DEPRESSIVE SYMPTOMS IN RHEUMATOID ARTHRITIS: THE QUANTITATIVE AND QUALITATIVE ASSESSMENT OF SELF-ESTEEM

James Lewis Murray

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ABSTRACT

Rheumatoid arthritis (RA) is a chronic, inflammatory disease characterized by degenerative damage to the joints. In the absence of a definitive aetiology and successful treatments, the autoimmune disorder of RA is less than adequately managed by the biomedical model. The health psychology literature suggests that psychological factors are important for individuals dealing with the pain, stiffness and functional disability of RA. The growing body of research associated with the psychological factors of RA have reported high prevalence rates of depressive symptoms for those with the disorder. Although personality factors associated with the onset of RA have been discredited, relatively few studies have investigated self-esteem as an element of personality in the psychological adjustment to RA. Self-esteem was defined as the cognitive process in which an individual perceives characteristics of themselves, as well as their behaviourial and affective reactions to those characteristics. It was measured by the Southampton Self-Esteem and Sources of Self-Esteem scale (SSESS). The purpose of the three studies within this thesis was to assess quantitative and qualitative aspects of self-esteem, and symptoms of depression in homogeneous groups of the diverse RA population. The first study was a cross-sectional between-group analysis of elderly adults with RA and an non-RA control group. The elderly RA participants had significantly higher self-reports of depressive symptoms and lower self-esteem than control participants. In addition, the length of RA disease duration was positively correlated with depressive symptoms. This indicates that for older adults longer RA duration was associated with increased reports of depressive symptoms. The second cross-sectional study evaluated depressive symptoms, self-esteem and other variables including perceptions of RA pain, coping strategies and functional ability reported by individuals with amyloidosis as a potentially fatal consequence of RA in comparison with an RA-only group. Although there was no significant difference between the groups' depressive symptom scores, the amyloid participants reported significantly lower scores of self-esteem and lower RA pain reports than the RA-only participants. The third study was longitudinal in design with two assessments separated by six-months. Prior reports of RA pain, helplessness beliefs, passive coping strategies and low self-esteem significantly distinguished participants with elevated symptoms of depression from non-depressed participants. Regression analyses of this study suggested that self-esteem was a direct antecedent and a direct consequence of functional ability as a behaviourial aspect of RA. Illustrative examples of self-esteem sources provided by participants on the SSESS are presented and discussed within the three studies. The limitations and implications of this research, as well as directions for future consideration in relation to understanding RA within a biopsychosocial framework are discussed.

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DECLARATION

I, James Murray, declare that this is an original thesis conducted under normal terms of supervision.

CHAPTER ONE

HEALTH, ILLNESS AND PSYCHOLOGY

1.1 The Mind-Body Relationship

Philosophers, physiologists and, more recently, psychologists have debated about the controversial issue of the mind-body relationship for many years. Are experiences purely mental?, purely physical?, or an interaction of the two?, are some basic questions that have been considered (Gatchel & Baum, 1983). Hippocrates, the ancient Greek physician (circa 400 B.C.) proposed that the brain was the centre of mental activity, and that the four elements of air, earth, fire and water corresponded to four bodily fluids or "humors" (Murray, 1988). Hippocrates presented one of the earliest accounts of the delicate interrelationship that exists between mind and body, with the concept that the life of a patient as a whole and not simply direct effects of external agents should be implicated in the disease process (Dubos, 1995). The humoral theory of Hippocrates was further developed by Galen (circa 200 A.D.), who proposed that the four bodily fluids of black bile, blood, phlegm and yellow bile were associated with specific personality attributes or temperaments including melancholy (sadness), sanguine (optimism), phlegmatic (listless) and choleric (angry), respectively. Although this particular theory of Galen's was abandoned, it is of historical interest because it illustrates the long standing view of the

holistic approach, where biological factors interacted with and affected the mental or psychological characteristics of an individual (Murray, 1988).

A belief in the interrelationship between mind and body was popular until the seventeenth century. The growth of physical medicine during the Renaissance, however, challenged the holistic approach and eventually discredited the importance of mind-body interactions. The idea that the mind influenced the body was regarded as unscientific resulting in the relegation of the concepts of mind and soul to the areas of philosophy and religion. Therefore, with the body as the solitary focus of physical medicine, the dualistic viewpoint that body and mind functioned independently was perpetuated. Rene Descartes (1595-1650), the French philosopher, was instrumental in the move away from the holistic approach and in the development of this dualistic viewpoint. Cartesian dualism of mind and body became the philosophical basis of medicine where bodies were like machines and minds were a spiritual entity.

The importance of Cartesian dualism was strengthened by the discovery in the nineteenth century of external agents of disease, such as bacteria and viruses (Gatchel & Baum, 1983). The only possible explanation of disease during this new scientific era of medicine were physiological principles. Psychological factors in determining health and illness were seldom if ever considered during

this time. The *Manual of Psychological Medicine* by J.C. Bucknill (1817-1897) and D.M. Tuke (1827-1895), and the contributions of Wilhelm Wundt (1832-1920) who considered psychology to be the "science of the spirit", regenerated interest in mind-body relationships in Europe during the mid to late nineteenth century (Murray, 1988). The behaviourist movement in the early part of the twentieth century with its focus on learning theory did, however, sidetrack the growing curiosity about mind-body relationships that was emerging within psychology in the late nineteenth century (Murray, 1988).

The post-war years of this century have produced a resurgence of interest in the interactions between mind and body (Gatchel & Baum, 1983). Psychology, with its input into matters of not only mental health but a holistic union of mental and physical well-being has expanded due to developments in research methodology and theoretical views, including the position that mind and body are not separate entities. Currently, there is once again a focus upon an integrated, holistic approach to health and illness (Sheridan & Radmacher, 1992).

1.2 Beyond the Biomedical Model

The dominant paradigm of medical science is the biomedical model, which has as its focus the identification and treatment of organic causes of disease. The biomedical model views the body as a machine that is fixed by removing or replacing the ailing part or destroying the foreign body that caused the problem without considering the possibility of psychological impact (McClelland, 1985). It is the belief of medical science that health can be restored by physical and chemical interventions administered by health professionals. The biomedical model has, however, been challenged because its strategies seldom empower patients or enhance their adaptation to illness (Sobel, 1995). The challenges and problems associated with the traditional disease model of medical management have become even more dramatic with the current health care trends of improving efficiency of services, controlling costs, monitoring access to health professionals and reviewing the effectiveness of patient care and service delivery.

The development of the field of "health psychology" over the past 25 years has facilitated a new association between medicine and psychology, where psychologists actively participate in the prevention and treatment of medical problems (Wright, 1995). Psychological and social factors have been implicated in the development, progression, management and consequences of chronic

illnesses. Moreover, personality dispositions, social isolation and social support all influence adaptation to disease and illness in ways that can have a profound impact on quality of life and the utilization of medical care (Sobel, 1995). Although health psychology is a relatively new yet burgeoning area of inquiry, it is of vital importance to medical science and the health care system due to the growing awareness that health and illness have many dimensions (Sheridan & Radmacher, 1992). Incorporating psychological and social dimensions into the approach which focuses on biological factors of health and illness - the biopsychosocial model - can empower patients, enhance their adaptation to illness and hopefully improve upon quality of life concurrent with the trend towards cost effective patient care and delivery of medical services.

1.3 Organization of Thesis

This thesis is concerned with reports of self-esteem and depressive symptoms in individuals who suffer from the autoimmune disease, rheumatoid arthritis (RA). The intention is not to continue the general philosophical debate of mind-body relationships, but to investigate specifically the impact of RA on individuals, with reference to the biopsychosocial model and the World Health Organization's definition of health as a state of complete physical, psychological and social well-being and not merely the absence of disease, disorder, illness or

infirmity (Sheridan & Radmacher, 1992).

