DISEASE CHARACTERISTICS, PAIN, OPTIMISM, COPING STRATEGIES, AND PSYCHOLOGICAL WELL-BEING OF RHEUMATOID ARTHRITIS PATIENTS

By

JOANNA IVY SANGSTER

B.A., The University of British Columbia, 1964

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Department of Counselling Psychology

The University of British Columbia
Vancouver, Canada

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Abstract

This study was concerned with variables likely to influence psychological well-being in chronic rheumatoid arthritis (RA) patients, a group at risk psychologically as a consequence of their disease condition. The study examined the relationships of personality characteristics (optimism) and coping strategies (wishful thinking and problem solving) in predicting psychological well-being (operationalized as psychological distress), after removing the effects of age, stressor type, and disease characteristics (physical disability and pain). Subjects were 107 adult RA patients drawn at random from the referral files of The Arthritis Society. Data were collected by means of a questionnaire mailed to potential respondents. Coping strategies were assessed, with reference to a respondent identified stressor, using two scales (wishful thinking and problem solving) from Vitaliano's revised Ways of Coping Checklist. Both raw and relative scores were used in analyses. Optimism was assessed using the Life Orientation Test, physical disability and pain were measured using two scales (physical health status and pain) of the Arthritis Impact Measurement Scale, and distress was measured using a modified Brief Symptom Inventory. Preliminary analysis was done to compare subjects reporting arthritis or arthritis-related stressors with those
reporting other stressors on all independent and dependent measures. There were no between group differences. Hierarchical multiple regression analysis was used to examine relations among variables with variables entered in five steps: (1) age, stressor type, and physical disability; (2) pain; (3) optimism; (4) wishful thinking and problem solving; and (5) relative coping. The regression equation reached significance, $F(8,98) = 12.35, p<.01$, and accounted for 50% of the variance in distress. Optimism and, to a lesser extent, wishful thinking accounted for the largest proportions of variance, the relationships being negative and positive, respectively. Age accounted for a small but significant proportion of the variance. The findings clarify the relations between wishful thinking, problem solving, optimism, and psychological distress in adult RA patients.
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Dedication

I would like to dedicate this thesis to my two daughters, Jennifer and Eva, as a symbol of the love and respect I have for them, to my mother, Marion Sangster (in hopes that she is watching over us), and to mothers and daughters everywhere who are coping with the issue of work in the world.
Introduction

Rheumatoid arthritis, a chronic joint disorder common in the general population, is an irreversible condition resulting in dysfunction, disability, and pain, which can be acute or chronic (Pachas, 1985; Skevington, 1986). The condition can profoundly impact all aspects of a patient's life with impairment to family and social relations, often resulting in isolation and vocational disability with attendant reduction or loss of income (Meenan, Yelin, Nevitt, & Epstein, 1981; Pincus et al., 1984).

Emotionally and psychologically this can mean disturbance in the form of depression (Gardiner, 1980; Liang et al., 1984; Spergel, Ehrlich, & Glass, 1978) and general neurotic symptoms. The personality profiles of chronic rheumatoid arthritis patients are often similar to those from other chronic patient groups but different from norms established for nonpatients (Robinson, Kirk, & Frye, 1971). The negative characteristics are generally regarded as chronic disease sequelae, the symptoms of psychological stress (for reviews see Anderson, Bradley, Young, McDaniel, & Wise, 1985; Genest, 1983; Lerman, 1987). The distress can vary with disease characteristics, the disturbance being greater (Robinson, Kirk, Frye, & Robertson, 1972) or evident only in the chronic, severe patients (Crown, Crown, & Fleming, 1975;
Mindham, Bagshaw, James, & Swannell, 1981). Other variation has been documented and associated with rate of disease progression (Moos & Solomon, 1964), medication usage (Moldofsky & Rothman, 1971), presence of serum antibodies (Crown et al., 1975; Gardiner, 1980), and coping strategies (Felton & Revenson, 1984; Felton, Revenson, & Hinrichsen, 1984).

Of these mediators coping strategies are of particular interest to this study because they are skills which can be acquired and used with the possibility of benefits to emotional and psychological health. To date, only a few studies have examined the coping strategies of rheumatoid arthritis (RA) patients (Anderson & Rehm, 1984; Felton & Revenson, 1984; Keefe et al., 1987). The other mediators, disease characteristics and medications, are ones over which the patient presumably has little or no control. Many studies have looked at the role of psychological variables in RA onset and course but have found little empirical evidence to substantiate a causal role (for review see Anderson et al., 1985). Medications are used to treat RA symptoms and although the patient has some control over drug intake, he or she has none regarding efficacy. Because coping strategies do come within the domain of personal control, they are of interest in terms of research and treatment development.
There are individual differences in the way people cope with chronic illness which may influence psychological well-being (Felton & Revenson, 1984; Keefe et al., 1987; Maes & Schlosser, 1987; Silver, Auerbach, Vishniavsky, & Kaplowitz, 1986). Evidence from studies on other patient groups and nonpatients about the association between coping strategies and psychological well-being is mixed. Some forms of coping strategies have been positively associated with well-being and some negatively associated (Aldwin & Revenson, 1987; Felton & Revenson, 1984; Vitaliano, Katon, et al., 1987). For instance, studies have found the strategy wishful thinking negatively associated with psychological well-being (Vitaliano, Russo, Carr, Maiuro, & Becker, 1985; Vitaliano, Katon, et al., 1987) and the strategy planful problem solving positively associated with well-being (Folkman, Lazarus, Gruen, & DeLongis, 1986).

The conceptualization of coping, in this study, is that of Lazarus and Folkman (1984). They define coping as the process of managing specific external and/or internal demands that tax or exceed the resources of the person. It is the cognitive and behavioral effort made to master, tolerate or reduce demands and conflicts, and the mechanism through which well-being is maintained. They include two coping functions in their definition, problem-focused coping which is
directed at managing the problem causing the distress and emotion-focused coping directed at regulating the emotional response to the problem. Stress is defined as that aspect of the person-environment relationship that is appraised by the person as taxing his or her resources and endangering his or her well-being. Within their theoretical framework, personality variables are presumed to modify the experience of and response to stressful situations, acting to exacerbate or alleviate stress (Parkes, 1986; Scheier, Weintraub, & Carver, 1986). In addition, situation factors presumably contribute in varying degrees to the person-environment relationship (Lazarus & Folkman, 1984; Folkman, Lazarus, Gruen, & DeLongis, 1986; Parkes, 1986).

For the RA patient population, personality variables have been examined in a number of studies (for review see Anderson et al., 1985). Historically, the focus of this research was to examine the role of personality variables in the onset and course of RA. Little or no evidence was found for such a role (Anderson et al., 1985). More recently, attention has been given to one personality variable, dispositional optimism (Scheier & Carver, 1987; Tennen & Affleck, 1987), which seems promising in terms of health-related outcomes and coping. However, the several studies done on patient groups (Carver & Gaines, 1987; Strack,
Carver, & Blaney, 1987) have not included studies of RA patients.

Dispositional optimism as defined by Scheier and Carver (1985) is the consistent tendency to expect good things to happen. Recent studies have demonstrated a positive relationship between optimism and health outcomes (Carver & Gaines, 1987; Scheier & Carver, 1985; Strack et al., 1987). One study has documented a relationship between optimism and choice of coping strategies, providing evidence that the health-related associations of optimism may be due in some measure to the coping strategies optimists choose (Scheier et al., 1986).

Lazarus and Folkman (1984) viewed the person-environment relationship as being "mutually reciprocal, bi-directional" (p. 325). Thus coping strategies are transactional variables that refer to the integration of both person and environment in a given transaction. Among environment or situation factors which may be salient for the RA patient are age, stressor type, and disease situation, which includes physical disability and pain.

The present study was concerned with factors which evidence suggests might influence the psychological well-being of RA patients, such as age, stressor type, disease characteristics, optimism, and coping strategies. In this study RA patients were asked to
identify a stressful event and the coping strategies used to deal with that event. Information regarding pain and the impact of physical disability on daily activities, as well as optimistic disposition was documented. It was expected that the use of coping strategies and optimism would be related to well-being, above and beyond the effects of age, stressor type, and disease characteristics. For the purposes of the present study, psychological well-being, a broad concept with both positive and negative aspects, will be defined as psychological distress.

This study tested the hypothesis that there is a linear relationship between some or all of the predictor variables stressor type, age, physical disability, pain, optimism, two types of coping strategy (problem solving and wishful thinking), and relative coping, and the criterion variable psychological distress.
The focus of this study is the RA patient population, the coping strategies used by persons in this population to deal with stress, and the relationship of these strategies to psychological well-being. Also of interest are other variables which may modify well-being: situational variables (age, type of stressor, disease characteristics) and personality variables (optimism). The following review presents the theoretical framework within which this study is conceptualized, and an overview of the literature on the content areas of psychological well-being, disease characteristics (physical disability and pain), personality characteristics (optimism), and coping strategies (studies of arthritis patients, other patients, and community adults).

Theoretical Framework

Coping strategies have only recently become a focus for study with the development by Lazarus and Folkman (1984) of a theoretical framework which provides an adequate working definition of coping strategies and development of suitable instrumentation. They define coping as the process of managing specific external and/or internal demands that tax or exceed the resources of the person. It is the cognitive and behavioral effort made to master, tolerate or reduce demands and conflicts, and the mechanism through which
well-being is maintained. In addition to the process of coping, Lazarus and Folkman (1984) define coping strategies as the specific cognitive and behavioral acts made in coping with specific situations.

Coping was conceptualized as a constantly shifting process that changed as the status of the person-environment relationship changed (Lazarus & Folkman, 1984). This is in contrast to the trait approach which assumes behavioral and cognitive consistency across situations (Goldstein, 1959, 1973; Moos, 1974). The trait perspective, for instance, describes Type A behavior, as a broad, pervasive way of relating to other persons and the environment (Friedman & Rosenman, 1974; Glass, 1977). In contrast, the process oriented perspective is transactional with the person-environment relationship being viewed as dynamic, mutually reciprocal, and bidirectional.

Lazarus and Folkman (1984), in their conceptualization of coping, emphasize the role of coping function or the purpose served by a coping strategy. They include both emotion-regulating and problem-solving functions in their definition of coping, in contrast to the ego process perspective which focuses on tension reduction to the exclusion of problem solving (Haan, 1977; Menninger, 1963; Valliant, 1977). Emotion-focused coping strategies are those which serve to regulate the emotional response to a
problem. Problem-focused strategies are those which serve to manage or alter the problem causing the distress. Lazarus and Folkman's (1984) definition of coping strategies is independent of outcome or the effect that a specific strategy has.

In the conceptualization of coping, stability is an issue. The emphasis originally was on the constantly changing nature of the process (Folkman & Lazarus, 1980). Early research found more variability than stability in the use of coping strategies with different stressful situations (Folkman & Lazarus, 1980). However, more recent studies (Folkman, Lazarus, Gruen, & DeLongis, 1986; Vitaliano et al., 1985; Vitaliano, Katon, et al., 1987) have found moderate stability in the use of coping strategies across a diversity of stressors. Folkman, Lazarus, Gruen, and DeLongis (1986) found that, of the coping strategies examined, the emotion-focused strategies were the most stable suggesting that these forms are more independent of situation. These authors concluded that some stability of coping is necessary if coping strategies are to have an effect on health status and well-being which themselves are relatively stable phenomena. They further speculated that some stability of coping may be due to the influence of generally stable personality characteristics.

In a study that found evidence for stability in
the process of coping, Folkman, Lazarus, Gruen, and DeLongis (1986) examined the coping strategies and appraisals across five measurement occasions. Coping strategies were assessed using the 66-item revised Ways of Coping Checklist (WCCL; Folkman & Lazarus, 1985). The eight coping scales showed more stability than the appraisal variables with mean autocorrelations ranging from .17 to .47 across different stressor situations.

Within the theoretical framework of Lazarus and Folkman, stress is defined as that aspect of the person-environment relationship that is appraised by the person as taxing his or her resources and endangering his or her well-being. Appraisal is the process of evaluation with respect to what is at stake and what coping resources are available. Coping and appraisal are closely linked processes which continuously influence one another.

Lazarus and Folkman (1984) suggest that personality variables modify the experience of and response to stressful situations, acting to exacerbate or alleviate stress. Some evidence suggests that dispositional optimism (Scheier & Carver, 1985) may be one such variable (Scheier & Carver, 1987; Scheier et al., 1986).

Lazarus and Folkman (1984) also suggest that situational factors contribute in varying degrees to the person-environment relationship. For RA patients
these factors can be thought to include age, type of stressor, and physical and physiological variables such as physical disability and pain.

The following is a review of the constructs of interest to this study. Psychological well-being is discussed first to provide some evidence regarding the overall relationship between RA and well-being. Next, the factors which may contribute to well-being are reviewed. Disease characteristics including physical disability and pain, are considered as situational variables. The personality characteristic of optimism is considered as a variable which may affect well-being. Coping is reviewed with particular attention to the relations of coping strategies to psychological well-being and other health-related outcomes.

**Psychological Well-being**

Psychological well-being is a concept having a multidimensional quality and variously defined in the literature to include the areas of happiness, life satisfaction, and positive affect (Diener, 1984). Lazarus and Folkman (1984) use the term morale to refer to a concept close to subjective well-being which in turn overlaps conceptually with psychological well-being. By morale they mean how people feel about themselves and their conditions of life. Positive morale depends, in the long run, on the consistent tendency to appraise situations as manageable, to
tolerate negative experiences, and to cope with a broad range of encounters. They distinguish between short term well-being and the more enduring background quality of morale which can be distinguished on the basis of the relative contributions of person and situation.

Immediate affect is largely situation-dependent; it is the momentary and changing reflection of the individual's evaluation of his or her position. The more stable and persistent background mood quality, morale, represents the consistent contribution of personality traits, the more or less random variations due to situations having cancelled each other out. To the extent that the momentary evaluations are based on premises similar to those pertaining to morale (happiness, satisfaction), the short-term affect will parallel the long-term. For individuals dealing with a chronic disease, the short-term affective responses associated with disease-related situations will, quite possibly, not show the random variation one would expect in nonpatient populations but may show a consistent pattern which reflects the course of the disease condition. If this is so, the sum total of short-term responses or long-term morale may also change over time as the disease progresses from an acute to a chronic condition. This may be generally true for chronic patient groups and relevant to the
condition of chronic RA patients. Recent reviews and studies provide evidence to substantiate this view (Anderson et al., 1985; Moos, 1964; Skevington, 1986; Spergel et al., 1978).

Moos (1964), in his review of the research on personality factors associated with RA, found a number of studies documenting the "rheumatoid personality" as, for instance, depressed, dependent, conscientious, and perfectionistic. He found, however, that many of the studies were uncontrolled and retrospective. Those that were controlled yielded conflicting results. Moos suggested that personality factors prevalent in arthritics may result from rather than contribute to the disease condition. In comparing rheumatoid arthritics to four other patient groups, Spergel et al. (1978) found no evidence to support a "rheumatoid personality" and suggested instead a "chronic disease personality." Genest (1983), in a more recent review, found accumulating evidence to indicate that most but not all RA patients demonstrated some common psychological characteristics such as depression, general neurotic symptoms, rigidity, and low ego-strength, and that these were secondary responses to chronic disease in general. Anderson et al. (1985) found little or no evidence to support an arthritic personality that predates and may lead to disease onset. They did document the psychological and
behavioral effects of the disease itself, and that RA patients were characterized by depression, above average emotionality, apprehension, worry, tension, and considerable psychological stress.

