short time these individuals have to interact with nurses, the importance of need assessment and intervention evaluation is vital.

As a result of the study, an understanding has been gained on Irish breast cancer women’s perceptions, regarding cognitive appraisal, coping responses, social support and psychosocial adjustment to illness. The Folkman and Lazarus stress and coping framework within which the study was conducted has provided a theoretical perspective which has proved useful.

In the literature there are no reported studies similar to this in a population of breast cancer women receiving cytotoxic chemotherapy. No other research reported in the literature examined cognitive appraisal, coping responses, social support and psychosocial outcomes concurrently in a cancer population. Further, no Irish studies exist which explore these variables in breast cancer patients. The study contributes to the development of nursing knowledge in general, and to
knowledge relating to Irish cancer patients in particular. As this is the first nursing research study with Irish cancer patients, it is hoped that this work will inspire and empower other nurses to study aspects of cancer patient care, and to understand that as nurses: "We are not at our best perched at the summit; we are climbers, at our best when the way is steep."

John W Gardner
References


Vaux, K.L (1978). *Will to live, will to die*. Minneapolis, MN: Augsburg&hellip;


To: Each person asked to participate in the study
From: Geraldine McCarthy, Nurse Researcher

I am a nurse and a researcher. Presently I am carrying out research with women who are receiving cytotoxic chemotherapy. The purpose of the study is to find out how individuals appraise the situation, how they cope and the psychosocial consequences of having a condition which requires treatment at a hospital. The study also investigates support available and given by relatives and friends to people who remain at home while attending the hospital for short periods of time.

The results will be of interest to nurses, doctors, social workers and other health care professionals who care for patients in hospital and in the community. As the results will show how people think and feel the outcome may influence the care of other patients in the future.

To participate requires the filling out of three research instruments. It will take about one hour of your time. Permission has been gained from your Doctor and the hospital authorities to request your participation.

You are not identified in any way and your responses will be coded and collated with all other responses. A research assistant will be present to answer your questions and queries.

In this letter I am asking you to participate. If you are willing please sign the agreement at the end of this page.

Thank you

Geraldine McCarthy
Researcher

Signature of patient

Signature of witness

Date:

Thank you for your time.

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FACT SHEET: THIS MAY BE COMPLETED FROM RECORDS

To enable me to compare people from different situations and groups, and to draw comparisons with studies from other countries (there are no other Irish studies of this nature) I would like some additional information about your background. You are not asked to state your name and so your identity is protected.

Please indicate

1. Age:

2. Marital status:
   (tic appropriate box)
   Married ___
   Single ___
   Widowed ___
   Separated ___
   Divorced ___
   Other _____________

3. (a) Occupation:
   (b) Occupation of head of household:

4. Length of time since diagnosis
   (state in days or weeks)
   ____________

5. Have you had surgery  Yes ___  No ___
   If "Yes" please state type

6. Number of chemotherapy treatments  ___

7. Type of Chemotherapy  _____________
   (i.e. CMF or CMV)

8. For you has menopause occurred  Yes ___  No ___