The thesis is organized into three parts. Part One is the theoretical introduction, with five chapters. Chapter two presents the medical aspects of the rheumatic diseases, with an introduction to the aetiology, pathology and treatment of RA. Chapter three is an introduction to the concept of self-esteem with a focus on theoretical history, formulations and functions. Within chapter three there is also an introduction to the measurement of self-esteem with a focus upon the instrument used in the present research. Chapter four is a discussion and review of the general aspects of depression, with a focus on depressive symptoms. Given that there is a growing body of research in the psychological aspects of RA, chapter five presents an overview of the aims and objectives of the three studies contained in the thesis with reference to a series of specific research questions associated with published findings from a variety of contributors.

Part Two of the thesis presents three empirical studies. Chapter six (study 1) is a cross-sectional pilot study that demonstrates the reliability of a self-esteem scale and the prevalence of depressive symptoms in an aging group of individuals with RA. Chapter seven (study 2) is a cross-sectional evaluation of self-esteem, depressive symptoms, pain, coping with pain and functional ability

in a group of individuals with amyloidosis as a potentially fatal consequence of rheumatic disease. Chapter eight (study 3) employs a longitudinal design to assess the stability over time of the various parameters measured as well as the clinical utility of self-esteem reports in the prediction of depressive symptoms, functional ability, and perceptions of RA pain.

Finally, Part Three of the thesis contains chapter nine which summarises findings of the various research questions addressed in the three studies. This final chapter also presents a discussion and review of the important limitations of the studies, in addition to a conclusion which focuses upon the implications of the research and recommendations for future consideration. Part Three also includes a reference section of journal articles, books and other manuscripts cited throughout the thesis. An appendix section containing notable aspects of the present research methodology completes Part Three and the thesis.

CHAPTER TWO

THE RHEUMATIC DISEASES

There are over 200 different conditions that are considered to be rheumatic diseases. The term arthritis is frequently used within this category of diseases and simply refers to inflammation in the joints, while rheumatism is a more general term used to describe any sort of pain in the bones, joints or muscles. Rheumatic diseases are the most common cause of morbidity in the population (Wright, 1984). Arthritis and rheumatism are the most frequently self-reported conditions in Great Britain. Wyles (1992) reported that over 20 million people have some form of arthritic disorder, with between six to eight million significantly affected. The purpose of this chapter is to introduce the rheumatic diseases. The first section (2.1) discusses the historical aspects, followed by (2.2) common forms of arthritis, and (2.3) rheumatoid arthritis including subsections on pathology, aetiology, diagnosis, and treatment.

2.1 Historical Aspects

Arthritis is an ancient condition that has throughout history been the subject of much misunderstanding. In India at 1000 BC, inflammatory arthritis was believed to be associated with a deep organic malfunction, while Hippocrates (circa 400 B.C.) maintained that it was caused by the retention of body poisons (Wyles, 1992). Hippocrates provided the first clear description of "gouty

arthritis", although bone changes due to arthritis have been identified in skeletal remains that date back to before the construction of the Egyptian pyramids (Wyles, 1992). The various forms of treatment for arthritis that have been used throughout history reflect the popular thoughts about causes of the disease at the time. Cleansing of the body with leeches and liniments, as well as burning the inflamed area were once used as treatments. Draining of bodily fluids - particularly blood - and therefore removing the disease was a common remedy used from the time of Hippocrates through to the eighteenth and nineteenth centuries.

The rheumatic diseases did, however, remain vague and confusing until the turn of the nineteenth century. There remains to this day a serious lack of information about the specific causes of most forms of rheumatic diseases, with the exception of gout (Wyles, 1992). Hereditary predispositions and bacterial infections are two interesting possible causes that have been observed in the past 100 hundred years of intensive research, but successful cures for this diverse and disabling category of diseases cannot be employed until causes are identified.

2.2 Common Forms of Arthritis

The five most common forms of arthritis are gout, osteoarthritis (OA), ankylosing spondylitis (AS), juvenile chronic arthritis (JCA), and rheumatoid arthritis (RA). The first four of these will be presented briefly, while a more in-depth presentation of RA will follow (section 2.3).

2.2.1 Gout

Gout is caused by a build up of uric acid crystals in tissues and joints. Although uric acid is one of the body's waste products that naturally occurs in the blood, hyperuricemia occurs and crystals form if too much uric acid is produced or if an insufficient amount is excreted in the urine. An accumulation of crystals in the synovial fluid of the joints causes inflammation and frictional impairment that erodes bones and cartilage (Arthritis Care, 1995). Gout most often attacks the base of the big toe, but can affect other joints including ankles, knees, hands or wrists. Gout is more frequently diagnosed and treated in men (20:1) than in women (Wyles, 1992). Once treated with anti-inflammatory drugs (with the exception of aspirin) gout is seldom a serious problem so long as alcohol consumption is kept down, body weight is monitored and physical fitness is maintained.

2.2.2 Osteoarthritis (OA)

OA is a condition associated with the deterioration of the cartilage that covers the end of bones. OA generally develops gradually as the non-ossified tissue of the cartilage becomes thin and wears away (Wyles, 1992). Due to this gradual loss of the protective function of the cartilage, the bones thicken, spread out and change shape. Low grade inflammation results as the cartilage continues to thin and fragment, while in advanced stages of OA the joint capsule and synovial membranes are often swollen. Bony outgrowths form at the outer edges of the joint resulting in variable pain and stiffness (Arthritis Care, 1995). OA often affects the weight bearing joints (ankles, hips and knees) which, when severely damaged, can put an increased amount of stress on and potentially damage ligaments and other tissues outside the joint. Secondary OA is more of an acute deterioration of the cartilage resulting from a defined predisposing factor such as an injury. Women are affected by OA more than men (3:2). Strengthening the muscles associated with the damaged joints and relief of pain are the main goals of OA treatment (Wyles, 1992).

2.2.3 Ankylosing Spondylitis (AS)

AS is inflammation in the joints between the vertebrae of the spine, which results in the formation of scar tissue which may calcify and cause joint stiffness. "Ankylosing" simply means stiffening, while "spondylitis" is defined

as inflammation of the spine (Wyles, 1992). Although pain and discomfort are common, for many people with AS there are few, if any, long-term problems. In a relatively limited number of cases the scar tissue may eventually turn to bone, filling the space between the vertebrae thus causing the joints to become totally rigid.

Approximately 95% of those with AS are genetically predisposed to the disease (Hickling & Golding, 1984). Presence of the tissue antigen, human leucocyte-associated B27 (known simply as HLA B27), fuels the disease process in persons with AS. Possession of HLA B27 alone, however, is insufficient to cause AS, for over seven per cent of the U.K. population carry B27. It is possible that certain environmental factors can trigger the disease in genetically predisposed persons (Hickling & Golding, 1984). If the disease is diagnosed early and successfully treated, the serious consequences of AS can be prevented. Exercise is the main form of treatment for AS (Arthritis Care, 1995). This helps to relieve pain, maintain and increase mobility, and prevents scar tissue from solidifying within the joints.

2.2.4 Juvenile Chronic Arthritis (JCA)

JCA is the general term given to arthritic conditions that occur in children under the age of 16 years. JCA is diagnosed in children if pain and swelling in one or more joints exists for a period of longer than three months (Arthritis Care, 1995). The most common form of JCA is pauci-articular arthritis which begins at about the age of two or three years, affects a few joints and continues for several years. Children with pauci-articular arthritis seldom develop serious long term problems, although damage to the eyes is a common feature (Wyles, 1992).

A second type of JCA is polyarthritis which causes severe and widespread joint damage. Polyarthritis can begin at any age from a few months after birth onwards and usually spreads from one joint to another quickly, often within months (Arthritis Care, 1995).

The third type of JCA is systemic arthritis (formerly Still's Disease). Systemic arthritis mainly affects children under the age of five years and not only causes serious joint inflammation, but also fever and rashes (Wyles, 1992). Although JCA creates numerous problems, the majority of children who suffer from its various forms do recover with the help of treatment and go on to lead perfectly normal adult lives.

2.3 Rheumatoid Arthritis (RA)

RA is a chronic, painful disease associated with inflammation of a joints synovial membrane (Hickling & Golding, 1984). RA is an autoimmune disease, which refers to the process where the immune system attacks the body's own tissue (Wyles, 1992). In most other diseases, inflammation is a product of the healing process; when the healing is complete, the inflammation dissipates. But in RA inflammation causes serious joint damage (Arthritis Care, 1995).