The change in behavior and psychology that parallels disease progression from acute state to chronic illness has been documented by Crown et al. (1975) for RA patients, and by others for pain patients in general (for review see Skevington, 1986). It would seem then that disease itself may be a stressor that can dramatically affect aspects of well-being in what is probably a complex transactional relationship as postulated by Lazarus and Folkman (1984).

In summary, it would appear that certain mood states are prevalent in chronic RA patients and they may be a consequence of the disease itself. The factors (e.g., depression, general neurotic symptoms, rigidity; Spergel et al., 1978) are those generally used to describe and define negative well-being. In terms of Lazarus and Folkman's (1984) framework, there seems to be a shift in long-term morale as the disease progresses to the chronic stage. This may be paralleled by a consistent shift in short-term morale in the direction of the more negative aspects of well-being.

The definition of negative well-being, psychological distress, will be used throughout the
remaining sections of the literature review and the succeeding chapters.

**Disease Characteristics**

**Physical disability.** The physical disability of RA patients may have a profound impact on some or all areas of life. Routine activities such as dressing, climbing stairs, holding a pen or pencil, may become difficult or impossible as a result of reduced joint mobility. Eventually, the RA patient may be unable to work, maintain a household, attend to personal hygiene, and so on. These situations may themselves be stressful and create additional difficulties in the strain they engender in the patient’s social relationships. Alteration to friendships and family relations may result in increasing isolation which may, in turn, contribute to the development of an increasingly negative psychological and emotional set (Cohen & Lazarus, 1979; Meenan et al., 1981). While rheumatoid disease is itself a stressor, patients may vary in their response to their physical condition just as they may vary in their response to stresses other than their disease condition.

**Pain.** Pain also stands in complex relationship to psychological distress as a potential stressor, one which is often unrelated to disease severity (Lichtenberg, Swensen, & Skehan, 1986) but linked to personality factors such as susceptibility to stress,
depression (Moldofsky & Chester, 1970) and hypochondriasis (Lichtenberg, Skehan, & Swensen, 1984; Lichtenberg et al., 1986). This is in keeping with the gate control theory of pain postulated by Melzack and Wall (1965, 1982). The theory proposes that pain is affected by both psychological and physiological factors, so that cognitive processes influence the spinal gate mechanism that modulates the transmission of nerve impulses relaying pain information from the body to the central nervous system.

In RA pain can affect any of the joints. In the early stages movement causes pain. In more advanced stages pain occurs spontaneously as a result of inflammation and tension on the joint capsule and ligaments; slight changes in pressure can produce intense pain (Skevington, 1986). Rheumatoid arthritis can be acute or chronic. The acute condition, often characterized by rapid onset and remission of symptoms, may or may not recur and/or develop into the chronic stage. For pain patients in general, there are several stages of pain experience distinguishable both physiologically and psychologically. In the acute stage pain is said to be sharp and localized, in the chronic, after about 6 months, it is dull, burning, and more diffuse. Chronic RA patients are subject to flare-ups with symptom exacerbation and more acute pain. Much of the psychology of pain research is
restricted to studies of chronic patients for pragmatic reasons. Chronic patients are more numerous in hospital populations than acute patients, and they are more likely to be long-term attenders of treatment.

For RA patients with high pain, Langley and Sheppeard (1985) describe two patterns of pain-mood relationships, one group showing pain-mood score correlations, which included similar magnitudes, while the other group had uncorrelated scores. Patients in the second group were often calm and happy despite severe pain. The authors speculated that a coping response was active in this process. Moldofsy and Chester (1970) also report two pain-mood patterns for RA patients with a complex relationship between pain intensity and emotional reactivity. The synchronous group reported a positive pain-mood relationship so that decrease in anxiety and hostility were directly related to decreases in joint tenderness and vice versa. For the paradoxical group the relationship was inverted so as hopelessness increased, tenderness decreased, and during periods of intense pain a calm, optimistic mood was maintained. Even though the synchronous group fared better during the one to two year follow-up period of the study, it is interesting to speculate on the possible mechanisms underlying the calm mood state—perhaps coping or optimism triggered by the extreme condition.
Lichtenberg et al. (1984) and Lichtenberg et al. (1986) reported hypochondriasis as the predictor most highly related to perceived pain for elderly osteoarthritics, the pain-hypochondriasis relationship being independent of disease severity. The earlier study found a relationship between life stress and perceived pain, the later one a relationship between lifestyle elements and pain. Low pain score patients, compared to the high, engaged in healthier behaviors, were more socially and recreationally active, were more financially satisfied, and less hassled. This second study suggests that patient well-being depends upon coping not only with the disease process but also with life problems, and lends credence to the contention of Lazarus and Folkman (1984) that well-being depends upon the ability to cope with a wide range of situations.

**Personality Characteristics**

In the past, research on the personality variables of RA patients has tended to focus on negative variables and the possible role of these in onset and development of RA. Little or no evidence has been found for such a role (for review see Anderson et al., 1985). Recently, some studies have looked at the role of the personality variable dispositional optimism in health-related outcomes for various populations such as undergraduates (Scheier & Carver, 1985), postpartum women (Carver & Gaines, 1987), and recovering
alcoholics (Strack et al., 1987). Optimism appears to account for significant variance in health-related outcomes (for reviews see Scheier & Carver, 1987; Tennen & Affleck, 1987).

Optimism. Scheier and Carver (1985) define optimism in terms of generalized outcome expectancies—the consistent tendency to expect good things to happen. They consider it to be a stable personality characteristic with a wide range of applicability across a variety of situations. Optimism may have a variety of consequences, some of them health-related, and may play an important role in the way people regulate their actions. In their review Scheier and Carver (1987) cite direct and indirect evidence linking optimism to different positive health-related outcomes.

Scheier and Carver (1985) began their investigation of optimism with a series of three studies. In Studies 1 and 2 they developed and validated instrumentation for the assessment of dispositional optimism, the Life Orientation Test (LOT). In Study 3 they examined the relationship between optimism and the reporting of commonly occurring physical symptoms of stress. For assessment they used the LOT and a 39-item symptom checklist (Cohen & Hoberman, 1983; Cohen, Kamarck, & Mermelstein, 1983).

Subjects in Study 3 were undergraduates, 79 males and 62 females. They were assessed at the beginning
and end of a 4-week period concluding a semester. Significant correlations were found between optimism and reported physical symptoms at Time 1, \( r(139) = -0.22 \), and at Time 2, \( r(139) = -0.31 \). They also found that optimism at Time 1 predicted symptoms reported at Time 2, \( r(139) = -0.27 \), even when the effects of symptoms reported at Time 1 were partialled out, \( r(139) = -0.18 \). The results indicate that subjects who reported being optimistic were less likely to report being bothered by physical symptoms than subjects reporting less optimism. They were also less likely to develop reportable symptoms over the 4-week measurement period.

Scheier and Carver's (1985) subjects were undergraduates reporting common physical symptoms thought to be stress related. The authors did not report the health status of their subjects. This author presumes the sample to be a nonpatient one, thus generalizability of results may be limited to nonpatient populations. In patient populations reporting of common symptoms may be confounded by the presence of disease symptoms, making generalizability of results difficult. A further limitation of the study is the dependence on self-report. The study found that optimists tended to report fewer symptoms. This may reflect a tendency of optimists to present as happy people not the incidence of physical symptoms. While
the Scheier and Carver (1985) study does provide some evidence for the role of optimism in health-related outcomes, the case is not a strong one.

In another health-related study Maes and Schlosser (1987) found that optimism accounted for only a small proportion of the variance in the well-being of asthmatic patients. The study looked at the role of optimism, coping strategies, trait anxiety, and several other variables in well-being, number of hospital admissions, medication consumption, and asthma-related work absences. Subjects were 223 female and 174 male asthmatic patients assessed in a cross-sectional study. Optimism was measured using items adapted from the Respiratory Illness Opinion Survey (Kinsmen, Jones, Matus, & Schum, 1976), well-being using the Questionnaire for Inner Well-Being (Hermans & Tak-van de Ven, 1973). Analysis was done using stepwise multiple regression. Trait anxiety accounted for most of the variation in well-being, optimism accounted for a small proportion of the variation. The authors do not report pairwise correlations between predictor variables.

The Maes and Schlosser (1987) study found that optimism played only a minor role in health-related outcomes. This may have been a function of the instrumentation used. Test reliability and validity information were not given either for the original
instrument or for the adaptation used in the study. It could be that optimism, as measured in this study, was strongly associated with trait anxiety. If this were the case, then optimism may have played a stronger role in well-being than the figures suggest.

There is evidence to suggest that the health enhancing effects of optimism may be due to the coping strategies optimist use to deal with stress (for review see Scheier & Carver, 1987). In two studies Scheier et al. (1986) examined the relationship between optimism and the use of coping strategies. In Study 1 optimism and coping strategies were assessed using the LOT and the 68-item Ways of Coping Checklist (WCCL; Folkman & Lazarus, 1980, 1985) to which five items had been added. For the Scheier et al. (1986) study, seven factors were extracted by factor analysis of the coping response.

One of these factors became the coping strategy scale referred to as "problem focused." This scale will be referred to here as the coping strategy scale "problem solving," to avoid confusion with the term "problem focused" used by Lazarus and Folkman (1984) to refer to one of two broad categories of functionally dissimilar forms of coping. The same procedure will be used when referring to coping strategy scales similarly named in other papers.

Subjects were undergraduates, 181 men and 110
women. Scheier and colleagues found that optimism was positively associated with the use of the strategies problem-solving coping, $r = .17$, positive reinterpretation, $r = .23$, and acceptance/resignation, $r = .13$, and with seeking of social support but only among men, $r = .15$. Optimism was negatively associated with denial/distancing, $r = -.12$. When perceived situation controllability was considered it was found that optimism was associated with acceptance/resignation only when the stressful situation was uncontrollable, $r = .33$. The relationship between optimism and coping strategies appears to be complex.

In Study 2 Scheier et al. (1986) assessed optimism and the use of coping strategies using the LOT and a booklet containing a set of five hypothetical, stressful situations. Subjects were 100 undergraduates (66 men and 34 women). They were asked to record how they would respond to each hypothetical situation. Responses were rated in terms of eight coping dimensions. Associations with optimism were computed in the form of nonparametric correlations (Kendall's tau). Optimism was positively associated with the dimensions problem-solving coping, $r = .14$, suppression of competing activities, $r = .21$, and seeking of social support, $r = .20$. Optimism was negatively linked with focusing on stressful feelings, $r = -.21$, and
disengagement from effort, $r = -0.30$. Optimists tend to see the best in situations and approach problems directly rather than engage in avoidance or dwell on difficult feelings. For undergraduates, optimists also tend to resign themselves to situations seen as uncontrollable.

Scheier et al.'s (1986) studies provide evidence for the relationship between dispositional optimism and coping strategies but caution is necessary in interpretation. While the results may generalize to the undergraduate population they may not apply to other populations such as the chronically ill. The use of hypothetical situations in Study 2 further limits interpretation. Responses to hypothetical situations may be quite different from responses to actual situations. While optimistic undergraduates may tend to resign themselves to uncontrollable hypothetical situations, it is not known if the optimists among RA patients would tend to resign themselves to actual situations perceived to be uncontrollable. Chronic RA patients have to deal with a number of disease related situations, such as pain, loss of mobility, and deformity, some or all of which may be perceived as uncontrollable.

Carver and Gaines (1987) examined the role of dispositional optimism in the development of depressive symptoms in postpartum women. Subjects were 75 women.
Optimism was assessed using the LOT, depression assessed using a modified version of the Beck Depression Inventory (BDI; Beck, 1967). Both optimism and depression were assessed several weeks before childbirth. Depression was measured again three weeks postpartum. Dispositional optimism correlated negatively with depression measured during pregnancy, \( r(73) = -0.41 \), and postpartum, \( r(73) = -0.43 \). Optimism was also predictive of resistance to the development of depression postpartum. The partial correlation between optimism and postpartum depression was computed after partialling out the effects of depression reported initially. The correlation was significant, \( r(72) = -0.28 \). Optimists, among women in the last weeks of pregnancy, tend to be less depressed and have more resistance to the development of postpartum depression.

The Carver and Gaines (1987) study replicates conceptually the earlier study (Scheier & Carver, 1985, Study 3) which examined optimism and the development of physical symptoms in undergraduates during a stressful period of time. The Carver and Gaines (1987) results extend the generality of the earlier findings to a different population and a different outcome measure. The results provide further evidence for the role of dispositional optimism in health-related outcomes but must be considered in the light of study limitations. Carver and Gaines (1987) considered only the role of
optimism and initial depression in the development of postpartum depression. There were other unexamined variables, such as difficulty of birth, that may have been significant. Interpretation regarding the role of optimism is limited to suggesting that this personality variable appears to be associated with the development of postpartum depression.

One recent study relates optimism to a concrete behavioral outcome. Strack et al. (1987) examined dispositional optimism, hassles, uplifts, and several demographic variables as predictors of success in completing a transition program after treatment for alcoholism. Subjects were 54 men who had completed a 30-day inpatient treatment program and were currently in a 90-day inpatient aftercare program designed to assist them in a return to a working life. Optimism, assessed by the LOT, and education level were each positively associated with successful outcome. For optimism, the correlation with all other predictor variables partialled out was moderate, $r = .48$. However, the zero-order correlation was lower, $r = .29$. Other predictor variables showed no significant association. Dispositional optimism is a significant predictor of the success of stabilized alcoholics in completing an aftercare program.

The Strack et al. (1987) study examined the relationship of optimism and other variables to a
behavioral outcome, success or failure of recovering alcoholics to complete a treatment program. The authors did not focus exclusively on optimism but included a number of possibly significant variables. With the consideration of a number of predictor variables and the use of a substantively important behavioral outcome as the criterion variable, this study provides particularly strong evidence for the beneficial effects of optimism in a health-related outcome.

The studies reviewed are limited in that they provide only correlational data. No interpretation can be made regarding causation. They do, however, provide evidence that dispositional optimism is associated with positive health outcomes in several domains and for several different populations.

Coping Strategies

According to the theoretical perspective of Lazarus and Folkman (1984), coping is the process by which stress is modified and a positive sense of well-being maintained. Specific coping strategies may contribute to or detract from specific outcomes such as psychological well-being. Generalizations regarding outcome are difficult to make as coping efficacy varies with the form of coping strategy under consideration and may also vary with context (Folkman, Lazarus, Gruen, & DeLongis, 1986). Some problem-focused coping
strategies may be health enhancing (Felton & Revenson, 1984; Vitaliano, Mauiro, Russo, & Becker, 1987), some may not (Aldwin & Revenson, 1987). Some emotion-focused coping strategies may be deleterious to well-being (Felton et al., 1984; Silver et al., 1986), some may not (Felton et al., 1984). Recent studies indicate that two coping strategies appear to have a consistent relationship with psychological well-being, problem solving and wishful thinking (Vitaliano, Katon, et al., 1987). The strategy problem-focused coping is generally positively related to well-being (Folkman, Lazarus, Gruen, & DeLongis, 1986) while the strategy wishful thinking is negatively related (Vitaliano et al., 1985; Vitaliano, Katon, et al., 1987).