In addition to inflammation and pain, RA causes numerous other physical problems, including stiffness, loss of strength and movement in the inflamed joints, as well as fatigue. In 1990, the Arthritis and Rheumatism Council reported that 4.3% of the British population suffered from RA (Wyles, 1992). RA occurs more often in women than in men (3:1). The prevalence rate of RA does, however, increase with age (Arthritis Care, 1995).

2.3.1 The Pathology of RA

RA can develop quite suddenly, but more commonly the symptoms develop gradually over a period of time - months or even years. The synovial membrane which lines the joint cavity becomes inflamed, thus causing swelling, pain and joint stiffness (Arthritis Care, 1995). Synovial fluid begins to leak out of the

membrane and starts to come into contact with and wear away the cartilage attached to the bones which acts as a cushion within the joint. As the disease progresses, the bones themselves begin to deteriorate. The entire joint, including the tendons and ligaments which hold the joint together, become damaged and weakened (Wyles, 1992).

As seen in Figure 2.1, a normal joint has a thin synovial membrane with very little synovial fluid present. The synovial fluid forms a lubricating film between the articular surfaces of the joint which assists in friction free movement (Hickling & Golding, 1984). As seen in Figure 2.2, the inflammatory process of RA causes the synovial membrane to become enlarged and secrete more fluid into the joint which results in swelling and joint effusion. The fluid produced by the inflamed synovial membrane contains high concentrations of proteolytic enzymes which degrade the complexes that give the synovial fluid its normal viscous characteristics and thus thins the cartilage. (Hickling & Golding, 1984). At the more advanced stages of RA, the proteolytic enzymes released by the thickened synovial membrane continue to digest the cartilage and begin to erode the bones. As seen in Figure 2.3, the gradual spread across the articular surface with loss of cartilage and damage to bone are principal factors that lead to the disruption of the joint (Hickling & Golding, 1984). Although this has only been a brief description of the pathology of RA, it must be noted that any synovial tissue (including tendon sheaths) can be affected by this process.

Figure 2.1: Diagram of a normal joint

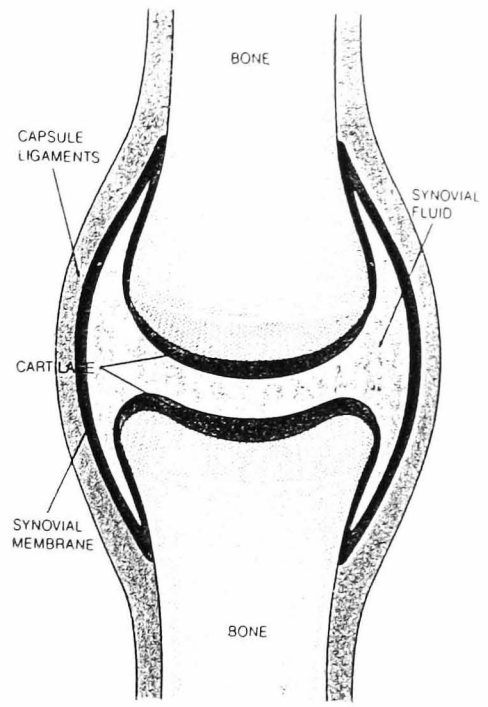


Figure 2.2: Diagram of an early rheumatoid arthritis joint

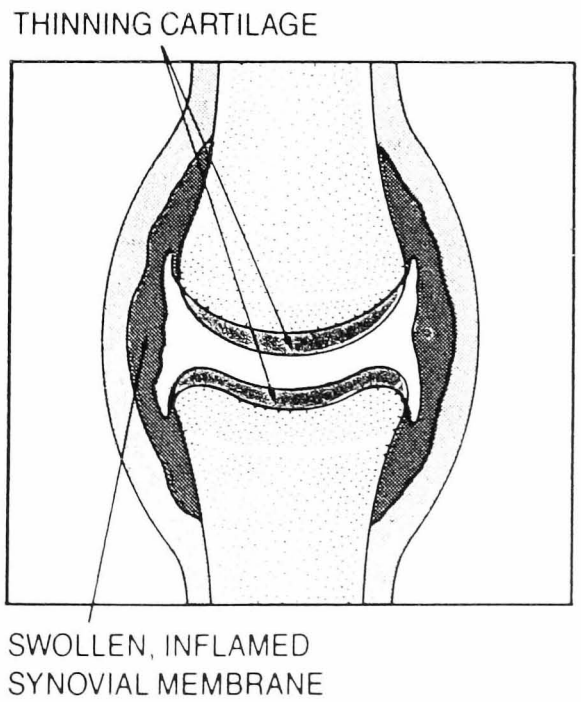
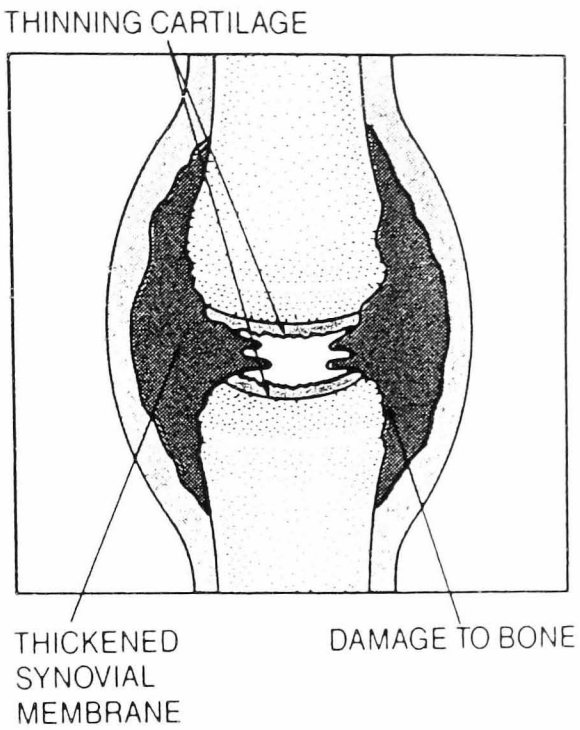


Figure 2.3: Diagram of a more advanced rheumatoid arthritis joint



Remission can occur within two years for 10-20% of RA patients who only experience a disease course of mild symptoms. An additional 10-15% of those with RA experience a progressive disease course with continuing disability, inflammation and pain. The majority of individuals with RA (70%), however, experience unpredictable exacerbations and partial remission of the disease with progressive declines in physical ability (Wyles, 1992). Arthritis Care (1995) report that the pathological joint changes occurring in more advanced stages of RA are often chronic due to the cartilage having limited powers of regeneration and natural healing.

Other clinical features associated with the pathology of RA include, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and rheumatoid factor (RF). ESR and CRP are types of blood tests which indicate the presence and extent of inflammation. ESR is one of only few objective measures of disease severity and is nearly always elevated in acute phases of the disease (Hickling & Golding, 1984). RF (one of seven diagnostic criteria discussed in section 2.3.3) is an immunoglobulin serum found in 90% of persons with RA (Hickling & Golding, 1984), but in only five per cent of the non-RA population (Wyles, 1992).

2.3.2 The Aetiology of RA

Despite intense and dedicated research, the cause or causes of RA remain unknown (Nolla & Lience, 1993). Throughout history there have been many novel ideas forwarded to account for the aetiology of RA, but most current investigations have focused upon three main facts: (i) the chronicity of the disease; (ii) the various immunological disturbances that occur during the disease (persons with RA are susceptible to infections); and (iii) that the target organ in RA is the synovium (Hickling & Golding, 1984). Although the cause of RA remains unknown and that there are still no satisfactory answers to the three RA facts just mentioned, much of the research into the origins of the disease has centred upon infectious agents and genetic factors (Nolla & Lience, 1993). Other potential causes of RA including poor nutrition, problems with

metabolism, abnormalities of the endocrine system, occupational factors and the influences of cold, damp climates have for all intents and purposes been ruled out by critical research (Hickling & Golding, 1984).

As agents of infection, both bacteria and viruses have been implicated as the cause of RA. Although there is some evidence to suggest that the synovial cells of persons with RA could be infected with a virus (viruses are capable of resisting detection within cell nuclei), there is not enough strong evidence to incriminate one particular virus (Hickling & Golding, 1984). Diphtheroid bacilli was at one time thought to cause RA but was not consistently found in the blood or joints even at the early stages of the disease, and was therefore ruled out (Hickling & Golding, 1984). More recently, other viruses such as the human-T-cell lymphotropic virus, the herpes virus, the rubeola virus and the Epstein-Barr virus have had research directed towards them as possible exogenous factors associated with RA (Nolla & Lience, 1993). The infectious agent theory of RA remains somewhat attractive because it is thought that viral particles could be either directly or indirectly responsible for sustaining synovial inflammation in RA (Hickling & Golding, 1984).

Genetic predispositions towards RA is the area of most current research. The idea that a hidden toxic substance or antigen is the origin of RA was given credibility with the discovery of the genetically determined tissue antigen,

human leucocyte-associated DR4 (HLA DR4), carried on the B-lymphocytes in increased frequency among those with RA (Hickling & Golding, 1984). The destructive process of RA is, therefore, partially determined by genetic factors (Nolla & Lience, 1993). The association between RA and HLA DR4 is by no means as high as the association between AS and HLA B27 (Hickling & Golding, 1984). There remains no direct pattern of genetic inheritance for RA, but some family history of the disease is not uncommon.

In an attempt to explain the chronicity of RA and the associated immune disturbances of the disease, the autoimmune phenomena of RA, where there is an abnormal reaction directed against the body's own antigens, could be the triggering mechanism. Though debate on this continues (Nolla & Lience, 1993), it is unknown what causes the autoimmunity in the first place and whether or not this is a cause or an effect of RA (Arthritis Care, 1995).

2.3.3 The Diagnosis of RA

The American Rheumatism Association (ARA) has created the diagnostic criteria for the classification of RA (Arnett, Edworthy & Bloch, 1988). The 1987 ARA classification of RA was a revision of their traditional 1958 diagnostic criteria. The seven criteria for RA and the associated definitions are presented below:

1. Morning Stiffness - in and around the joints lasting at least one hour prior to maximal improvement.

2. Arthritis of three or more joint areas - soft tissue swelling or fluid observed by a physician in three of the 14 (right or left) joint areas.

3. Arthritis of hand joints - at least one inflamed or swollen joint (as in #2) in wrist, metacarpophalangeal (MCP), metatarsphalangeal (MTP) or proximal interphalangeal (PIP) joints.

4. Symmetric arthritis - simultaneous involvement of the same joint areas (as in #2 and #3) on both sides of the body.

5. Rheumatoid nodules - subcutaneous nodules near joints, that have been observed by a physician.

6. Serum rheumatoid factor - the presence of an abnormal amount of serum rheumatoid factor.

7. Radiographic changes - erosion and decalcification of bone localized to or adjacent to the involved joints.

A person is diagnosed with RA based upon the above criteria by a General Practitioner or a Consultant Rheumatologist. For the purpose of classification, an individual is said to have RA if they have satisfied four of the seven ARA criteria (Arnett et al., 1988). In particular, criteria 1 through 4 must have been present for a minimum of six weeks. One of the interesting differences between the ARA 1987 criteria for RA and the 1958 criteria, is that the more recent

classification system has omitted the categories of classic, definite and probable RA. Nolla and Lience (1993) have reported that the 1987 ARA diagnostic criteria have a specificity of 89% and a sensitivity of 91-94%.

2.3.4 The Treatment of RA

The reduction of inflammation and pain levels is often the initial focus of RA treatment (Wyles, 1992). But before drug treatments for RA are considered, the importance of rehabilitation must be introduced, if only briefly. Physiotherapy is vital to the treatment of RA because it helps to improve muscle strength and thus minimizes joint instability and also prevents joint contracture from forming (Hickling & Golding, 1984). Occupational therapy is also an essential element of RA treatment because of its focus on functional adaptation to the disease.

In addition to analgesic medication (such as paracetamol), which are used to relieve pain and are taken when necessary, the drug treatment strategies employed in RA have been compared to a pyramid (Nolla & Lience, 1993). Non-steroidal anti-inflammatory drugs (NSAIDs) are at the base of the pyramid and include the following examples: iburprofen, naproxen and mefenamic acid. NSAIDs are symptom relieving drugs that reduce inflammation during the period in which they are administered (Nolla & Lience, 1993). Although the efficacy of NSAIDs has been demonstrated clinically (Wyles, 1992), there is no

ideal NSAID for RA treatment largely because they cannot alter the basic course of the disease (Nolla & Lience, 1993).

The second stage of the drug treatment pyramid is composed of the disease modifying anti-rheumatic drugs (DMARDs). The DMARDs are also known as second-line drugs and include the following: sodium aurothiomalate (a gold based drug), penicillamine, sulphasalazine and hydroxychloroquine. These are considered to be remission-inducing drugs (Nolla & Lience, 1993), they suppress disease activity and are used in patients with persistently active RA (Hickling & Golding, 1984). Although the DMARDs have an effect upon the pathological processes of RA, they have numerous side-effects (skin rashes, gastrointestinal intolerance, opacification and retinopathy) which must be monitored closely. It is only after a period of time (six weeks to three months) that the DMARDs begin to take action (Hickling & Golding, 1984) and they are used along with analgesics and NSAIDs, which continue to have more immediate effects upon pain and inflammation (Wyles, 1992). Nolla and Lience (1993) state that the DMARDs should be used immediately following RA diagnosis so as to modify the disease process as soon as possible and thus prevent the development of disabling joint destruction.

The immunosuppressive drugs are the third stage of the pharmacologic pyramid of RA treatment and are therefore known as third-line medications. They are used only when strictly necessary in an attempt to reduce the autoimmune process during the severe, irrepressible stages of the disease (Arthritis Care, 1995). The use of immunosuppressives drugs is a controversial issue due to the serious, potentially life threatening side-effects that they can cause. Consequently, they are used only after all other forms of treatment have been exhausted (Nolla & Lience, 1993).

The chronic, painful aspects of RA combined with its unpredictable course and the lack of a cure makes treatment of the disease a difficult and often problematic task. Drug treatments are helpful in achieving the goals of RA management, but low patient adherence to therapeutic regimes is a serious obstacle (Daltroy, 1993). Non-compliance with medication and physical therapy is a critical issue. Daltroy reports that between 51 - 78 percent of RA patients comply with their drug treatment, and that only 34 - 62 percent are compliant with physical therapy. Although there are numerous approaches to RA treatment, Hickling and Golding (1984) conclude that any drug regime for RA should be kept as simple as possible to both reduce the number of side-effects and increase compliance.

CHAPTER THREE

THE CONCEPT OF SELF-ESTEEM

Self-esteem is an attribute or personality variable that is commonly referred to in both academic and lay discussions of individuals and social functioning. The popularity of self-esteem as the evaluative aspect of the self-concept is not, however, free from confusion and disagreement. Self-esteem has received considerable attention in philosophy, psychology and sociology, yet it has been considered an illusive concept with an indeterminant character. Employed by a wide range of theoretical perspectives, self-esteem has been used to explain a variety of behaviourial phenomena (Marsh, 1986). The purpose of this chapter is to introduce self-esteem as an aspect of self-conceptualization and develop a context for the empirical studies of the thesis. The first section (3.1) briefly introduces the theoretical history of *the self* and *self-esteem* from the philosophical and psychological literature. Secondly, (3.2) the definitions and dimensions of the concept of self-esteem are discussed. Thirdly, (3.3) there is a brief review of the formulation and functions of self-esteem. The fourth and final section of this chapter (3.4) presents a discussion of the measurement of self-esteem, with specific reference to the assessment and evaluation of self-esteem employed in the present research.