There have been a number of recent studies attempting to describe the nature of coping strategies used by patient groups and to define the relationship between these strategies and health-related outcomes such as psychological distress and chronic pain. Of these studies only a few have been done with arthritis patients.

In reviewing the coping literature particular attention was given to the instrumentation used to measure the coping strategies, i.e., wishful thinking and problem solving. This was done to facilitate the comparison of study results, a process made difficult by variations in instrumentation. Although a number of
the reviewed studies used one basic instrument, the WCCL, this has been revised several times, with the result that WCCL revisions vary in size, content, and subscale definition.

Vitaliano et al. (1985) examined the psychometric properties of a revised set of five coping strategy scales (problem solving, seeks social support, blamed self, wishful thinking, avoidance) and of the original seven WCCL scales (Aldwin, Folkman, Schaefer, Coyne, & Lazarus, 1980). Subjects were three distressed groups: psychiatric outpatients (n = 83), spouses of patients with Alzheimer’s disease (n = 62), and medical students (n = 425). To establish construct validity the authors examined the relationships of coping to the source of the stressor, appraisal, and distress (anxiety, depression). With regard to distress, the theoretical framework developed by Lazarus and Folkman (1984) predicted that coping strategies should be related to the response to stress (e.g., psychological distress). Multiple regression analysis was used to determine the extent to which coping strategies predict the distress variables anxiety and depression. Depression was assessed using three instruments: the BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) for the psychiatric outpatient and spouse subsamples; the Hamilton Depression Scale (Hamilton, 1960) also for the spouse subsample; and the SCL-90-R (Derogatis, 1977)
depression scale for the medical students. Anxiety was assessed using the SCL-90-R anxiety scale. The study found that the associations of the revised coping strategy scales with the variables anxiety and depression were generally stronger than the associations of the original scales. The revised wishful-thinking scale was positively associated with depression in all three subsamples. The revised problem-solving scale was negatively associated with depression in both the medical student and spouse subsamples. The relationships for anxiety followed a similar pattern although the relationships for depression were stronger than those for anxiety. In addition, the strategy, seeks social support, was associated with anxiety, for the spouse and student samples, but not depression.

In discussing substantive issues Vitaliano et al. (1985) cited Abramson, Seligman, and Teasdale's learned helplessness model. Coyne, Aldwin, and Lazarus (1981) had also referred to this model and predicted that problem-focused forms of coping should be related negatively to depression. Vitaliano et al.'s (1985) study provides evidence to support this prediction. Vitaliano et al. (1985) did not discuss substantive issues regarding wishful thinking. However, Lazarus, Averill, and Opton (1974) have suggested that wishful thinking is theoretically important as an "attention
deployment" coping strategy. It is a form of cognitive avoidance which may provide a respite from the stress of chronic illness but may, in the longer term, contribute to diminished psychological well-being. Vitaliano et al.'s (1985) results lend empirical support to this concept.

In a further psychometric study, Vitaliano, Maiuro, Russo, and Becker (1987) examined two methods (raw scores and relative scores) of analyzing and interpreting data collected using the revised WCCL (Vitaliano et al., 1985). The relationships of coping strategies to depression were examined, using both raw and relative scores, in three samples similar to those used in the Vitaliano et al. (1985) study: psychiatric outpatients (n = 145), spouses of Alzheimer's patients (n = 66), and medical students (n = 185). Depression was measured using the brief version of the BDI (Beck & Beck, 1972) for all three subsamples, and also using the HDS for the spouse sample.

The study found that, as hypothesized, the coping strategy problem solving was inversely related to depression, and the strategy wishful thinking was directly related. These relationships, expected in terms of theory and of evidence from related studies, were demonstrated more clearly with the use of relative scores than the use of raw scores. Relative scores take into account individual differences in total
coping and in response style. They are ipsative and permit the use of both idiographic and nomothetic comparisons. Several authors have argued for the merits of ipsative measurement in the study of transactional processes such as coping (Coyne & Lazarus, 1979; Folkman, Lazarus, Pimley, & Novacek, 1987).

In addition to assessing psychometric properties of scoring methods, the Vitaliano, Maiuro, Russo, and Becker (1987) study provides evidence regarding the associations of the two coping strategies problem solving and wishful thinking and depression, an aspect of psychological distress. This evidence supports similar findings by Vitaliano et al. (1985).

In another study, Vitaliano and colleagues (Vitaliano, Katon, et al., 1987) examined the relationships of three coping strategies (wishful thinking, problem solving, and seeking social support) to distress within groups differing with respect to panic diagnosis. They also examined coping and distress as indices of illness behavior in panic disorder. They found significant differences in the coping strategies used and levels of distress reported. Subjects were 195 female primary care patients, divided into three groups (34 with panic disorder, 30 with simple panic, 78 with no panic) for most of the data analyses. Coping was assessed using three subscales
(problem solving, wishful thinking, seeks social support) of the revised WCCL (Vitaliano et al., 1985). Relative scores were used (Vitaliano, Mauiro, Russo, & Becker, 1987). Distress was assessed using several instruments: the short form of the BDI (Beck & Beck, 1972), Zung Anxiety Scale (Zung, 1965), and SCL-90 depression, anxiety, and phobic-anxiety scales (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). Scores from the distress measures were combined, using principal component analyses into two factors, anxiety and depression.

Intergroup comparisons, done using ANOVA tests, found that the panic disorder group used proportionately more wishful thinking than the no panic group. They used proportionately less of the problem-solving coping strategy than the simple panic and no panic groups. Regarding anxiety, each group differed significantly from the other two groups, with the panic disorder group reporting the most anxiety and the no panic group, the least anxiety. For depression, the two panic groups differed significantly from the no panic group, with these two groups reporting more depression than the no panic group. Intragroup comparisons found that for the panic disorder group depression and anxiety were both positively associated with wishful-thinking coping and negatively associated with problem-solving coping. For the no panic group,
depression only was positively related to wishful-thinking coping and negatively related to problem-solving coping. The study also found that number of phobias was significantly related to coping and distress, although distress accounted for less of the variance across phobic groups. The high phobic group used proportionately more wishful thinking than the low phobic group, and reported more depression and anxiety.

The Vitaliano, Katon, et al. (1987) study suggests that, for panic and phobia patients, coping strategies are perhaps more important than distress in distinguishing between groups differing with respect to panic diagnosis or number of phobias.

In addition, the study provides evidence of the positive relationship between the strategy wishful thinking and distress, and the negative relationship between the strategy problem-solving coping and distress. These findings are similar to those of Vitaliano et al. (1985). The authors suggest a consistency in the relationships of these two coping strategies to psychological distress and refer to a similar pattern of results from 12 studies, representing more than 2000 cases from various populations, done by Vitaliano et al. (cited in Vitaliano, Katon, et al., 1987). The coping strategy problem solving was negatively related to distress while the strategy wishful thinking was positively
related. The authors mention similar findings by others for problem solving (Billings & Moos, 1984) and wishful thinking (Coyne et al., 1981).

Vitaliano, Katon, et al.'s (1987) study was poorly reported in terms of sample and subsample composition. In addition, a set of results was included which seemed to contradict the main study findings. The inconsistent results found that, for a group of panic patients and a matched group of nonpanic outpatients, the panic patients used proportionately more of the strategy problem solving and less of wishful thinking. This apparent contradiction was not discussed.

The three studies by Vitaliano and colleagues (Vitaliano et al., 1985; Vitaliano, Katon, et al., 1987; Vitaliano, Maiuro, Russo, & Becker, 1987) provide evidence for a consistent pattern of associations between two coping strategies and psychological distress, with one strategy (problem solving) being negatively related and the other wishful thinking) being positively related. The pattern showed little variation across a variety of populations.

Arthritis patients. Several studies have examined the coping strategies used by arthritis patients to deal with pain or their illness. Of these, some have also assessed the relationship between coping strategies and psychological distress or adjustment.

In a study of osteoarthritis (OA) patients, Keefe
et al. (1987) found that one coping factor, identified as Pain Control and Rational Thinking, was associated with lower pain levels, better health status, and lower levels of psychological distress. Subjects were 54 OA patients (17 men, 34 women) having chronic knee pain. The study examined the relationship of two pain coping strategies, demographic variables (age and sex), and medical status variables (disease severity in terms of X-ray grading, obesity, disability support status, and chronicity of pain) to pain, health status, and psychological distress.

Coping strategies were assessed using The Coping Strategies Questionnaire (Rosenstiel & Keefe, 1983). The two coping factors used in this study were derived by factor analysis of the CSQ responses (Keefe et al., 1987). Factor 1, Coping Attempts, accounted for 40% of the variance in CSQ responses. Individuals scoring high on this factor rated themselves as frequently using strategies on most of the CSQ subscales. They appeared to be coping with pain in an active fashion. Factor 2, Pain Control and Rational Thinking, accounted for 20% of the variance. Individuals scoring high on this factor rated their ability to control and decrease pain as high and endorsed few of the catastrophizing items. Pain was assessed using the McGill Pain Questionnaire (MPQ; Melzack, 1975) and one dimension, the pain scale, of the Arthritis Impact Measurement
Scales (AIMS; Meenan, Gertman, & Mason, 1980). Health status was assessed using two dimensions of the AIMS, physical disability and psychological disability. Psychological distress was assessed using the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983).

Relations between predictor and criterion variables were examined using hierarchical multiple regression with a separate analysis carried out for each of the five criterion measures, pain (two measures), health status (psychological disability and physical disability), and psychological distress. All regression equations reached significance. Those scoring higher on Factor 2, Pain Control and Rational Thinking, had lower pain levels, better health status, and lower levels of psychological distress. These effects were not attributable to disease severity which was entered into the regression equations before the coping variables. For health status and psychological distress the effects were not due to pain intensity which was entered before coping variables. Disability support status also predicted, but to a lesser extent, variance in outcomes measures. Those receiving disability support had higher pain levels and poorer health status.

The Keefe et al. (1987) study seems to provide evidence for the association of a type of coping strategy with pain, health status, and psychological
disability. The study examined a number of variables and included not only self-report data but also medical status data such as X-ray reports. However, the sample size (N = 54) is small for the number of variables examined. In addition, study results may have been confounded in that the Factor 2 items measuring pain control may, in fact, by assessing a domain similar to that assessed by the criterion measure for pain. The authors did not provide sample items from the coping scale used. The Factor 2 items measuring rational thinking or absence of catastrophizing presumably did not measure criterion domains and were free from a confound effect.

The Keefe et al. (1987) study provides weak evidence confirming the Lazarus and Folkman (1984) contention that well-being is associated with coping. They describe catastrophizing as an emotion-focused coping strategy which serves to increase psychological distress.

In a similar study Anderson and Rehm (1984) examined the relations among coping strategies, personality, perception of pain, and reactions of family members in three chronic pain groups, RA, sickle cell anemia, and low back pain. Subjects were blacks (46 men and 14 women), 20 per subsample. Coping strategies were measured using the Self-control Schedule (Rosenbaum, 1980). Perception of pain was
measured using a modification of the MPQ. Multivariate analysis found no differences between the three subject groups in coping, personality, or perceived pain. A modest, $r = -0.20$, but nonsignificant relationship was found between coping strategies and the MPQ evaluative dimension of pain for the total sample. There is a slight tendency for chronic pain patients who take a self-control approach to solving behavioral problems to have less pain. The authors report a significant inverse relationship between neuroticism and coping strategies, $r = -0.46$, $p < 0.05$, for the arthritic subsample. Arthritic patients who reported more neuroticism used fewer coping strategies while in pain. The reverse was true for the sickle cell patients. The authors did not discuss the possible reasons for these findings.

Anderson and Rehm's (1984) study provides weak evidence for a relationship between coping strategies and perceived pain and stronger evidence for an inverse relationship between coping and neuroticism. This second finding is relevant to the present study in that neuroticism is an aspect of negative well-being. Evaluating the strength of the finding is difficult as information regarding instrumentation was not given. In addition, the study is poorly reported and conceptually muddled. For instance, neuroticism and extraversion are described as personality variables
while personality itself is referred to as a measure of coping. Instrumentation for assessing these two variables is not reported.

A detailed examination of the coping strategies used to deal with chronic illness is provided by Felton and colleagues (Felton & Revenson, 1984, 1987; Felton et al., 1984). In all three studies subjects were middle-aged and older adults with one of four different chronic illnesses, two defined as uncontrollable (RA and cancer) and two defined as controllable (hypertension and diabetes). Coping was assessed using items derived primarily from the WCCL (Folkman & Lazarus, 1980) and subscales derived through factor analysis (Felton et al., 1984). Respondents were asked to report how often they used a particular strategy in reaction to being ill. The subscale of most interest to the present study is wish-fulfilling fantasy, which has 6 of its 7 items in common with the wishful-thinking subscale (Vitaliano et al., 1985).

Felton and Revenson (1984) examined the influence of two coping strategies (information seeking, wish-fulfilling fantasy) on psychological adjustment when illness controllability varied. They found both these strategies associated with measures of adjustment. Subjects (N = 151) were interviewed at two times, 7 months apart. Psychological adjustment was assessed using an acceptance of illness scale derived from
Linkowski's (1971) Sickness Impact scales and two subscales of the Bradburn Affect Balance scale (Bradburn, 1969), positive and negative affect. Data analysis was by means of hierarchical multiple regression. For cross-sectional analyses, separate analyses were done for each of the three measures of psychological adjustment. Separate equations were calculated for each coping strategy with illness controllability entered before coping strategies. The predictor variables and the interaction terms (illness controllability x coping strategy) explained between 4% and 27% of the variance in adjustment. For Time 1, wish-fulfilling fantasy was associated with increased negative affect, $\Delta R^2 = .11$, and poorer acceptance of illness, $\Delta R^2 = .15$. Information seeking was associated with increased positive affect, $\Delta R^2 = .13$. There were no significant interaction effects. For Time 2, the pattern of results was similar although the role of information seeking in positive affect was weaker and nonsignificant. The role of the two coping strategies was similar for all illnesses.

Further analyses were done to determine the role of coping in adjustment level changes from Time 1 to Time 2. Two significant but modest effects were found. Information seeking was linked with reduced negative affect, and wish-fulfilling fantasy linked to lower acceptance of illness. Study results indicate that, for
four patient populations, information seeking, an active problem-focused strategy, was salubrious, regardless of illness controllability. On the other hand, wish-fulfilling fantasy, an avoidant emotion-focused strategy, was deleterious and somewhat more powerful in its association with psychological adjustment.

The salubrious associations of information seeking, according to Felton and Revenson (1984), probably have, in part, to do with the fact that patients with more information about their illness may be in a better position to engage in appropriate health care measures. They further speculate that the value of information seeking may extend beyond the value of the information itself. This strategy may, in a sense, operate as an emotion-focused "attention deployment" strategy (Lazarus, Averill, & Opton, 1974) and serve to focus attention on presumably useful matters. The authors also suggest that information seeking may be associated with an optimistic outlook which is compatible with the idea that information obtained may be useful.

Felton and Revenson (1984) describe wish-fulfilling fantasy as an avoidant strategy that provides no real escape from the stresses of illness. They speculate that chronically ill patients may become caught in a difficult cycle in which unhappiness and
adjustment difficulties result in wishful ruminations, which in turn reinforce the feelings of unhappiness and contribute to a limited acceptance of the illness. They suggest that individuals caught in this set of mutually reinforcing relationships will experience an erosion of positive affect. This interpretation is compatible with the Lazarus and Folkman (1984) conceptualization of coping as a transactional process.

The Felton and Revenson (1984) study provides only modest evidence for the role of coping in psychological adjustment in patient populations. Replication to confirm results is necessary.

In a preliminary study, Felton et al. (1984) examined the data (N = 170) from the first wave of the longitudinal study (Felton & Revenson, 1984) to determine the relations of six coping strategies to four measures of psychological adjustment. Data were analyzed in a series of hierarchical multiple regression equations. Each adjustment measure was significantly explained by two or three coping strategies which uniquely accounted for up to 11% of the variance. Three emotion-based coping strategies (wish-fulfilling fantasy, emotional expression, self-blame) were related to poorer adjustment. Two strategies, one problem focused (information seeking) and the other referred to as a cognitive strategy (cognitive restructuring), were related to greater
positive affect. The study provides modest to weak evidence for a relationship between coping strategies and psychological adjustment.

Felton et al.'s (1984) study was adequate as a preliminary step. The study demonstrated the utility of the stress and coping framework in explaining variation in psychological adjustment and provided evidence for specific associations to be explored in further studies.

In a third study using the same data base, Felton and Revenson (1987) examined the relationships of age and illness stressors to differences in coping with chronic illness. They found that age plays some role in determining coping strategy choice. Subjects, procedure, and coping assessment were the same as in Felton and Revenson (1984). Illness stressors were assessed using five variables, three variables measuring illness severity (physical limitations, a summative index of illness-related problems, a subjective appraisal of the seriousness of the illness) and two measuring illness controllability (health locus of control, medical diagnosis). On a bivariate level the use of the strategies information seeking, emotional expression, and self-blame declined with age at Time 1. On a multivariate level, controlling for the effects of all five illness stressors, information seeking and emotional expression, but not self-blame,
declined with age. Variation in the use of wish-fulfilling fantasy was explained by the interaction between age and perceived seriousness of illness. At higher levels of perceived seriousness the relation between age and wish-fulfilling fantasy was strong and negative, compared to a weak, negative association at lower levels. In the four patient populations, the older patients used less wish-fulfilling fantasy when they perceived their illness to be serious. For arthritic and other patient populations, there was a limited, modest association between age and coping strategy usage when the stressor was chronic illness.

Felton and Revenson (1987) provide evidence relevant to the studies of arthritic populations which are generally older than community adult populations. Their study is well reported and conceptually clear. They suggest that the decline with age in the use of emotion-focused strategies may be characteristic of coping reactions to illness. Health-related stresses are "on time" for older persons (Neugarten, 1976). Felton and Revenson (1987) suggest that older persons may be less provoked by illness stressors as they are expected stressors for older persons.

The above studies examined the coping strategies used by arthritic patients to cope with pain (Anderson & Rehm, 1984; Keefe et al., 1987) or their illness (Felton & Revenson, 1984, 1987; Felton et al., 1984).
For this population, the evidence indicates that coping strategies are associated with psychological well-being. Two studies found that the use of coping strategies was inversely related to psychological distress (Keefe et al., 1987) and neuroticism (Anderson & Rehm, 1984). Several studies examined coping strategies in more detail. One found the strategies information seeking and wish-fulfilling fantasy associated with psychological adjustment, the former in a health-enhancing direction and the latter in the reverse direction (Felton & Revenson, 1984). A second study found that age played a modest role in the use of coping strategies and that the strategy escapism was associated with increased psychological symptoms (Felton & Revenson, 1987). These studies provide an indication that, for arthritis patients, some coping strategies (for instance, wish-fulfilling fantasy) bear a significant relationship to psychological well-being.

Other patient groups. In attempting to understand the coping strategies used by arthritic patients, it may be helpful to look at studies examining coping strategies used by other patient groups. Of the studies reviewed here, one is an intervention study, the rest are correlational. All of the studies examine the relationship of coping to health-related variables.

In the experimental study Martelli, Auerbach, Alexander, and Mercuri (1987) assessed the effects of
three stress management interventions (emotion-, problem-, and mixed-focused) on preprosthetic oral surgery patients. The 46 subjects were low to lower-middle class in socioeconomic status, 58% female, and 57% black, 43% white. Subjects were assessed 2-4 weeks prior to surgery; the day of surgery, before and after the 20-minute intervention preceding surgery, and 10 minutes after surgery; and at a 7-day follow-up visit. Four coping variables (problem- and emotion-focused coping, proportion of problem- to emotion-focused coping, and information preference) and four response variables (state anxiety, adjustment, satisfaction, pain intensity) were used. Coping variables were assessed, at the initial interview, using the WCCL (Folkman & Lazarus, 1980) for emotion- and problem-focused coping, and the information scale of the Krantz Health Opinion Survey (Krantz, Baum, & Wideman, 1980) for information preference, a problem-specific type of coping. Information preference and problem-focused coping were highly correlated (r = .70). State anxiety was assessed, at each of the 4 measurement times, using a 4-item version of the A-State scale, State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970). Pain was assessed, using a visual analogue scale (VAS), immediately after surgery, as was patient adjustment, as measured by surgeon ratings. Patient satisfaction was assessed at the follow-up appointment.
Data were analyzed using multiple analysis of covariance and repeated measures analysis of covariance.

The study found that, in terms of adjustment and patient satisfaction, the mixed-focus intervention group had the most positive response, the emotion-focused intervention group the least. For all three response measures, the better response to surgery resulted when the low information preference subjects were given the emotion-focused intervention and the high information preference subjects were given the problem-focused one. For state anxiety, low information preference subjects in the problem-focused treatment group had more anxiety than high information preference subjects in the same treatment group. For pain, problem-focused coping, in conjunction with treatment, was the best predictor. Patients scoring high on problem-focused coping, and given a problem-focused intervention, experienced the least pain postoperatively. In general, for prosthesis surgery patients, the best response to surgery was found when the treatment intervention matched the information preference of the subject, a variable related to problem-focused coping, or when the intervention was mixed-focus. The worst response was when the intervention was emotion-focused.

Martelli et al. (1987), in discussing their
results, refer to Lazarus and Folkman's (1984) theoretical framework. The overall superiority of the mixed-focus intervention is consistent with the Lazarus and Folkman notion that the coping used to deal with a stressful event generally involves both problem-focused and emotion-focused coping strategies. The finding that emotion-focused coping produced the poorest adjustment is consistent with their contention that problem-focused interventions are more effective than emotion-focused in situations involving transitory stressors with a high probability of a return to normal functioning (Folkman & Lazarus, 1980). For chronic arthritis patients, problem-focused coping strategies may not be effective in dealing with the disease condition.

The Martelli et al. (1987) study, an intervention study, provides strong evidence for the role of coping strategies in health-related outcomes and makes possible inferences about causation. The study suggests that problem-focused coping has a health-enhancing effect. The other studies reviewed here are correlational and provide evidence about association and the probabilities of prediction but not cause and effect.

Turner, Clancy, and Vitaliano (1987) assessed the relationships of stress, appraisal, and coping to chronic low back pain. Subjects were 85 community
adults (44 male, 41 female) with low back pain of at least 6 months duration. Appraisal and coping were assessed using a three-part revised WCCL: the first part consisting of a list of 14 stressors commonly reported by back pain patients; the second part, 42 coping strategy items in five subscales (Vitaliano et al., 1985); and the third part, 14 appraisal items. Relative scores (Vitaliano, Maiuro, Russo, & Becker, 1987) were used. Present pain was assessed using the Pain Rating Index (PRI) score of the MPQ and pain intensity using the VAS. On the basis of type of stressor reported, subjects were divided into two groups: those reporting pain, physical limitations, or related mood changes as the primary stressor (43%); and those reporting other stressors.

Group differences were found. Patients who identified pain as their primary stressor reported using significantly less of the coping strategy problem solving and more of the strategy avoidance than those reporting other stressors such as work/financial or family stressors. For the group of patients reporting pain as the primary stressor (n = 37), further analysis, a stepwise multiple regression, was conducted using each of appraisal items to predict coping strategy use, and both appraisal items and coping strategy subscales to predict pain scores. Wishful-thinking scores were positively associated with PRI.
scores. The findings regarding appraisal were, at best, indicative of trends only and are not reported here. In summary, for low back pain patients, only 43% reported pain as the major current stressor. The strategy problem-solving coping was used less by this group than by others. Within this group reporting pain, the strategy wishful-thinking was used more by those reporting more present pain.

Turner et al. (1987) suggest that patients may view pain as less amenable to change than work or family situations, in which case, it would be reasonable for patients reporting pain as the primary stressor to use an avoidant emotion-focused coping strategy rather than a more active problem-focused strategy (e.g., problem solving). Avoidance coping is usually expected when there seem to be few alternatives for resolution (Lazarus & Folkman, 1984). In the case of chronic arthritis patients dealing with pain or their illness, one would expect increased avoidance coping perhaps in the form of more wishful thinking.

The Turner et al. (1987) study consisted of two sets of analysis, one comparing two subject groups (those reporting pain as the primary stressor and those reporting other stressors), and one examining appraisal, coping and pain in the group reporting pain. The intergroup comparisons were adequately done and clearly reported. The intragroup analysis, however,
based its findings on seven regression analyses performed on a small sample (n = 37). The small sample size and the extensive analysis reduce the certainty with which one can make inferences from the results, such as the reported relationship between pain and the coping strategy wishful thinking. Hence, this finding and others from this aspect of the study are best regarded as tendencies only. In addition, the appraisal variables consisted of a single item which was not described in the study, and appraisal data sets were constituted from only a partial set of item responses.

Silver et al. (1986) examined the relations among stress, coping, emotional dysfunction, social support, locus of control, and severity of symptoms in genital herpes patients (35 women, 32 men). Data were collected in a single structured interview. Stress was assessed using the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978). Coping was assessed using the 64-item WCCL (Lazarus, 1982) with the subject asked to respond in terms of how he or she dealt with the stresses associated with genital herpes. The scales wishful thinking and problem solving are among the 7 subscales. Emotional dysfunction was measured using the SCL-90-R (Derogatis, 1977), social support using the Social Support Index (Wilcox, 1981), and locus of control using the Internal/External Locus of Control
Scale (Rotter, 1966). Symptom severity was assessed in terms of symptom recurrence, duration, pain, and bother, but measurement details were not reported. Data were analyzed using a series of stepwise multiple regression analyses.

Silver et al. (1986) found that, among the predictor variables, wishful thinking correlated with emotional dysfunction ($r = .34, p < 0.01$) but stress did not. For the regression analyses, four equations explained the most variation in symptom severity. In two of these, wishful thinking accounted for variability, in a positive direction, in symptom recurrences and bother. Two other coping strategies (minimization of threat, growth coping) also accounted for variability in symptom severity. Negative life stress was associated only with duration of symptoms. Locus of control was associated with recurrences and bother. In summary, for genital herpes patients coping with the stresses associated with their disease condition, several variables are linked with symptom severity.

The Silver et al. (1986) study provides modest evidence for the association of wishful thinking with increased emotional dysfunction and symptom severity in a patient population coping with a chronic disease condition. The study is similar to others finding evidence for a relationship between coping and outcomes.
of pain (Anderson & Rehm, 1984; Martelli et al., 1987) and health status (Keefe et al., 1987) in patient groups, and to those providing support for a relationship between coping and psychological adjustment (Felton & Revenson, 1984; Felton et al., 1984; Keefe et al., 1987), also in patient groups. The Silver et al. (1986) study, like those by Felton and colleagues (Felton & Revenson, 1984; Felton et al., 1984), are of particular interest to the present study. Both provide evidence regarding the associations of the coping strategy wishful-thinking, or the closely related strategy wish-fulfilling fantasy.

Wishful thinking can be considered an avoidance strategy. Lazarus and Folkman (1984) point out that avoidance, in the context of illness, can be considered ineffective if the person fails to use appropriate problem-focused coping to actively deal with the illness. Lending support to this idea is evidence from studies of behavioral avoidance strategies, which seem to act in a similar fashion. Philips (1987), in a review of avoidance behavior in chronic pain patients, found that this behavior plays a role in sustaining and perhaps augmenting chronic pain. The use of avoidance behavior seems to be associated with a decreased sense of control over pain, and an increased expectation that exposure will increase pain. The author suggests a cyclic pattern of self-defeat with avoidance behavior.
reducing the sense of personal self-efficacy which, in turn, leads to further withdrawal and a growing intolerance of stimulation.

Although many studies have found a relationship between coping and health-related outcomes or well-being, some have found little or none. Maes and Schlosser (1987), in a study reviewed earlier, examined the role of cognitions, optimism, and coping in well-being, hospital admissions, medication consumption, and absences from work due to asthma in asthma patients. Coping strategies were assessed using the Asthma Coping Questionnaire (Maes, Schlosser, & Vromans, 1986). Among the results was evidence that the coping strategy, reacting emotionally, played a minor role in explaining variation in number of work absences but almost no role in well-being.

The Maes and Schlosser (1987) study was comprehensive in terms of both predictor and criterion variables examined and extensive with a large sample size. For the coping instrument the authors report subscale internal consistencies ranging from .63 to .84. However, the authors fail to report other reliability or validity figures, or to include even samples of the coping items used. With incomplete information regarding the instruments used, results are difficult to assess.

In summary, studies of several patient groups
provide evidence that coping strategies are associated with health related outcomes including psychological distress. The single intervention study (Martelli et al., 1987) examined the efficacy, for oral surgery patients, of three types of interventions teaching coping strategies which were emotion-focused, problem-focused, or mixed-focused. They found that, in general, the mixed-focused intervention had the most health-enhancing effects, the emotion-focused the least. The problem-focused intervention, when given to subjects who showed a preference for the use of problem-focused strategies, was associated with the least postoperative pain. The other studies, all correlational, examined the associations of specific coping strategies. Two studies found the coping strategy wishful thinking to have significant associations with emotional dysfunction, symptom recurrences, and symptom bother in genital herpes patients (Silver et al., 1986), and pain in chronic low back pain patients reporting pain as their primary stressor (Turner et al., 1987). In addition, this group of chronic low back pain patients used less of the coping strategy problem-solving than a group of similar patients reporting other events as their primary stressors.

From the empirical evidence wishful thinking seems to be emerging as an important coping strategy in
predicting psychological distress and other health-related variables. Theoretically, it is important as an avoidant strategy which may provide temporary release from a current stressor but which, in the long run, may contribute to increased psychological distress and an erosion of positive affect. Empirically, there is some evidence for the positive associations of the coping strategy problem-solving with health-related outcomes such as reduced pain.

Community adults. Numerous studies have examined the coping strategies used by adults not classified as patients. Those concerned with the relations between coping strategy use and psychological distress may be relevant to the present study. Pertinence may be limited in that community adult populations differ from chronic patient populations in situational variables such as health status. Several of these studies are reviewed here (Aldwin & Revenson, 1987; Folkman & Lazarus, 1986; Folkman, Lazarus, Gruen, & DeLongis, 1986). Also reviewed are two studies examining facets of coping which may be pertinent to the study of the chronic RA patient population, coping and aging (Folkman et al., 1987), and coping and appraisal of encounters as changeable or not. The chronic RA patient population is an older one consisting of persons having a disease which is largely unchangeable.