3.1 Theoretical History of *The Self*

The concept of *self* has a rich history within philosophy. The discipline of psychology and general concern for psychological matters emerged from the intellectual courage of philosophers (Murray, 1988). The early eighteenth century English philosopher, John Locke (1632-1704), considered the concept of self to be an acquired one, that developed during one's lifetime through abstractions and cognitions. Locke believed that the continuity of consciousness was a necessary criterion for asserting that one has a continuing self. The Scottish philosopher, David Hume (1711-1776), employed a reductionist argument of the concept of self. The notion of personal identity which depends upon our thoughts having a resemblance to each other and causing each other, logically leads as Hume argued, to the concept of self. The self is, therefore, an outcome of the cause and effect operations of Hume's Laws of Associations. Although the German philosopher, Immanuel Kant (1724-1804) hypothesized that we have an innate understanding of space and time, he considered the self to be a learned concept (Murray, 1988). The method of introspection used by the early philosophers and the association between *self* and "soul" or "spirit" have created an interesting but restricted historical perspective that has been expanded upon by psychologists and sociologists during the past one hundred years.

The most prolific and popular academic writer within the young discipline of psychology in the late nineteenth century was William James (1842-1910). James is credited as being the earliest *self* psychologist who forwarded the I-Me dichotomy. James argued that the total self is differentiated into two separate aspects. These two fundamentally different dimensions of *self* are: self as the knower (the agent of experience) and the self as that which is known (the contents of experience or the self as object of what is known). The self as knower was referred to by James as the "spiritual Me" and was associated with the state of consciousness. James saw little or no value in self as knower for understanding aspects of human behaviour and considered this aspect of self to pertain to philosophy and not psychology (Wells & Marwell. 1976). James considered the self as object of experience the more important, although more difficult aspect. Self as object consisted of the "material Me" which referred to material things including the person's body and possessions that created a sense of unity, as well as the "social Me" referring to the recognition received from other people. William James (1890) examined the importance of self as object and concluded that an individuals' aspirations and values are vital in determining the manner in which they regard themselves. Heatherton and Polivy (1991) state that William James described self-esteem as being similar to a barometer that falls and rises as a function of an individual's aspirations and success experiences.

The early years of the twentieth century witnessed the growth of psychology as a discipline in addition to specific contributions concerning the concept of self. Charles H. Cooley (1864-1929) emphasized the relationship between self and the social environment; the self that James had referred to as the "social Me". Cooley shared with James the notion that the concept of self was a conscious process. The focus of Cooley's sociological perspective was the continuity of the individual with society, where the self cannot be considered in isolation of the social milieu (Wells & Marwell, 1976). Cooley is best remembered for promoting *the looking-glass self*, which postulates that individual's conception of themselves are determined by perceptions of other people's reactions (Cooley, 1902). The looking-glass self was composed of three principals: the imagination of our appearance to another; the imagination of their judgement of that appearance; and an element of self-feeling. Although Cooley never specifically defined self-esteem, the self-feeling element of the looking-glass self suggests a need for protecting the self against negative influences.

The contribution to the self-concept literature by George H. Mead (1863-1931) was an elaboration of the ideas of James and Cooley. Mead argued that the self was the product of social interactions. A person's concept of self is a reflection of the behaviour of others (Wells & Marwell, 1976). Although the development of the concept of self by way of social processes was Mead's main focus, he did

forward several important features relevant to self-esteem. Firstly, Mead (1934) suggested that a global, cross-situational sense of self (overall self-esteem) existed complementary to and concurrent with a collection of situational self's. And secondly, Mead (1934) considered self-esteem to be an aspect of self-attitudes in general. If the self is a set of reflective attitudes then self-esteem can be described as the evaluative conscious component of these attitudes.

In contrast to the conscious aspects of the self advanced by James, Cooley and Mead, the contributions of psychoanalytic theorists who considered unconscious aspects of the construct have also had a dramatic effect on self conceptualization. Sigmund Freud's (1856-1939) initial theory was concerned with ego rather than self, and while there are some similarities the two constructs are different. The self was a more inclusive term composed of *ego*, *id* and *superego*. The ego was largely a conscious element of the self, which included both conscious and unconscious aspects. The Freudian concept of self, like previous notions of self, was directed towards realistic adaption to the real world. Freud did not, however, deal specifically with the evaluative aspects of self-esteem. His theory focused on emotional processes associated with unconscious conflict between the innate (often sexual) motives of the id and the learned social conventions of the superego.

Theories of the neo-Freudian's have been more directly concerned with self-conception and self-esteem. Alfred Adler (1870-1937), Karen Horney (1885-1952), and Eric Fromm (1900-1980) provided much more dynamic and explicit meaning to the self structure. While they all discussed conscious, preconscious and unconscious processes within the self, they rejected the Freudian idea that libidinal energies were the main force of behaviour (Engler, 1995). These theorists recognised the self as a mediator between basic drives and social reality. Adler, Horney and Fromm all argued that some innate self-drive acted to motivate behaviour.

A universal "striving for superiority" was emphasised by Adler. An individual's perception of a physical characteristic or defect was a reflexive process according to Adler, which motivated their behaviour. Horney posited "self-realization" as the innate drive motivating behaviour. This referred to fulfilling the potentialities of the self present at birth. Basic anxiety experienced by a helpless child in a hostile world was the casual mechanism of self-realization. This anxiety stemmed from the need for security, of which self-esteem was an important component. A basic assumption of Horney's theory was the desire of an individual to value themselves and to be valued by others, which resulted in either self-esteem or self-alienation. Fromm forwarded the idea of "self-fulfilment" as a behaviourial motive. This emphasised the relationship between

a persons's self regard and their ability to deal with others. Fromm associated the idea of self-love with the concept of self-esteem, where self-love and therefore self-esteem was a prerequisite for the ability of loving others (Engler, 1995).

Keen interest in the self-concept and self-esteem did not continue for long in the expanding field of psychology. During the second quarter of this century the growing influences of behaviourism began discarding theoretical concepts that were not concrete or directly observable (Engler, 1995). Subjective, internal phenomena like *the self* were therefore not regarded as suitable subjects for psychological study and thus received little if any attention. Gordon Allport (1897-1967) was one of the first psychologists to go beyond the behaviourist movement to continue work on the self-concept and more generally in the area of "ego psychology". The ideas of ego and self were used more or less interchangeable by Allport. A self-enhancement motive known as ego-enhancement was suggested by Allport to be a built-in aspect of the self. Self-evaluations were to Allport an active process of continual growth, which focused upon "becoming" rather than on just "being". This active rather than passive self assessment was used by Allport to promote additional attempts at self enhancement and evaluation.

Half way through the twentieth century, clinical psychology was finding the tenets of behaviourism too narrow and passive to account for most human behaviour. It was within this context that Carl Rogers (1902-1987) began to influence self and self-esteem theory. Rogers' approach was primarily phenomenological and omitted concepts of ego and superego. As a phenomenologist, Rogers argued that awareness was the cause of behaviour and what an individual feels and thinks determines what they will do. The central construct of Rogers "person-centered theory" was the concept of self; self as a perceived object in a phenomenal field (Rogers, 1951). The basic units of the theory were a person's cognitions and perceptions of their abilities, actions and social relations, otherwise known as *self-regarding attitudes*. Rogers described a self-regarding attitude as having three aspects: a cognitive dimension with a specific content of the attitude; an evaluative dimension with a judgement of the content relative to some standard; and an affective dimension where a feeling is attached to that judgement. Carl Rogers applied the concept of self-esteem to the affective dimension of an individual's self-regarding attitude.

3.2 Definitions and Dimensions of *Self-Esteem*

There is no universal definition of self-esteem, but it is referred to consistently in the literature as an aspect or dimension of self-conception, a component of the self-system, or a mode of orientation towards the self (Ziller, Hagey, Smith & Long, 1969). The lay and professional usage of self-esteem implies something about the nature of the self. In order to fully understand how definitions of self-esteem evolved in the literature of psychology we must first explore definitions of the self.

The ubiquitous nature of *self* in our language and the various meanings seldom explicitly defined have often left the concept in a state of semantic ambiguity. The self-concept is an object of perception that represents specialized behaviourial and cognitive aspects of the personality (Engler, 1995). The self as a hypothetical construct is a reflexive and symbolic structure acquired through social processes. Wells and Marwell (1976) maintain that the hypothetical construct of self is created by a person in an attempt to interpret, order and predict the world. As an abstraction, the self is composed of all the beliefs and evaluations that a person has about themselves.