Aldwin and Revenson (1987) examined the relations
among coping, perceived stress, perceived coping efficacy, and psychological symptoms in community adults. The study was a longitudinal survey study consisting of two measurement times which were either 8 or 17 months apart. Subjects were 291 adults (62% female). Coping was assessed using a 48-item, 8-subscale WCCL with items taken from Folkman and Lazarus (1985) and subscale construction based on factor analysis of the sample data. Of the subscales, three are of particular interest because they share items in common with the two subscales, wishful thinking and problem solving. Escapism has four of seven items in common with wishful thinking. Cautiousness has three of six items in common with problem solving while instrumental action has five of seven items in common with this strategy. Psychological symptoms were assessed using the Langner 22-Item Screening Score (Langner, 1962). Perceived stress was measured with respect to a single stressful episode, using a 7-point scale. Perceived efficacy was measured with regard to the handling of this episode, using a 5-point scale.

The relations between coping strategies and psychological symptoms at Time 2 were examined using stepwise multiple regression. The set of coping strategies explained 44% of the variance in symptoms with the emotion-focused strategy escapism accounting
for much of this variance, $\Delta R^2 = .39$, in a positive relationship to symptoms. Adding prior symptoms to the equation increased total variance accounted for to 56%, but decreased the variance associated with escapism to 19%. Coping effectiveness was further assessed in a series of hierarchical multiple regression analyses in which prior symptoms (at Time 1) were entered at step one, perceived stress (at Time 2) entered at step two, a coping strategy entered at step three, and the appropriate stress by coping interaction product term at step four. The total variance explained by the equations ranged from 41% to 54%. Significant main effects were found for three coping strategies but only the effect for escapism accounted for much of the variance, $\Delta R^2 = .13$. A second parallel series of hierarchical multiple regression analyses were done with perceived efficacy entered at step two instead of perceived stress. Significant main effects were found for five coping strategies with escapism accounting for the largest proportion of variation in symptoms ($\Delta R^2 = .15$). For both series there were two significant interaction terms but they accounted for 5% or less of the variance. The results indicate that for community adults those reporting a tendency to use escapism in coping with stress also reported increased psychological symptoms, and this was so regardless of perceived stress or perceived coping efficacy.
Aldwin and Revenson (1987) argue that the relations among coping, stress, and psychological symptoms are complex and may be reciprocal in some respects. For instance, it may be that those having greater symptoms and greater stress tended to use the maladaptive strategy escapism which may, in turn, contribute to an increase in psychological symptoms. They provide, however, only weak evidence for the role of this strategy in psychological symptoms. They also report and discuss additional findings concerning the main and interaction effects of other coping strategies. However, these results were exceedingly weak and are best regarded as indicative of trends needing further exploration.

Folkman, Lazarus, Gruen, and DeLongis (1986) examined the relations of coping variables to psychological symptoms and somatic health status. Subjects were 150 community adults, 75 married couples. Subjects were interviewed once a month for six months. The authors examined the relation between personality factors (mastery and interpersonal trust), primary appraisal, secondary appraisal, 8 forms of problem- and emotion-focused coping, and somatic health status and psychological symptoms. Coping strategies were assessed using the revised WCCL (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Two of the coping strategies are of particular interest in that
they have items in common with coping strategies described by Vitaliano et al. (1985). Planful problem solving has five out of six items in common with Vitaliano et al.'s (1985) problem solving. Escape-avoidance has three out of eight in common with wishful thinking. Psychological symptomatology was assessed using the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Covi, Rickels, & Uhlenhuth, 1970; Derogatis et al., 1974). Results were analyzed using a series of hierarchical regression analyses. There were no significant gender differences for coping, appraisal, and personality characteristics with one exception, a difference in primary appraisal. Therefore, responses from both male and female subjects were pooled for data analyses.

For somatic health status the regression equation did not reach significance. For psychological symptoms a series of analyses were done with three sets of predictor variables: personality characteristics, primary appraisal, and coping strategies. Secondary appraisal variables were not included because preliminary analysis indicated that they did not account significantly for variance in psychological symptoms.

Personality variables, primary appraisal variables, and coping strategies accounted for 43% of the variance in psychological symptoms. Coping
strategies accounted for 9% \( (p < .02) \) of the variance when entered after personality and primary appraisal variables, and 20% \( (p < .001) \) when entered after personality variables but before primary appraisal. In a final regression analysis, coping strategies and primary appraisal were combined as a single set and entered into the regression equation after personality variables. Of the part correlations calculated for the coping strategies, only the strategy confrontive coping \( (r = .14, p < .05) \) reached significance. For the strategy planful problem solving, the part correlation \( (r = -.11) \) was significant at \( p < .10 \).

In summary, the Folkman, Lazarus, Gruen, and DeLongis (1986) study indicates that, for a community population, coping strategies as a set account for a significant proportion of the variation in psychological symptoms. Of these strategies confrontive coping was most strongly associated with psychological symptoms, the association being in a positive direction.

In discussing their results, the authors suggested that the failure of emotion-focused forms of coping (for example, escape-avoidance) to contribute significantly to psychological symptoms at a multivariate level may have been due to multicollinearity. At the zero-order level, escape-avoidance correlated with confrontive coping at .52.
They discuss the failure of coping to account for significant variation in somatic health status by referring to the three pathways, postulated by Lazarus and Folkman (1984) through which coping may adversely affect somatic health status. One pathway involves coping strategies, such as denial, which can contribute to ill health by impeding adaptive health behaviors. This pathway operates, most usually, in the presence of health-related stressors. In the case of the Folkman, Lazarus, Gruen, and DeLongis (1986) study, only 6% of the stressors reported were directly related to health. Escape-avoidance, which is similar to denial in that it removes the focus of attention from the problem, was not related to somatic health status. This finding differs from those studies done on patient groups coping with illness or illness-related stressors. Several of these studies found wishful thinking, also an attention deployment strategy, related to illness symptoms (Silver et al., 1986) and pain (Turner et al., 1987). For patient groups, including arthritis patients, if the use of such coping strategies as wishful thinking contributes to physical ill health, it may also contribute to psychological ill health. This is presuming that the two aspects of health are related in a transactional relationship similar to that between person and environment.

Folkman, Lazarus, Gruen, and DeLongis (1986) have
provided a good discussion of their results, although they have in one instance attached more importance to a finding than was perhaps warranted by their results. They discuss the association of planful problem solving with psychological symptoms as a significant finding when perhaps it is best regarded as a tendency.

In another study, Folkman and Lazarus (1986) compared appraisal, coping, emotion, and encounter outcomes in two groups of community adults, those high in depressive symptoms and those low. The data base was the same as that used in Folkman, Lazarus, Gruen, and DeLongis (1986). Depression was measured using the Centre for Epidemiologic Studies Depression Scale (Radloff, 1977). Emotional responses were assessed by asking subjects which of 24 emotions they experienced at the beginning of the stressful encounter, during, and at the conclusion. Encounter outcome was assessed by asking subjects to choose the response item, of several presented, that best described their outcome. The authors found that those high in depressive symptoms used more confrontive coping, self-control, and escape-avoidance than those low in symptoms. There were no differences between the two groups in planful problem solving.

In a third study using the same data base, Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen (1986) used intraindividual analyses to look at the
interrelations among appraisal variables, coping strategies, and encounter outcomes. They found, among other things, that satisfactory outcomes were related to higher levels of planful problem solving and positive reappraisal. They also found that subjects used more problem-focused forms of coping (e.g., planful problem solving) when dealing with encounters appraised as changeable, and more emotion-focused forms (e.g., escape-avoidance) when dealing with encounters appraised as having to be accepted.

In a fourth study, based in part on the same database, Folkman and colleagues looked at age differences in stress and coping processes in younger and older community adults (Folkman et al., 1987). The younger sample consisted of the 75 married couples described as subjects in the three studies just reviewed. For these subjects the mean age of the wives was between 35 and 45 years. The older sample consisted of 141 individuals (53% women) between the ages of 65 and 74. Stress was assessed using the 46 items from the revised Hassles Scale (DeLongis, Folkman, & Lazarus, 1988). Coping was measured with a shortened, 31-item, version of the revised WCCL (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Both raw scores and relative scores were used in reporting some of the results. With respect to reported hassles, the younger group reported relatively more hassles to do with work and
finances than the older group. The older group reported relatively more hassles to do with health. For the stressful events reported as part of the coping assessment, the younger group reported a large proportion of work events (33%), the older group reported numerous health events (33%). Regarding appraisal, the younger group appraised both their family and health encounters as significantly more changeable than did the older group. For coping, the younger group used proportionately more confrontive coping, seeking social support, and planful problem solving, while the older group used proportionately more distancing, acceptance of responsibility, and escape-avoidance except when a health event was the reported stressor. In that context there were no age differences in the use of escape-avoidance. With respect to gender differences in coping, men used more self-control and women used more positive reappraisal and seeking social support.

This study found a consistent pattern of age differences in coping with younger subjects using proportionately more active, interpersonal, problem-focused forms of coping and older subjects using proportionately more passive, intrapersonal, emotion-focused forms of coping with one exception relevant to the present study. When dealing with a health-related stressor, there was no age difference in the use of
escape-avoidance, one of the emotion-focused forms of coping.

Folkman et al. (1987) discussed their results in terms of several possible interpretations (e.g., contextual or developmental). The study found little evidence for a contextual interpretation. With changing contexts there were only a few changes in age differences in reported coping strategy use, providing support for a developmental interpretation. The younger subjects used more active coping and more frequently appraised stressful events as changeable. The older subjects used more passive forms of coping and more frequently appraised stressful events as unchangeable. According to Lazarus and Folkman (1984) effective coping is congruent with the possibilities for coping in a specific situation. Presuming that subjects were being realistic in their appraisal, both younger and older subjects were using adaptive forms of coping. It may be that the change in coping pattern from younger to older persons reflects a change in the pattern of stressful situations presenting themselves to persons in different developmental stages.

The evidence regarding age differences in coping are relevant to the study of RA patients who, as a group, made up an older sample. The evidence regarding gender differences is also relevant. In RA patient populations the greater proportion of patients are
female. Any study of this patient group must consider the possibility of gender differences in coping. The Folkman et al. (1987) study found no differences for the coping strategies of interest, planful problem solving and escape-avoidance.

In summary, the studies of community adults provide additional evidence for the relations between coping strategy use and psychological symptoms, depression, or encounter outcome. The strategy planful problem solving was negatively related to psychological symptoms (Folkman, Lazarus, Gruen, & DeLongis, 1986) and also associated with satisfactory encounter outcomes (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). The strategy escapism was positively related to symptoms (Aldwin & Revenson, 1987) and the strategy escape-avoidance was reportedly used more frequently by more depressed persons (Folkman & Lazarus, 1986).

The studies also provide evidence regarding the relations between coping and appraisal that is relevant to the study of RA patients with a chronic, and therefore unchangeable, disease condition. For encounters appraised as changeable, more problem-focused forms of coping were used. For those appraised as having to be accepted more emotion-focused forms were used (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). In a study on the relations among
coping, appraisal, and aging, it was found that younger persons used more problem-focused forms of coping and tended to appraise stressful encounters as changeable. Older persons used more emotion-focused forms of coping and tended to appraise encounters as unchangeable. This pattern was consistent for all stressful encounters except health. In this context, younger and older persons did not differ in their use of the strategy escape-avoidance (Folkman et al., 1987). The evidence for an association between coping and aging adds to that provided by Felton and Revenson (1987) in their study of RA patients and others. Regarding gender, no differences were found for the strategies of interest, problem solving and wishful thinking or the related strategy, escape-avoidance (Folkman, Lazarus, Gruen, & DeLongis, 1986; Folkman et al., 1987).

Summary

The fundamental concern of this study is the psychological well-being of RA patients (i.e., psychological distress) and the relative contributions of coping strategies (wishful thinking and problem solving), personality characteristics (optimism), and several other variables (age, stressor type, physical disability, pain, and relative coping) to this outcome. In examining the relationships among these variables, the theoretical framework of Lazarus and Folkman (1984) was used. These authors emphasize the role of coping
in the transactional person-environment relationship.

In this study RA patients were asked to identify a stressful event and the coping strategies used to deal with that event. It was expected that the use of the coping strategies wishful thinking and problem solving would be significantly related to psychological distress and that optimism might also be related to distress, after the effects of age, stressor type, physical disability, and pain were taken into account.
Method

Subjects

The sample was drawn from a pool of approximately 600 RA patients referred to the Arthritis Society, Vancouver, British Columbia, from January to July, 1987. Sampling took place in two phases, an initial sampling followed by a resampling to replace prospective subjects found to be unsuitable (for details see Appendix A). In all, 246 prospective subjects were randomly selected from the pool, excluding juveniles (those under the age of 19) and those who had participated in the Arthritis Society’s stress management programs.

The physicians of potential subjects were contacted to inform them of the study and confirm subject suitability (see Appendix B for letter). Eight persons were then excluded from the study for reasons of infirmity (2), insufficient English (1), death (1), or reasons unspecified (4). The remaining 238 prospective subjects were telephoned, by volunteers working for The Arthritis Society, to inform them of the study and confirm the mailing address (see Appendix C for telephone script). A further 43 persons were found to be unsuitable for reasons of unavailability by phone (25), infirmity (2), location (7), insufficient English (4), lack of time (2) or interest (1) or other reasons (2). In all 195 prospective subjects were
selected and found suitable.

Procedure

The questionnaire, covering letter, and stamped, addressed, return envelope were sent to each of 195 potential respondents (see Appendix D for covering letter). A reminder letter was sent if the questionnaire was unreturned in 2 weeks; a second, similar letter was sent in 4 weeks if the questionnaire was still unreturned (see Appendix E for letters). Of the 195, 128 returned the questionnaire for a return rate of 65%, a rate comparing favourably with those reported for mail surveys with follow-ups (50%: Aldwin & Revenson, 1987; Hilton, 1987). Of the returned questionnaires 107 were complete, 21 were considered incomplete, the respondents having left undone one or more of the measures or responded at a rate of less than 50% to the items in 2 or more measures (for details see Appendix A).

Sample Characteristics

The following demographics characterized the sample of respondents returning completed questionnaires: 82% female, 66% married, 86% white, 23% employed full or part-time, 31% homemakers, and 32% unemployed or retired. The age range was wide (23 to 82 years) with a mean age of 56.2. Range of time since first diagnosis was 1 to 45 years with a mean of 13.3 years. The RA sample is similar, with respect to age,
sex, and race, to other arthritis samples studied (Kazis, Meenan, & Anderson, 1983; Keefe et al., 1987) but generally differs from samples of community adults (Aldwin & Revenson, 1987) by being older and more predominantly female. Regarding other medical problems, 13% reported stomach trouble, 11% high blood pressure, 7% lung conditions, and 6% heart problems. Subjects reported medication usage: 89% used nonsteroidal anti-inflammatory or analgesic medications, 37% used steroids for treatment of RA symptoms and pain control, 88% used other medications. Of these some were specific to the treatment of RA but most were related to other medical disorders. Table 1 gives a detailed account of sample demographics, Appendix F lists medications reported.

**Measures**

**Criterion measure.** Psychological distress was measured using the Brief Symptom Inventory (BSI) (Derogatis & Melisaratos, 1983), a short form of the Symptom Check List-90-R (SCL-90-R). Eight BSI scales were used: obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The one scale not used, somatization, was excluded from use to avoid confounding the outcome measure with the predictor variable physical health status. In addition to the 8 scales which were used, 7 additional items (4
Table 1
Demographic and Health Variables of RA Patients (N = 107)

<table>
<thead>
<tr>
<th>Variable</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
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</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
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</tr>
<tr>
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<tr>
<td>Male</td>
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<tr>
<td><strong>Marital status</strong></td>
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<tr>
<td>Married (common-law or legally)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>10.3</td>
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<tr>
<td>Separated</td>
<td>3.7</td>
<td></td>
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<td></td>
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<tr>
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<tr>
<td><strong>Current occupational status</strong></td>
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<tr>
<td>Employed full-time</td>
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<td></td>
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<tr>
<td>Employed part-time</td>
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<td></td>
<td></td>
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<tr>
<td>Unemployed</td>
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<tr>
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<tr>
<td>Other</td>
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<td>Native Indian</td>
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<tr>
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<td>Children&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>Five or more</td>
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<tr>
<td>Five or more</td>
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<tr>
<td>Pain</td>
<td>43.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced activity</td>
<td>51.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>20.6</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Deformity</td>
<td>6.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncertainty</td>
<td>8.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joint mobility</td>
<td>18.7</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Specific joints</td>
<td>8.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>19.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain (VAS)</td>
<td>42.9</td>
<td>24.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of symptoms (years)</td>
<td>14.0</td>
<td>10.3</td>
<td>1-45</td>
<td></td>
</tr>
</tbody>
</table>
First diagnosis (years since)  13.2  10.3  1-45

Other medical problems\textsuperscript{b}

<table>
<thead>
<tr>
<th>Condition</th>
<th>Years Since</th>
</tr>
</thead>
<tbody>
<tr>
<td>High blood pressure</td>
<td>11.2</td>
</tr>
<tr>
<td>Heart disease</td>
<td>5.6</td>
</tr>
<tr>
<td>Mental illness</td>
<td>1.9</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1.9</td>
</tr>
<tr>
<td>Cancer</td>
<td>1.9</td>
</tr>
<tr>
<td>Alcohol or drug abuse</td>
<td>1.9</td>
</tr>
<tr>
<td>Lung disease</td>
<td>6.5</td>
</tr>
<tr>
<td>Kidney disease</td>
<td>.9</td>
</tr>
<tr>
<td>Liver disease</td>
<td>.9</td>
</tr>
<tr>
<td>Stomach or blood disease</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Medications currently taken\textsuperscript{b}

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonsteroidal analgesic and anti-inflammatory</td>
<td>88.8</td>
</tr>
<tr>
<td>Steroidal anti-inflammatory</td>
<td>37.4</td>
</tr>
<tr>
<td>Other medications</td>
<td>87.9</td>
</tr>
</tbody>
</table>

\textsuperscript{a}The category total sums to 99% due to missing data.

\textsuperscript{b}In this category percentage responses are "yes" or positive responses to each item considered separately.
from the BSI and 3 from the SCL-90-R) were included which do not belong unequivocally with any single dimension but are important configurally to the general severity index (GSI), the global scoring index used in this study. Each of the 49 items are rated on a 5-point scale of distress with the anchors **not at all** (0) and **extremely** (4). Scoring of the GSI is done by summing the distress scores and dividing by the total number of items. Scores can range from 0.0 to 4.0.

Internal consistency and test-retest reliabilities are high for these 8 symptom dimensions. Derogatis and Melisaratos (1983) found coefficient alphas ranging from .71 to .85, and two-week test-retest coefficients from .78 to .91. For the GSI they found a test-retest coefficient of .90. Derogatis and Melisaratos also found evidence for convergent validity with correlation coefficients ranging from .30 to .72 in analyses examining the relations between the BSI and other self-report inventories. For the RA sample used in this study, the GSI internal consistency alpha was .95.

**Predictor measures.** Physical disability was measured using the *Arthritis Impact Measurement Scale* (AIMS; Meenan et al., 1980) with minor, recent revisions in the Guttman scaling (Boston University Multipurpose Arthritis Centre). The AIMS instrument was designed to assess health status components in arthritis patients and has been shown to perform well
in at least four major types of arthritis including RA (Meenan, Gertman, Mason, & Dunaf, 1982). It consists of nine subscales which group to form three summary components: physical health status, psychological and social health status, and pain. The scales range in number of items from four to seven for a total of 45 items. In this study the variable physical disability was assessed using the five AIMS physical health status subscales (mobility, dexterity, physical activity, social role or household activities, and activities of daily living; 25 items) and the variable pain was assessed using the one AIMS pain subscale (four items). The psychologic and social subscales were not used as they do not assess variables of interest. Response phrasing varies with the subscale; most items refer to problems during the past month. Scoring also varies with the subscale. Subscale scores are calculated by summing item scores, subtracting the number representing the number of items in the subscale, and multiplying the difference by a normalization factor. Normalized subscale scores range from 0.0 to 10.0. The physical health status score is estimated by summing the five normalized component subscale scores and dividing by 5, for a score range of 0.0 to 10.0. High scores represent greater physical disability and more pain.

Reliability of the physical health and pain
subscales has been established with Guttman coefficients ranging from .91 to .94, Cronbach's alpha, .70 to .85 (Meenan et al., 1980), and 2-week test-retest correlations of $r = .84$ (Meenan et al., 1982). Evidence for validity is provided in several studies: construct validity in Meenan et al. (1982), and convergent validity in Liang, Larsen, Cullen, and Schwartz (1985), and Meenan et al. (1984).

Coping was assessed with a revised version of the Ways of Coping Checklist (WCCL; Vitaliano et al., 1985). This instrument contains 42 items describing cognitive and behavioral strategies that might be used in coping with a specific stressor. The items are grouped to form five subscales: problem solving, seeks social support, blamed self, wishful thinking, and avoidance. This study used two subscales, one assessing problem-focused strategies (problem solving, 15 items), the other assessing emotion-focused strategies (wishful thinking, eight items). Both were chosen because of their theoretical and empirical import in the coping literature (Felton & Revenson, 1984; Lazarus, Averill, & Opton, 1974; Scheier et al., 1986; Silver et al., 1986; Vitaliano et al., 1987) (see Appendix G for measure).

Respondents were asked to identify the most stressful event that had occurred within the last month, following the time frame used by Aldwin and
Revenson (1987) in a similar study, and Folkman and Lazarus (1980) in developing the original WCCL.

The revised scale (Vitaliano et al., 1985) is answered using a 4-point scale with the response endpoints Not used (0) and Used a great deal (3). Data were assessed using both raw and relative scores. Raw scores, the mean scores for item responses of each scale, can range from 0 to 3. Relative scores (Vitaliano, Maiuro, Russo, & Becker, 1987) were calculated by first finding the mean for each scale. Relative scores are calculated by dividing the mean for any one scale by the sum of the means for all scales, and multiplying by 100 to convert the score to a percentage. Scores can range from 0% to 100% with high scores indicating relatively frequent use of that coping strategy, and low scores reflecting little or no use. In the present study the relative score was calculated with the mean for problem-solving coping forming the numerator.

Construct validity and reliability have been established for the revised scales (Vitaliano et al., 1985). The authors compared their revision with the original WCCL (Folkman & Lazarus, 1980) and found internal consistencies to be generally higher for the revised subscales. Internal consistencies based on the RA sample data from the present study were .82 for the wishful thinking scale and .86 for the problem-solving
Stressful episodes were classified using a set of five categories determined through content analysis and with reference made to classification sets used in other studies (Turner et al., 1987; Vitaliano, Katon, et al., 1987). Reported episodes were assigned to categories by two raters working independently. The raters agreed upon 81% of the category assignments and, using consensus, reassigned the remaining episodes. The frequency of stressors reported for each category was: physical aspects of arthritis (33%), work or financial stressor (12%), social stressor (36%), health stressor other than arthritis (8%), and daily living stressor (11%). The stressor categories were further collapsed into two subgroups: arthritis and arthritis-related stressors (33%), and other stressors (67%). For category details see Appendix H.

Optimism was measured using the Life Orientation Test (LOT) (Scheier & Carver, 1985). This 12-item scale was designed to assess dispositional optimism as defined in terms of generalized outcome expectancies. Respondents were asked to rate the extent to which they agreed with each item using a 5-point Likert scale with the anchors strongly agree (4) and strongly disagree (0). In coding, 4 items are reverse scored, 4 filler items are omitted. Scores, obtained by summing the 8 item scores, can range from 0.0 to 32.0.
Scheier and Carver (1985) found evidence of moderate internal consistency with Cronbach's alphas ranging from .74 to .77. They also found evidence for stability with a 4-week test-retest reliability of .79. Support for convergent and discriminant validity was provided by evaluating the LOT against a number of conceptually related scales. For the RA sample used in this study, an internal consistency alpha of .83 was found.

Demographic and ancillary measures. Demographic information was collected and a brief medical history taken (see Appendix I). One question asked respondents to describe the most troublesome or stressful aspect of arthritis. The final question asked respondents for additional comments.

A 100 mm visual analogue scale (VAS) with anchors least possible pain and worst possible pain was used as a measure of pain intensity, for comparative and descriptive purposes. Respondents were asked to report the average intensity of pain sensation during the past week. The VAS has demonstrated reliability and sensitivity in its use as a measure of pain intensity or severity (Scott & Huskisson, 1976; Syrjala & Chapman, 1984).

Data Analysis

Stepwise multiple regression (MR) was conducted to examine the linear relationships between psychological
distress and age, type of stressor, physical
disability, pain, optimism, and coping. Hierarchical
MR was used in order to determine the amount of
variance in psychological distress explained by
optimism and coping strategies above and beyond that
explained by the other variables. Predictor variables
were entered into the regression equation in five steps
predetermined on the basis of theoretical formulations
regarding causal ordering among sets of predictor
variables and empirical evidence from similar studies.
The variables were entered simultaneously within each
of the five steps as follows: (1) age, stressor type,
and physical disability; (2) pain; (3) optimism; (4)
problem solving and wishful thinking; and (5) relative
coping. Stressor type was a dichotomous variable which
was coded as a dummy variable and entered as 1 or 0.
Physical disability was entered before pain on the
basis of a similar approach taken in other studies
(Aldwin & Revenson, 1987; Keefe et al., 1987;
Lichtenburg et al., 1986). Optimism was entered before
coping strategy variables in keeping with Lazarus and
Folkman's (1984) theoretical perspective that
personality variables are antecedent to coping
processes, and with similar procedures in another study
(Folkman, Lazarus, Gruen, & DeLongis, 1986). Coping
strategy variables (problem solving and wishful
thinking) were entered separately as main effects and
then as a relative term (relative coping) to test for the modifying effects of the two forms of coping.

A preliminary multivariate analysis of variance (MANOVA) was conducted to compare two subgroups of RA patients (those who identified arthritis-related stressors and those who did not) in terms of age, physical disability, pain, optimism, coping (problem solving, wishful thinking, and relative), and psychological distress.

Data analysis was accepted as significant at the .05 level.
Results

Means, standard deviations, and pairwise correlations are given for all variables in Table 2. Type of stressor, age, physical disability, and pain each showed little or low relations (all $r$'s < .30) with all other variables with one exception (Huck, Cormier, & Bounds, 1974). Physical disability and pain correlated at .37. The optimism measure showed a low or moderate correlation with the coping strategy measures, wishful thinking ($r = -.23$), problem solving ($r = .34$), and relative coping ($r = .32$). The direction was negative in the former case, and positive in the latter two cases. Wishful thinking showed a low correlation with problem solving ($r = .23$).

The two pain measures, the VAS and the AIMS pain scale, correlated highly ($r = .81$). In addition, the VAS, like the AIMS pain measure, had nonsignificant correlations with the three coping measures: .08 for wishful thinking, -.10 for problem solving, and -.11 for relative coping. On the basis of these comparisons it was concluded that the VAS was measuring a parameter similar to that measured by the AIMS pain scale and was therefore excluded from further analysis.

In terms of disease status, the RA sample was similar to a group of mixed arthritis patients with reported means from the AIMS of 2.80 ($SD = 1.98$) for physical disability and 5.78 ($SD = 2.57$) for pain.
<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<tbody>
<tr>
<td>1. Stressor</td>
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<td>.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. Age</td>
<td>56.2</td>
<td>13.2</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3. Disability</td>
<td>3.18</td>
<td>1.99</td>
<td>.21</td>
<td>.24</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. Pain</td>
<td>5.20</td>
<td>2.15</td>
<td>.00</td>
<td>.01</td>
<td>.37</td>
<td></td>
<td></td>
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<tr>
<td>5. Optimism</td>
<td>20.5</td>
<td>5.7</td>
<td>-.08</td>
<td>-.02</td>
<td>-.03</td>
<td>.14</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>6. Coping-W</td>
<td>1.13</td>
<td>.78</td>
<td>-.05</td>
<td>-.07</td>
<td>.12</td>
<td>.00</td>
<td>-.23</td>
<td></td>
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</tr>
<tr>
<td>7. Coping-P</td>
<td>1.26</td>
<td>.66</td>
<td>.00</td>
<td>-.27</td>
<td>-.09</td>
<td>-.01</td>
<td>.34</td>
<td>.23</td>
<td></td>
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<tr>
<td>8. Coping-Rel</td>
<td>56.2</td>
<td>22.5</td>
<td>-.02</td>
<td>-.11</td>
<td>-.13</td>
<td>-.01</td>
<td>.32</td>
<td>-.70</td>
<td>.28</td>
<td></td>
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<tr>
<td>9. Distress</td>
<td>.75</td>
<td>.57</td>
<td>.06</td>
<td>-.17</td>
<td>.12</td>
<td>.12</td>
<td>-.56</td>
<td>.47</td>
<td>.02</td>
<td>-.36</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Coping-W is Wishful-Thinking Coping, Coping-P is Problem-Solving Coping, and Coping-Rel is Relative Coping.

*a*Stressors were coded 0 and 1.

£.05,105 = .16
£.01,105 = .23
Regarding the optimism measure, the RA sample scores were similar to those of a sample of college undergraduates with reported means of 21.0 ($\text{SD} = 4.6$) and 21.4 ($\text{SD} = 5.2$) (Scheier & Carver, 1985). For the coping strategy measure, the RA sample scores were similar to those found for spouses of patients with Alzheimer's disease. Vitaliano, Maiuro, Russo, and Becker (1987) reported means of 1.37, for problem solving, and 1.18, for wishful thinking. For the psychological distress measure, the RA sample scores were similar to those of mixed arthritis group ($M = .93$, $\text{SD} = .70$) and two RA groups ($M = .85$, $\text{SD} = .67$; $M = .42$, $\text{SD} = .39$) (Vollhardt, Ackerman, Grayzel, & Barland, 1982) but different from both a psychiatric outpatient group ($M = 1.36$, $\text{SD} = .86$) and a nonpatient group ($M = .30$, $\text{SD} = .31$) (Derogatis & Melisaratos, 1983).

The RA sample described the most stressful or troublesome aspects of their arthritis. Categories derived by content analysis are given in Appendix J. Additional comments given by respondents are compiled in Appendix K.

A preliminary MANOVA compared those who reported arthritis or arthritis-related concerns as their primary stressor with those who reported other primary stressors on the variables wishful thinking, problem solving, relative coping, optimism, age, physical
disability, and pain. The analysis found no significant between group difference ($F(7,99) = 1.50, p>.17$).