The self-concept is thus multidimensional reflecting the diversity of experience and different emphases in the process of abstraction. For the purpose of this research thesis, the focus will be on the evaluative dimension of self: *self-esteem*. In terms of scientific questions and empirical data, the use of the evaluative aspect of the self-concept is important for explaining and predicting human behaviour. Without reference to the self-concept, clinicians and researchers have no anchorage for understanding the personal patterns and tendencies that are characteristic of each individual (Wells & Marwell, 1976).

Self-esteem as the evaluative dimension of the self-concept has received a considerable amount of attention in the literature and is regarded as its most important dimension. The concept of self-esteem has appeared under different names and various terms have been employed by different theorists to refer apparently to the same phenomenon. Such terms have included: self-appraisal, self-confidence, self-regard, and self-respect. These terms have stood for the basic process of psychological functioning described as self-evaluation (Well & Marwell, 1976). However, terms such as self-love, self-acceptance, and a sense of competence provide three different connotations of self-esteem. Self-love is primarily associated with affection and is affiliated with psychodynamic approaches. It is regarded as an unconscious process involving instinctual drives and energies. Self-acceptance stresses conscious and preconscious judgements

where the causal mechanisms are not drives and instincts but attitudes directed towards the self. The important aspect of the self-acceptance process is the feeling attached to the attitude. The competence sense of self-esteem emphasises evaluation, where the stress is upon abilities and capacities associated with success and failure (Wells & Marwell, 1976).

In an attempt to introduce a working definition of self-esteem, a distinction must be made between affective and evaluative processes. This is, however, a difficult distinction to overcome because a person's feelings about themselves tend to be significantly associated with evaluations of their abilities, performances and qualities. Descriptions of self-esteem in terms of affective processes stress not the person's self-evaluation but the individual's reaction or response to the evaluation. Self-esteem in these terms regards self-affection and self-evaluation as independent (Wells & Marwell, 1976). An individual may like themselves even if their evaluation of some personal feature is low, or they may dislike themselves even if this evaluation is high. Rogers (1951) believed that his client-centered therapy tried to increase this independence. Descriptions of self-esteem in terms of evaluative processes, however, emphasise instrumentality. This involves judgements of good-bad being made based upon the usefulness of a facet of the person (Wells & Marwell, 1976). This idea of the instrumentality of self-evaluation involves the question of the competence of

a person's abilities, performances and qualities. Ziller et al., (1969) conclude that the instrumental and competent elements of self-evaluation create the need for personal control over reward contingencies to gain goals and avoid failure. The evaluative descriptions of self and the instrumental value of personal facets reflect the social learning processes forwarded by James (1890), Cooley (1902), and Mead (1934).

One of the interesting aspects of self-esteem as an evaluative dimension is the incorporation of the attitudinal process as a cognitive dimension of the self-concept. The key feature of this cognitive dimension of self-esteem as self-attitude is comparing the self with some standard and making a judgement of value (Wells & Marwell, 1976). Rosenberg (1965) stated that self-esteem expresses an attitude of approval or disapproval of the self. Coopersmith (1967) added to this by arguing that self-esteem indicated the extent to which a person believes they are capable, successful and worthy.

One additional element to consider in the definition of self-esteem is the "global" versus "specific" nature of attitudes towards and evaluations of the self. Global self-esteem refers to the overall evaluations of a person. Specific self-esteem is applied only to a single characteristic or facet of a person. An individual has numerous qualities to which they attach value, but they may also

sum these in order to form an overall evaluation (Wells & Marwell, 1976). Although self-esteem is open to momentary changes, there is a certain standard to the self-evaluations that people maintain (Heatherton & Polivy, 1991). William James (1890) maintained that this summation of specific self-attitudes may be regarded as a collection. As a unified concept, self-esteem has been described as a linear combination of individual and specific self estimates (Rosenberg, 1965). Heatherton and Polivy (1991) conclude that self-esteem is a relatively enduring, global disposition.

Self-esteem as the evaluative dimension of the self-concept used in this research thesis refers to the cognitive process in which an individual perceives characteristics of themselves, as well as their behaviourial and affective reactions to those characteristics (Wells & Marwell, 1976). For the purpose of the present investigations, self-esteem will be regarded as a unitary concept, with a focus on the global self-esteem of the research participants.

3.3 Formulation and Functions of Self-Esteem

The growth and development of self-esteem have been the focus of numerous approaches including symbolic interactionists, humanist, and social learning theorists. It is beyond the scope of this section to present an indepth description of these formulations of self-esteem, but an introduction to each is presented. The symbolic interactionists formulation views self-esteem as a product of continuous social interaction. As previously mentioned in section 3.1, James, Cooley and Mead all discussed and emphasised the importance of social processes. The humanist approach focuses on the conditions that facilitate self-understanding and diminish conflict, but generally they have not (with the possible exception of Abraham Maslow and his esteem needs) specifically discussed the development of self-esteem (Engler, 1995). Although Carl Rogers employed the self as a structural unit within his person-centered theory, he did not forward specific ideas of growth and development of self beyond the process needs for unconditional positive regard and conditions of worth (Rogers, 1951). Like symbolic interactionists, the social learning theorists emphasise others in the formulation of self-esteem. Albert Bandura (1986) states that the attitudes and behaviourial characteristics of a person are acquired through the process of modelling and imitation. According to Bandura, the mechanism which links modelling behaviour to self-esteem is self-reinforcement. This involves individuals generally adopting the standards for self-reinforcement exhibited by

exemplary others.

One of the reasons that self-esteem has been used in psychological research is due to the evaluative dimension of the self as important for understanding human behaviour. Self-esteem thus appears to have a three-fold function: (1) determining how experiences are interpreted; (2) providing a set of expectancies; and (3) maintaining consistency (Wells & Marwell, 1976). Determining how individual's interpret their experiences is one important function of self-esteem. Self-esteem is analogous to a filter and every experience of failure and success passes through this filter. There are strong tendencies to interpret experiences in ways which are consistent with individuals' views. The manner in which meaning is attached to each new experience of failure or success is determined largely by the view the individual has of themselves. A second function is that self-esteem helps determine what an individual expects to happen. A person's set of expectations help to determine their behaviour. Wells and Marwell conclude that much of what a person chooses to do and the manner in which they do it, is presumed to be dependent upon and influenced by self-esteem. People who perceive themselves in a negative way expect others not to like them. These individual's act either in ways consistent with this negative self perception or interpret everything so that it fits with their expectancy. The third function of self-esteem is in the maintenance of consistency. An individual will

act in ways that are consistent with how they evaluate themselves. What a person thinks and feels about themselves, and their associated behaviours are a vital part of internal consistency. If a person evaluates themselves as ineffectual and moronic or creative and responsible, they are likely to behave in ways that reflect these evaluations.

As different individuals have differing attitudes towards themselves and different levels of awareness of these attitudes, there are therefore, different levels of self-esteem. Negative attitudes towards the self are equated with self-hatred, inferiority, negative self-acceptance and self-esteem. Positive self-attitudes are equated with self-respect, positive self-acceptance and self-esteem.

There has been, however, disagreement between theorists as to what level of self-esteem is best for the psychological adjustment of an individual in both personal and social terms. It is generally accepted that high levels of self-esteem are associated with "good" or "healthy" adjustment and behaviours (Rosenberg, 1965; Coopersmith, 1967; Ziller et al., 1969). The argument for this approach states that there is a positive linear relationship between self-esteem and psychological adjustment. Also, it is presumed that high self-esteem is a desired and preferred state due to its important social and psychological function. An individual with low levels of self-esteem is more likely to lack

self-confidence, be dependent upon others, be shy, be less flexible, and be guarded as well as defensive (Rosenberg, 1965; Coopersmith, 1967; Ziller et al., 1969). Low self-esteem is generally associated with less than adequate psychological adjustment and is considered to be less functional than high self-esteem and, therefore, not a desirable state. Negative self evaluations create vulnerability to depression (Beck, 1967), and it has also been reported that low self-esteem is predictive of an increased risk of depression at a caseness level (Brown & Harris, 1978; Brown, Bifulco, Veiel & Andrews, 1993).

For the purpose of health related research with older adults, these accounts of the development and formulation of self-esteem are less than adequate. Due to the focus of these theoretical ideas being largely on development of the concept in children and adolescence. There is surprisingly little discussion in the literature with specific attention to maintenance and regulation of self-esteem, as well as personal identity in old age (Coleman, 1984; Coleman, Aubin, Robinson, Ivani-Chalian & Briggs, 1993). Erik Erikson's (1902-1994) ego integrity versus despair stage of personality development is, however, one major theoretical viewpoint concerned with older adults. Wisdom is the virtue of this final stage of Erikson's theory (Engler, 1995). According to Erikson, integrity requires wisdom to successfully reflect on one's satisfaction with life, despite the biological aspects of ageing (Powell, 1994). There remains, however, a lack of

empirical evidence from applied research on the course of identity in older adults (Coleman et al., 1993). A better understanding of self-evaluations in later life, and especially the ways in which self-esteem is maintained and lost with reference to ageing and health would be of value to both clinical research and health psychology. Additional comments on the functions of self-esteem are presented elsewhere in the thesis. The relationship between depression and self-esteem is discussed further in chapter four, while self-esteem as a psychological aspect of rheumatoid arthritis is considered in chapter five.

3.4 The Measurement of Self-Esteem

Now that a working definition, as well as formulation and functions of self-esteem have been discussed, attention must be directed towards "operationalizing" the concept. This refers to the development and use of (1) objective, (2) standardised, and (3) quantified measurements of the hypothetical construct (Wells & Marwell, 1976). For a measurement instrument to be objective it should yield consistent results which are free from the personal biases of the measurer. A standardised measurement instrument should employ procedures that are equivalent for all persons whose self-esteem is being measured. Finally, the measurement of self-esteem should included procedures with a quantitative scaling process. Quantified measurement involves rules for

assigning numbers to objects that represent quantities of a specific attribute (Nunnally & Bernstein, 1994).

As a subset of personality measurement, the operationalizing of self-esteem has involved a wide variety of empirical techniques (Rosenberg, 1965; Coopersmith, 1967; Ziller et al., 1969; Heatherton & Polivy, 1991). By far the most common approach to self-esteem measurement has been the use of self-report questionnaires. These measurement instruments have been considered interesting and valuable as they are readily and economically available to researchers. Self-report scales involve sets of written or verbal stimuli of evaluations or descriptions with the respondent indicating the perceived applicability to themselves. Wells and Marwell (1976) state that there are two main features of self-report measurement instruments.

The first main feature of self-report instruments is that they rely upon the verbal aptitude of the person being measured. The stimuli in such self-esteem measures includes descriptive adjectives, phrases, sentences and paragraphs that are presented in either written or verbal forms. The response task of the respondent is also either written or verbal; the presented stimuli are evaluated in terms of a set of verbal modifiers. Ziller et al. (1969) argued that these self-report measures tend to confound self-esteem with verbal skills and styles.

Although attempts have been made to construct "non-verbal" self-esteem measures by using spatial and symbolic tasks, Wells and Marwell (1976) reported the accepted levels of reliability and validity of have not been found for such self-report scales.

The second important feature of self-report scales of self-esteem is how measurement of self descriptions are translated into evaluative ratings. An important questions is: how does a researcher obtain a self-esteem score from an individual's responses to the presented stimuli? Different procedures for empirically and quantitatively indexing self-esteem can arise from different definitions of the concept. Wells and Marwell (1976) suggest that three self-report procedures are common in the psychological literature of self-esteem measurement. These include: (a) *direct evaluations*; (b) *explicitly derived evaluations*; and (c) *implicitly derived evaluations*.

In *direct evaluations*, a respondent reports their affective or evaluative feelings about themselves. Adjective checklists, where respondents indicate the direction and magnitude of their self-ratings are an example of direct evaluation of self-esteem. Direct evaluation procedures for acquiring self-esteem scores are associated with the affective or emotional definitions of self-esteem.

Explicitly derived evaluations have respondents provide separate and parallel descriptions of their actual self and their ideal self. A self-esteem score is computationally derived by the researcher from the two evaluations using a statistical relationship between their discrepancy. This type of procedure conceptualizes self-esteem as the discrepancy between actual self-perceptions and ideals. Explicitly derived evaluations thus define self-esteem as the discrepancy between these two self-attitudes.

Implicitly derived evaluations generally provide a single summated index of global self-esteem. Like the second procedure, the respondent does not directly evaluate themselves, instead they describe themselves by indicating how true a particular description is of them. Unlike the second procedure, however, the implicitly derived evaluation procedure is a one-part score, which does not incorporate an individual's expressed ideal. The original Rosenberg (1965) Self-Esteem Scale is an example of such a measure. The logic of this procedure is that self-evaluation is implicit in self-description and that this implicit process is consistent across persons. This self-report procedure reflects the definition of self-esteem as the attitudinal process of the cognitive dimension of the self-concept.

For the purpose of this research thesis the self-report measurement instrument known as the *Southampton Self-Esteem and Sources of Self-Esteem Scale* (SSESS) will be used. This objective, standardized, and quantified self-esteem measure has been extensively used by Coleman and colleagues (Coleman, 1984; Coleman et al., 1993; Coleman, 1993), and has reliable psychometric properties. The SSESS (see Appendix H) is an implicitly derived evaluation procedure which generates a unidimensional measure of global self-esteem.

The SSESS was developed in the Netherlands and used in England to assess the evaluative aspects of self-esteem in an ageing population. Although there are no published reports that have used the SSESS in the health psychology literature, it is employed in the present research because it reflects the previously stated definition of self-esteem. The ten items of the SSESS are each scored on a three point scale allowing for a neutral or unsure answer as well as a definite choice between positive and negative self evaluations. A total summated rating scale is calculated by adding scores from the ten individual items. Coleman (1984) suggests that four categories of level of self-esteem ("high", "medium-high", "medium-low" and, "low") can be calculated from the SSESS.

In addition to providing a quantitative score of self-esteem, the SSESS is specifically designed to collect qualitative information from respondents on

perceived sources of self-esteem. Respondents are requested to provide examples following each SSESS item to illustrate their self evaluation. These sources are used to indicate how each individual generates and sustains their self-esteem. Coleman and colleagues have forwarded a limited number of coding categories for recording these illustrative examples of sources of self-esteem. This method involves recording personal references to the following areas: family contacts; other interpersonal contacts; good health or "essential" activities of daily living; "interest" activities; "work" or "organization" activities; the individual's own internal characteristics; and "environmental" or external circumstances. A more indepth discussion of research findings and procedures associated with the quantitative and qualitative aspects of the SSESS is presented in the introduction to the first study (chapter six).

As the aim of the present research is to assess the relationship between self-esteem and symptoms of depression in persons with RA, it is hoped that the results of the three studies of this thesis, with the quantitative and qualitative aspects of self-esteem generated by the SSESS will add to the growing body of knowledge associated with the psychological aspects of RA, and generally help in the understanding of psychosocial problems associated with the disease.

CHAPTER FOUR

DEPRESSION

Depression is one of the most common psychological problems recognized and treated in both general medical practice and outpatient clinics (Beck, 1972). As a disorder of affect or mood, depression is considered to be a highly prevalent illness, with life-time incidence rates for clinical depression to be between four to 20 per cent (Davison & Neale, 1994; Hirschfeld, 1994; Horwath, Johnson, Klerman & Weissman, 1992; Wittchen, Knauper & Kessler, 1994). The classification and separation of clinical depression into meaningful subcategories used by psychiatry, including major depression, dysthymia, recurrent brief depression and depressive personality disorder has, however, been the subject of considerable debate (Hirschfeld, 1994). Moreover, there has been recent interest in research psychology to understand more about depressive symptoms that do not reach the threshold for clinical classifications (Block, Gjerde & Block, 1991; Sherbourne, Wells, Hays, Rogers, Burnam & Judd, 1994).