The multiple regression equation was significant, $F(8,98) = 12.35, p<.01$, and the predictor variables, in combination, accounted for 50% of the variance (adjusted $R^2 = .46$). Table 3 summarizes the findings. After the effects of age, stressor type, physical disability, and pain had been removed, optimism accounted for the largest proportion of variance ($\Delta R^2 = .32$) and was negatively related to distress symptoms. Wishful thinking accounted for the next largest proportion of the variance ($\Delta R^2 = .11$) but was positively related to distress symptoms. The only other variable to account for a significant proportion of the variance was age which explained only 3% of the variance and was negatively related to distress symptoms.

The results indicate that RA patients who were younger and less optimistic, and reported using more wishful-thinking coping strategies also reported being more distressed than did other RA patients.
Table 3
Hierarchical Multiple Regression Analysis on Psychological Distress in RA Patients (N = 107)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$ cumulative</th>
<th>$R^2$ adjusted</th>
<th>$R^2$ increase</th>
<th>$F$ to enter</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.03</td>
<td>.02</td>
<td>.03</td>
<td>3.05*</td>
<td>-.14</td>
</tr>
<tr>
<td>Disability</td>
<td>.06</td>
<td>.04</td>
<td>.03</td>
<td>2.97</td>
<td>.03</td>
</tr>
<tr>
<td>Stressor</td>
<td>.06</td>
<td>.03</td>
<td>.00</td>
<td>.29</td>
<td>.05</td>
</tr>
<tr>
<td>+Pain</td>
<td>.06</td>
<td>.03</td>
<td>.00</td>
<td>.48</td>
<td>.19</td>
</tr>
<tr>
<td>+Optimism</td>
<td>.39</td>
<td>.36</td>
<td>.32</td>
<td>53.21**</td>
<td>-.54</td>
</tr>
<tr>
<td>+Coping-W</td>
<td>.50</td>
<td>.47</td>
<td>.11</td>
<td>21.67**</td>
<td>.31</td>
</tr>
<tr>
<td>Coping-P</td>
<td>.50</td>
<td>.47</td>
<td>.01</td>
<td>1.34</td>
<td>.10</td>
</tr>
<tr>
<td>+Coping-Rel</td>
<td>.50</td>
<td>.46</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

$F(8,98) = 12.35, p<.01$

Note. Each new step in the hierarchical analysis is indicated by a plus sign (+).

$R=\text{Standardized Regression Coefficient.}$

* $p<.05$. ** $p<.01$. 
Discussion

This study was concerned with the relations of coping strategies (wishful thinking and problem solving), personality characteristics (optimism), and several other variables (stressor type, age, physical disability, and pain) to the psychological distress of RA patients. The findings suggest that, after the effects of age, stressor type, physical disability and pain were accounted for, the personality variable optimism, in combination with the coping strategy wishful thinking, accounted for a moderate proportion of the variance in psychological distress. The more optimistic patients reported fewer distress symptoms while those who reported using more wishful thinking also reported more distress. Of the other variables only age accounted for a significant but small proportion of the variance in distress with the older patients reporting fewer distress symptoms. Pain, physical disability, stressor type, problem-solving coping strategies, and relative coping did not significantly enter the regression equation.

Optimism explained the largest proportion of variance in psychological distress, above and beyond that explained by age, type of stressor, pain, and physical disability. Several studies have found similar results with optimism positively related to health outcomes (Carver & Gaines, 1987; Strack et al.,
If optimism is a generalized expectancy for good outcomes, and if, as Scheier and Carver (1985) postulate, outcome expectancies are important in determining goal attainment behavior, then optimists should exert greater efforts coping with difficulties arising in the process of goal attainment. Optimists, in other words, would be more likely to persevere in coping with stressful situations and therefore might be more likely to manage such stressors effectively. As a result, optimists might show fewer symptoms of distress. The findings of this study provide support for this set of ideas.

If those scoring high in optimism experience less psychological distress than those scoring low in optimism, this difference may be a function, in part, of a difference in coping strategy use. The present study found that RA patients who were high in optimism used more problem solving and less wishful thinking than those low in optimism. For undergraduates, Scheier et al. (1986) found similar results with those high in optimism tending to use more active problem-focused forms of coping and less of the avoidant emotion-focused coping strategies. If the coping strategies (used differentially by patients high and low in optimism) differed in their relationships to distress or other health outcomes, this would suggest
that the use of coping strategies might be one of the mechanisms through which optimism is related to these same outcomes. In addition, it would provide some support for Lazarus and Folkman's (1984) contention that personality variables (e.g., optimism) may modify the response to stress. These ideas were somewhat supported by the findings of the present study. Optimists used less of the strategy which was positively related to distress (wishful thinking) and more of the strategy unrelated to distress (problem solving). Future studies might include assessment of coping by optimism interaction effects to help clarify the nature of the relations among coping, optimism, and distress.

Finally, the variance in distress accounted for by optimism may be due, in part, to a response bias. It may be that optimists tend to present as happier people than pessimists and may differ from pessimists in the reporting of symptoms (Scheir & Carver, 1985). They may consistently respond to items regarding psychological distress symptoms, pain, and physical disability with a characteristic bias which results in consistently higher scores for these measures. Optimism was moderately correlated with psychological distress ($\rho = -.56$) at the zero-order level, but unrelated to both pain ($\rho = .13$) and physical disability ($\rho = -.03$). The evidence for a possible
confound is weak.

Following optimism, the coping strategy wishful thinking accounted for the next largest proportion of the variance in psychological distress, after the effects of age, stressor type, physical disability, pain, and optimism had been removed. The association was positive. This finding is similar to evidence reported in a number of other studies (Aldwin & Revenson, 1987; Silver et al., 1986; Vitaliano et al., 1985; Vitaliano, Katon, et al., 1987; Vitaliano, Maiuro, Russo, & Becker, 1987).

The use of wishful thinking did not differ with stressor type indicating some independence from situational variables. Folkman, Lazarus, Gruen, and DeLongis (1986) found similar results for emotion-focused forms of coping suggesting stability of these forms across a diversity of situations. They postulated that emotion-focused forms of coping are more heavily influenced by personality variables (relatively stable characteristics), while problem-focused forms of coping are more strongly influenced by situational variables. While this study found that the use of wishful thinking (i.e., emotion-focused coping) was independent of stressor type, the use of problem solving (i.e., problem-focused coping) was also independent of stressor type. Both strategies were associated with the personality variable optimism, in
the expected directions, but the problem solving association was a little stronger ($r = 1.23$ vs. $r = .34$).

Wishful thinking may be an attention deployment strategy which may provide relief from a stressor. It may be that this strategy contributes to well-being if used on a temporary basis but contributes to distress if used over an extended period of time. In this study the use of wishful thinking was unrelated to years since diagnosis of arthritis or onset of disease symptoms. However, the period of time through which wishful thinking provides an adaptive respite is probably short and not measured within the scope of this study. In addition, if the use of wishful thinking is relatively stable with respect to stressor diversity and closely associated with personality variables, as postulated by Folkman, Lazarus, Gruen, and DeLongis (1986) then it could be that wishful thinking, if used to any appreciable extent, is also used over extended periods of time. Empirical evidence suggests that wishful thinking is often positively associated with distress so that its extended use would most likely contribute to diminished well-being over the long term (Felton & Revenson, 1984).

The findings regarding the coping strategy problem solving are less clear. In this study the use of problem solving did not account significantly for
variance in psychological distress. This finding is similar to others also reporting a lack of relationship between problem solving and distress (Folkman & Lazarus, 1986; Silver et al., 1986). On the other hand, a number of studies have found problem solving to be negatively related to distress (Vitaliano et al., 1985; Vitaliano, Katon, et al., 1987; Vitaliano, Maiuro, Russo, & Becker, 1987) and other illness-related outcomes (Turner et al., 1987), or positively related to satisfactory outcomes (Folkman & Lazarus, 1986).

The findings for a negative relationship between problem solving and distress are consistent with the evidence from studies of depression and the learned helplessness model (Coyne et al., 1981). The lack of relationship found in the present study may have to do with the nature of the chronic RA patient population. Chronic RA patients are often characterized by negative emotional and psychological characteristics, e.g., depression and general neurotic symptoms (Lerman, 1987; Spergel et al., 1978). Consistent with this, the distress scores for the RA sample in this study were higher than those reported for nonpatient norm groups (Derogatis & Melisaratos, 1983). Chronic RA patients also tend to perceive themselves as having little control over their disease condition (Felton et al., 1984). Their use of problem solving can perhaps be
explained with reference to Lazarus and Folkman's (1984) theoretical framework, Seligman's learned helplessness model (cited in Bradley, 1985), and the notion of the rheumatoid personality characteristics as chronic disease sequelae (Anderson et al., 1985).

Lazarus and Folkman (1984) maintain that, in general, the use of problem-focused forms of coping is more likely when situations are appraised as changeable, and the use of emotion-focused forms when situations are appraised as unchangeable. The learned helplessness model posits that exposure to uncontrollable aversive events may result in the tendency to behave in a helpless manner with certain deficits including passivity, anxiety, and depression. This behavior, developed in response to the uncontrollable event, is presumed to generalize to all stressors (Bradley, 1985).

One can speculate that RA patients coping with a chronic disease condition perceived as uncontrollable may come to use less problem-focused forms of coping (i.e., problem solving) and more emotion-focused forms (i.e., wishful thinking) in response to arthritis and arthritis-related stressors. This response array may generalize to all stressors. Such a speculated pattern of events would be consistent with Lazarus and Folkman's (1984) suggestions, the learned helplessness model, and the development of a negative personality
profile in chronic RA patients, as well as the results of the present study.

In this study the use of problem solving was not significantly related to stressor type. In addition, the two RA subgroups (those reporting arthritis stressors and those reporting other stressors) did not differ significantly on any of several variables considered including problem solving. These findings are inconsistent with the evidence that the use of problem-focused forms of coping tends to be somewhat situation dependent (Folkman, Lazarus, Gruen, & DeLongis, 1986).

However, the evidence from the present study lends support to the notion that chronic RA patients may respond to all stressors with a generalized pattern of coping. It may be that the use a certain array of coping strategies develops in response to the chronic disease condition and generalizes to use with other stressors. If this were the case one would expect that chronic RA patients would tend to use less problem solving while using more wishful thinking. One can speculate that with an increasing reliance on the use of wishful thinking, with its often significant (and positive) associations with distress, that problem solving comes to be insignificant in its relationship to distress.

Regarding age, older RA patients tended to report
less distress ($r = -.17$) and more physical disability ($r = .24$) than younger patients. For health stressors, which constituted about one-third of the reported stressors, this finding can be explained in terms of Neugarten's (1976) concept of on time stressors. Older persons may be more disabled but less distressed by illness stressors because these are on time or expected for older persons. With regard to other stressors, younger community adults tend to report more hassles in more areas than older adults do (Folkman et al., 1987). It could be that for stressors not specifically health-related, older RA patients experience fewer hassles than younger ones and this might be linked with a tendency to report less distress.

Older RA patients tended to use less problem-solving ($r = -.27$), but no association was found for wishful thinking ($r = -.05$). Similar age differences were found for community adults in the use of problem solving, while for wishful thinking the use was similar only for health stressors (Folkman et al., 1987). For other stressor types, in the same study, older adults used more wishful thinking. Similarly, older and younger chronic patient groups (including RA) did not differ in the use of wish-fulfilling fantasy except when the illness was perceived as being serious. Then the older patients used wish-fulfilling fantasy less (Felton & Revenson, 1987).
In the present study, the RA patients constituted an older sample. There is evidence that older community adults tend to appraise stressors as more unchangeable regardless of stressor type (Folkman et al., 1987). Lazarus and Folkman (1984) have suggested that there is a greater use of the emotion-focused strategies when encounters are appraised as unchangeable, and a greater use of the more active problem-focused strategies when they are judged to be changeable. One can speculate that in the present study the older patients appraised stressors as more unchangeable. If so, their use of less problem solving is expectable.

By the same token, one would expect older patients to use more wishful thinking except for arthritis and arthritis-related stressors. This response pattern would be consistent with the findings that RA patients perceived their disease as uncontrollable (Felton et al., 1984) and that older and younger persons did not differ in use of coping strategies similar to wishful thinking for health stressors (Felton & Revenson, 1987; Folkman et al., 1987). In this study, older patients were similar to younger patients in wishful thinking for all stressor types. One can speculate that this finding might be explained by the learned helplessness model and the mechanism of generalization (Bradley, 1985).
In speculating about the age differences in coping strategy use, Neugarten's (1976) on time concept is useful. Evidence from several studies indicates that with age there is an increased use of the more passive wishful thinking type of strategy except for health stressors (Folkman et al., 1987), some chronic RA patients (the present study), and chronic patients when the illness is perceived as serious (Felton & Revenson, 1987). In the latter case, older patients used wishful thinking less. Wishful thinking and related coping strategies are avoidant strategies used to create a respite from a stressful situation. One can speculate that if health stressors are perceived as on time for older persons, they might be more likely to appraise the stressors as having to be accepted and less likely to use avoidant strategies such as wishful thinking. Similarly, older persons might be more able to accept serious illness and therefore less likely to use wishful thinking and related strategies. In the present study, the older adults do not differ in the use of wishful thinking for health or other stressors. This pattern is consistent with Neugarten's (1976) concept, with the learned helplessness model (Bradley, 1985), as well as Lazarus and Folkman's theoretical framework.

One finding touches on a methodological issue, namely the use of relative scores in coping strategy
data analyses. The present study found that relative scores were less effective than raw scores in defining coping strategy relationships, while other studies have found relative scores to be more effective (Folkman et al., 1987; Vitaliano, Maiuro, Russo, & Becker, 1987). The present study differed from the others in that only two coping strategy scales were examined in contrast to the five or more included in the other studies. It would seem that relative scores may contribute more to our understanding of coping strategies when a fuller range of coping strategy subscales are used.

To summarize, this study found that for RA patients responding to stress optimism, wishful thinking, and, to a much lesser extent, age were the variables that accounted significantly for variance in distress, the first two accounting for variance above and beyond the effects of physical disability, pain, and stressor type. In considering the study results, a number of issues were raised and speculation made concerning the means by which coping strategies and optimism may be related or unrelated to distress.

Study results are limited in generalizability to adult RA patients but with some uncertainty concerning the exclusive applicability of results to this population as the study lacked a control group. A further limit is related to the study design. Data was collected only once from each respondent while the
study attempted, in part, to comment upon the nature of a process (coping). Coping, as conceptualized by Lazarus and Folkman (1984), is a continually changing process, aspects of which may be moderately stable over time (Folkman, Lazarus, Gruen, & DeLongis, 1986). The present study looked at specific behaviors within the process (coping strategies) and examined their relationship to a relatively stable phenomenon psychological distress.

A further limitation is the use of psychological distress as a measure of psychological or emotion well-being. The instrument that was used in this study to measure distress (the BSI) has been validated in other studies and is closely related to the much used SCL-90-R. However, the validity of using a distress measure to assess a construct (well-being) having positive as well as negative components remains in question. The emphasis on negative traits in most arthritic personality studies has provided little or no information about adaptive coping response or positive characteristics (Anderson et al., 1985).

The present study relied exclusively on self-report data. Findings would have been strengthened by the additional use of other types of measures such as physiological assessment. And finally, the study was correlational and therefore no conclusions can be made regarding causality.
Conclusions

The hypothesis was supported. The study found a linear relationship between the predictor variables optimism, wishful thinking, and age and the criterion variable psychological distress. These findings are consistent with the theoretical framework proposed by Lazarus and Folkman. The findings have implications for practical applications and suggest further research possibilities.

The present study has implications for the treatment and evaluation of stress-management treatment programs designed to meet the needs of RA patients and similar others. In the past 10 years there has been increasing interest shown in the use of psychological techniques, i.e., cognitive behavioral stress-management interventions, in treatment programs for RA patients (Bradley et al., 1984). Studies, such as the present one, of the variables related to stress and well-being, add to the empirical base necessary for the development of successful programs.

Recommendations for further research are as follows:

1. Since there are limitations to research based entirely on self-report instruments, it would be useful in further research to include physiological or other medical status variables to verify the findings of the present study.
2. It would be useful to replicate the present study using the complete WCCL. Use of the more complete range of coping strategy response items might provide a more accurate indication of how RA patients cope with stress. In addition, the inclusion of more coping strategy scales would allow for the use of relative scores to assess main effects in data analyses.

3. Since optimism accounted for the largest proportion of variation in psychological distress and there is some evidence in the literature that persons high and low in optimism differ in their use of coping strategies, it may be worthwhile to examine the relations between optimism and coping strategy use in a chronic patient population such as this one.

4. A study including assessment of appraisals concerning perceived coping efficacy and stressor changeability might be useful. These appraisal variables may interact with coping strategy variables (e.g., problem solving) to predict psychological distress.

5. Few if any studies have been done comparing the coping strategies of chronic RA patients with those of community adults having no disorders. Such studies might provide evidence that the coping strategies of RA patients differ from those of community adults, regardless of stressor type. Such a finding would lend
support to the notion of a rheumatoid personality that develops as a chronic disease sequelae.

6. Future studies might keep as a focus the need to identify variables which, either singly or in combination, are positively related to well-being. Such studies would provide information useful in the development of psychological treatment programs for RA patients.

7. Intervention studies should be designed to test the effects of treatment programs including variables (i.e., some coping strategies and optimism) having a demonstrated relationship with well-being.
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Appendix A: Subject Selection and Questionnaire Return

Subject selection

The subject selection process extended over several months, from December, 1987 to May, 1988. Initially 164 persons were selected as prospective subjects. From this group 7 duplicates were excluded, leaving 157 persons prospective subjects. Of these 135 were found to be suitable for the study, 22 were unsuitable. Of these 12 were not available by phone, 5 were out of town, one was lacking sufficient English, and 4 were otherwise unsuitable for the study (2 were too infirm, one was too busy, one not interested).

In a further sampling 110 persons were selected as prospective subjects. From this group 21 duplicates were excluded, leaving 89 prospective subjects. Of these 60 were found to be suitable for the study, 29 unsuitable. Eight persons were found to be unsuitable on the basis of physician responses. Of these one had insufficient English, 3 were unsuitable for other reasons (2 were too infirm, 1 was deceased), and 4 unsuitable for reasons not given. A further 21 persons were found unsuitable on the basis of telephone unavailability or their own verbal response at the time of telephone contact. Of these 13 were unavailable by telephone, 2 were out of town, 2 had insufficient English, and 4 were otherwise unsuitable (one was very angry, one was too busy, 2 said the study was not
applicable to them). The resampling yielded 60 suitable prospective subjects from the 89 prospective subjects selected from the subject pool, for an attrition rate of 32.6% for this phase of the sampling process.

In all the names of at least 274 persons were selected from the sample pool as prospective subjects. Of these 28 names had been selected twice and were thus excluded leaving the names of 246 prospective subjects. Of these 195 were found to be suitable for the study, 51 were unsuitable. Of these, 25 were not available by telephone (16 had telephone numbers not in service, 2 had no phone number given in the referral files, 4 had the wrong number listed in the referral files, one had a telephone not yet connected, one was said to be not available by phone), 7 were out of town, 4 had insufficient English, one was deceased, 4 were too infirm, 4 were unsuitable for reasons not given, and 6 were otherwise unsuitable. In all, 195 suitable prospective subjects were selected as the sample to receive questionnaires.

Questionnaire return

Of the 67 persons not returning a questionnaire, 12 persons telephoned to decline participation. Of these 4 were not interested, 3 too infirm, 2 did not like the questions, one was too busy, one was not an RA patient, and one said her RA was in remission and
therefore she felt she was not a suitable candidate for the study. Two questionnaires were returned unopened, the addressees not at the given address.

1 At the time of writing complete documentation of the initial sampling process was not available. Information was missing regarding physician responses to inquiry concerning prospective subject suitability. In addition, of the 157 prospective subjects contacted by telephone in the initial phase, documentation was only available regarding telephone availability and suitability of 102 of these persons. For a group of 55 suitable prospective subjects no documentation was available regarding attrition at the time of telephone contact with prospective subjects.
Appendix C: Telephone Script

Telephone Contact - Patients

Hello, I'm ________________ a volunteer for the Arthritis Society. We want to inform you that the Arthritis Society, in collaboration with U.B.C., is undertaking a research project regarding stress and coping and that you may be selected to complete a questionnaire. Should you receive one in the mail, it is up to you whether you choose to return the paper and pencil questionnaire. Are you still at ________________ address? Thank you very much for your time.

(Record updated address.)
Appendix F: Medications Reported in Use by RA Patients

Medications reported were identified and grouped in one of three categories: nonsteroidal anti-inflammatory and analgesic medications, steroidal anti-inflammatory medications, other medications. Among the medications in the third category are some specific to the management of RA, for instance, gold salts, penicillamine, methotrexate, and hydroxychloroquine.

**Nonsteroidal anti-inflammatory and analgesic medications**

Acetaminophen, ALKA Butazolidin, Anasin, Anasaïd, Aspirin, Bufferin, Clinoril, Darvon-N, diclofenac sodium, Entrophen, Exdol 36\(^1\), Feldene, Frosst 292\(^1\), Frosst 642\(^1\), Idarac, Indocid, indomethacin, ketoprofen, Motrin, naproxen, Novasen, Orudis, piroxicam, Plaquenil, sulindac, Surgam, Tolectin, Tylenol, Tylenol 1\(^1\), Tylenol 3\(^1\), Tylenol Extra Strength, Voltaren.

**Steroidal anti-inflammatory medications**

Deltasone, prednisone.

**Other medications**

Aldactone, Aldomet, Aldoril, amitriptyline hydrochloride, Aralen Atarax, Ativan, auranofin\(^2\), Bactrim, Beclovent inhaler, Beminal with C Fortis, calcium, Calcium-Sandoz, captopril, Cardizem, Centrum Forte V, cimetidine, Cuprimine\(^2\), cyclosporine, cytotec, diazepam, diltiazem, Docusate, Dyazide, Eltroxin, ferrous gluconate, Flexeril, Fluotic, folic acid,

\textsuperscript{1} This medications contains the narcotic codeine.
Codeine use was reported by 11 subjects.

\textsuperscript{2} This medication is commonly used in the treatment of RA symptoms. Number of subjects reporting use of each medication is reported as follows: aurofin, 2; Cuprimine and penicillamine, 13; gold compound, 2; gold injection, 6; methotrexate, 10; Myochrysine, 6; Ridaura, 5; Solganol, 1.

\textbf{Note}. Medication identification and classification was based primarily on information found in Krogh et al. (1988).
Appendix G: Modified Ways of Coping Checklist

The purpose of this questionnaire is to find out the kinds of situations that trouble people in their day-to-day lives, and how people deal with them.

Part A. Take a few moments and think about the event or situation that has been the most stressful for you during the last month. By "stressful" we mean a situation which was difficult or troubling to you, either because it made you feel bad or because it took effort to deal with it. It might have been something to do with your family, with your job, with your friends, or with your physical condition.

In the space below, please describe the most stressful event of the past month. Describe what happened and include details such as the place, who was involved, what you did, what made it important to you, and perhaps what led up to the situation. The situation could also be one that is going on right now as well as one that has already happened. Don't worry about making it into an essay - just put down the things that come to you.

__________________________________________
__________________________________________
__________________________________________
__________________________________________

Part B. To what extent is this event or situation related to your arthritis?

__________________________________________

Part C. We want to know how you coped with the event you just described. Please read each item below and indicate, by circling the appropriate category, to what extent you used it in the situation you have just described.
Problem Focused

1. Bargained or compromised to set something positive from the situation.
2. Concentrated on something good that could come out of the whole thing.
3. Tried not to burn my bridges behind me, but left things open somewhat.
4. Changed or grew as a person in a good way.
5. Made a plan of action and followed it.
6. Accepted the next best thing to what I wanted.
7. Came out of the experience better than when I went in.
8. Tried not to act too hastily or follow my own hunch.
9. Changed something so things would turn out all right.
10. Just took things one step at a time.
11. I know what had to be done, so I doubled my efforts and tried harder to make things work.
12. Came up with a couple of different solutions to the problem.
13. Accepted my strong feelings, but didn't let them interfere with other things too much.
14. Changed something about myself so I could deal with the situation better.
15. Stood my ground and fought for what I wanted.

Wishful Thinking

1. Hoped a miracle would happen.
2. Wished I was a stronger person - more optimistic and forceful.
3. Wished that I could change what had happened.
4. Wished I could change the way that I felt.
5. Daydreamed or imagined a better time or place than the one I was in.
6. Had fantasies or wished about how things might turn out.
7. Thought about fantastic or unreal things (like perfect revenge or finding a million dollars) that made me feel better.
8. Wished the situation would go away or somehow be finished.
Appendix H: Coping Stressor Categories

1. Arthritis related. Pain or other physical aspects. Concerns with doctors, medicines, surgery. Problems in living when arthritis is mentioned or clearly implied to be the cause—a number of subjects were concerned about having the strength or physical ability to manage social or work events that they presumably would not have worried about had they been healthy.

2. Work and/or financial problems, student-related problems if respondent’s studies vocational not recreational.

3. Social problems with family members and friends, and the business of maintaining a healthy social life, such as, preparing a dinner party, gaining access to a social dancing club.

4. Health problems for conditions other than arthritis and including difficulties with surgery, medicines, and doctors. Eye problems were included in this category if arthritis was not specifically mentioned.

5. Other. Problems in daily living such as income tax, car repairs, home repairs, moving, travelling hassles, traffic accident, catering a wedding for 200.
Appendix I: Demographic Questions

Please provide the following information about yourself.

1. How long ago did you first become aware of your arthritis symptoms? ________ years or ________ months?

2. How long ago did a physician first diagnose your symptoms as some form of arthritis? ________ years or ________ months.

3. What type of arthritis do you have? Please circle appropriate number.
   - Rheumatoid arthritis_________________________1
   - Osteoarthritis_______________________________2
   - Fibrositis_________________________________3
   - Other (please specify)_________________________4

4. Is your health currently affected by any of the following medical problems? Please circle yes or no for each one.
   - High blood pressure_________________________yes  no
   - Heart disease_______________________________yes  no
   - Mental illness_______________________________yes  no
   - Diabetes_____________________________________yes  no
   - Cancer_______________________________________yes  no
   - Alcohol or drug abuse________________________yes  no
   - Lung disease________________________________yes  no
   - Kidney disease_______________________________yes  no
   - Liver disease_______________________________yes  no
   - Stomach or blood disease_______________________yes  no

5. Please list all medicine you are now taking for any reason, whether prescribed by a doctor or not, for example, birth control pills, aspirin.
6. What aspect of your arthritis is the most troublesome or stressful? Please describe.


7. What is your racial background?

White ______________________ 1
Black ______________________ 2
Hispanic ____________________ 3
Oriental or pacific islander ___ 4
Native Indian _________________ 5
Other________________________ 6

8. What is your current marital status? Please circle number.

Married (common-law or legally)___ 1
Never married__________________ 2
Separated______________________ 3
Divorced_______________________ 4
Widowed_______________________ 5

9. What is your current occupational status? Please circle number.

Homemaker______________________ 1
Employed full time______________ 2
Employed part-time______________ 3
Unemployed____________________ 4
10. What is your age at this time? ____________ years

11. What is your sex? Please circle number.
   Male __________ 1
   Female __________ 2

12. How many children do you have? ______________

13. How many children do you have living at home? __________
Appendix J: Arthritis Stressor Categories

1. Pain, discomfort, soreness, never feeling comfortable.

2. Reduced activity, restricted use, physical limitations, little function of..., useless....

3. Fatigue, reduced strength (in general), little strength to do....

4. Deformity (this could be a psychological difficulty or a physical one resulting from the consequences of the deformity, such as immobility of a joint).

5. Uncertainty, never knowing when a flare-up is going to occur, persistent flare-ups, chronicity.

6. Lack of mobility, stiffness, swelling, weakness or little strength in joints - all with reference to joints specifically and not mobility or strength, for instance, in the general sense.

7. Difficulty with specific joints. This category was used when subject responded by merely listing body parts and did not mention any other difficulty.

8. Other. Interpersonal and intrapsychic concerns such as increasing dependence on others, irritation, depression, feelings of guilt. Worries about reality concerns such as impending surgery, the future.
Appendix K: Additional Written Comments from Respondents

Stress Related Responses

Wants stress management programs.

Stressful situation with daughters. She copes with the help of a friend and with prayer.

Convinced that stress can add to arthritic discomfort.

Responses Related to Study

Happy to help in future studies. Someone will find a cure.

Thank you for your efforts to manage and solve this problem.

You are doing good work.

Wants to know where he rates compared to other patients.

Wants to have research results, either published in Arthritis News or sent directly to her.

Happy to participate.

Thank you for sending questionnaire.

Interested in retrospective study re effect on spousal relationships.

Responses Related to Questionnaire

Couldn’t relate questions in Part C to event in part A.

Questions on pages 1, 2, and 3 are difficult to understand.
Response options not relevant to my understanding of stress. Questions did not tap experience of arthritic person at work, e.g., questions on pages 6, 7, and 8.

Other Responses About Themselves
Very fortunate. Excellent medical care since onset. At present RA in remission but still treated with drugs.
Can't understand why stricken with RA. Suffer every day.
Arthritis controlled by medication, no major problems disease related problems right now.
Have positive attitude and improved physical condition and energy level. I read about treatments and causes.
Scared of being crippled, totally dependent, and losing husband's affection.
Maintains exercise to feel good about self and maintain sense of having control over arthritis.
Has been in good shape since methotrexate began to work.
Feeling better physically since taking methotrexate.
Mentally feels bad as family and friends hurting her.
Very active in helping others and would like some help and empathy for herself.
Disheartened due to drug side effects, and no
benefits.
Tries to stay active and not let arthritis take over life.
Finds others upsetting when they tell her of cures to try.
Now finds life more enjoyable since she has started dealing with situations and accepting responsibility for future.
Much improved in the last year since taking methotrexate.
Very active, dances five times a week. Rubs legs with liniment.
Her faith helps her cope. Two operations on neck vertebrae.
I can do most things when medications control my arthritis, but arthritis flare-up is painful and stressful.
Having gold injections since early '88 and feel almost in remission.
Difficult divorce - dealing with RA didn't fit the picture she had of a quite, serene life.

Other Responses
Apology for delay in responding.
Apology for lateness. Needed help with the English.
Some of the questions in the first part seemed stupid.
Apology for lateness. Temporary difficult period.
Note. The above comments were made by 37 subjects in response to a request for additional comments included at the end of the questionnaire.