The purpose of this chapter is to present a discussion and review of the general aspects of depression with reference to depressive symptoms, which is a term chosen to represent depressive tendencies or subthreshold depression. The focus of this research thesis is symptoms of depression in a nonclinical community

sample and not clinical depressive disorders as defined and measured by psychiatry. The intention of this chapter is to discuss the various problems of affect and mood addressed in the psychological literature in order to develop a general understanding of depression, therefore creating a framework for forthcoming chapters. The first section of this chapter (4.1) introduces the symptoms and classification of depression, followed by (4.2) understanding depression with subsections including biological aspects, psychodynamic theories, and cognitive models; (4.3) psychosocial functioning and depression including subsections on learned helplessness, social support, as well as self-esteem and depression; (4.4) the effects of individual variables on depression, including subsections concerning age, gender, and physical health; while the final section (4.5) introduces the measurement of depression and depressive symptoms.

4.1 Symptoms and Classification of Depression

The cardinal symptoms of depression include: (1) dysphoric mood; sad, lonely, apathetic, or irritable mood; (2) psychomotor changes with slow or agitated activity levels and a diminished interest in pleasant and enjoyable activities; (3) intellectual retardation, including impaired thought processing with high distractibility, indecisiveness and disinterestedness; (4) feelings of worthlessness

and exaggerated self-blame; (5) disturbed diurnal-nocturnal functioning, including disturbed sleep patterns; (6) disturbed bodily functioning including fatigue, significant weight loss or gain, and diminished sexual interest; and (7) recurrent thoughts of death or suicide. (Block et al., 1991; DeVellis, 1993; Johnson et al., 1993; Sherbourne et al., 1994).

There exists within psychiatry a developed classification of clinical depression, but at present there is no "gold standard" for assessing depressive symptomatology and depressive tendencies of the general population (Sherbourne et al., 1994). Considering that the research within this thesis is concerned only with depressive tendencies or severity of depressive experiences, only a brief review of the diagnostic categories of clinical depression is presented.

Major depression is the most important diagnostic category used in both the Diagnostic and Statistics Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) and the International Classification of Diseases (ICD-10; World Health Organization, 1992). The diagnosis of major depression from the DSM-IV involves five or more of the following specific criteria for at least two weeks (one of which must be either depressed mood or loss of interest): anhedonia, depressed mood, difficulty concentrating, diminished ability

to think, fatigue, feelings of worthlessness, psychomotor agitation, significant weight loss or gain, suicidal thoughts, and trouble sleeping. The diagnostic criteria for major depression is very similar within the ICD-10, with the exception of the time limit. One of the interesting features is that an individual can be diagnosed with a major depressive episode without reporting sadness if they report the inability to experience pleasure.

Dysthymia is a chronic, less severe depression characterised by depressed mood for most of the day during the majority of days over a two year period. In addition to depressed mood, the DSM-IV states that at least two of the following symptoms must be present for a diagnosis of dysthymia: feelings of hopelessness, fatigue, hypersomnia or insomnia, low self-esteem, over-eating or poor appetite, and poor concentration or difficulty making decisions. The criteria for dysthymia within the ICD-10 are very similar to those reported in the DSM-IV, including the time scale (Hirschfeld, 1994). If an individual's symptoms meet the criteria for major depression, they are not classified as dysthymia. But if a person with pre-existing dysthymia experiences an episode of major depression, they are diagnosed with both, a condition often referred to as "double depression" (DeVellis, 1993).

In regards to a disparity that exists between the lack of standardisation for depressive tendencies and the categorisation of clinical depression, the tendency to differentiate depression into disease versus distress is often misleading. As Brown, Craig and Harris (1985) suggest, the variations and distributions of symptoms is less clear cut than this *disease-distress* distinction permits. They argued that it is problematic to consider the despair, sadness and other depressive experiences of community based individuals as *distress*, which implies a natural and unpleasant process with a transient nature that does not require clinical intervention. It is also misleading to consider the *disease* of depression as afflicting only those who attend psychiatric departments, implying a departure from normality which requires clinical intervention (Brown, Craig & Harris, 1985). These researchers concluded that there is considerable convergence in characteristics between depressions treated by psychiatrists and those untreated in the general population. Little attention, however, has been directed towards distressful conditions and depressive symptoms that fall beneath the threshold for depression as a psychiatric disease (Block et al., 1991).

Classifications of depressive disorders were designed to identify conditions that are clinically significant in terms of symptoms, functioning and prognosis. It is, however, emerging in the literature that individuals with depressive symptoms in the absence of a clinical classification have considerable dysfunction and

morbidity (Johnson, Weissman & Klerman, 1992; Sherbourne et al., 1994). The lifetime prevalence rate for depressive symptoms is between 10 to 24 percent, and that 50 percent of individuals with first-onset major depression have had prior depressive symptoms (Horwath et al., 1992).

There are a number of interesting issues that have been presented in the literature that encourage and support the need for research which focuses upon depressive symptomatology or depressive tendencies in the absence of clinical depression. Firstly, psychiatrists and other mental health specialists are only consulted by a fraction of individuals who suffer from depression (Klerman, 1989), and that depressive symptoms often go unrecognised and untreated by physicians (Horwath et at., 1992). Secondly, individuals with depressive symptoms in the absence of a clinical diagnosis complain of impairment and seek medical attention (Klerman, 1989). Thirdly, there is an overlap of symptoms between medical illness and depression, where symptoms of the former cannot be superimposed upon the diagnostic criteria of the latter (DeVellis, 1993). And fourthly, severe depressive symptoms can lead to the development of a clinical diagnosis of depression (DeVellis, 1993; Horwath et al., 1992; Sherbourne et al., 1994). Research into the identification of depressive symptoms and depressive tendencies can hopefully contribute to the recognition and treatment of this affective disorder. In addition, this area of

research could have implications for the prevention of major depression (Horwath et al., 1992).

4.2 Understanding Depression

Biochemical aspects, psychodynamic theories and cognitive models are all important in the understanding of depression. Although not one approach provides a complete and comprehensive understanding of depression, the contributions of each are briefly presented.

4.2.1 Biochemical Aspects

One way to understand disorders of affect or mood is in terms of biological characteristics. This approach has been popular throughout time. The ancient Greeks held that depression, and more specifically *melancholy*, was produced by the accumulation of black bile that resulted from the failure of the liver to remove toxic substances from food (Murray, 1988). The modern approach to understanding depression suggests that it results from activation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system (Checkley, 1989; Herbert & Cohen, 1993). Although no complete biochemical theory of depression exists, a number of important advances have been made which further our understanding of the biological aspects of affect and mood.

Current biochemical theories of depression focus on two monoamine neurotransmitters: norepinephrine and serotonin. Norepinephrine is a catecholamic neurotransmitter, while serotonin is an indoleamic neurotransmitter. The implication of these two neurotransmitters in the aetiology of depression comes from findings associated with chemical substances that either induce or relieve depressive experiences. Beatty (1995) presents four lines of biochemical evidence for understanding depression.

Firstly, the substance reserpine derived from the herb *rauwolfia serpentina* has been found to elicit depressive symptoms in certain individuals. Pharmacologically, reserpine causes the depletion of presynaptic catecholamine supplies, suggesting that depressive symptoms are due to the reduced volume of these neurotransmitters within the central nervous system (CNS). Secondly, monoamine oxidase (MAO) is an enzyme that inactivates norepinephrine and serotonin, converting them into inactive compounds. The introduction of MAO inhibitors which block the action of monoamine oxidase, relieves depressive experiences. This supports the argument that depression results from depletion of monoamines within the CNS. Thirdly, the introduction of tricyclic antidepressants which block the synaptic reuptake of norepinephrine relieves depression. Tricyclic antidepressants thus allow more of the neurotransmitter to remain in the synaptic cleft where it can exert its effect. This lends support to

the idea that depressive experiences result from monoamine depletion. And fourthly, Beatty (1995) states that the introduction of selective serotonin reuptake inhibitors (SSRI's) which block the synaptic reuptake of serotonin, thus allowing more of this neurotransmitter to remain in the synaptic cleft, also alleviates experiences of depression. The success of MAO inhibitors, tricyclic antidepressants and more recently SSRI's in treating depression has generated both clinical and research evidence for understanding depression in biochemical terms (Beatty, 1995).

4.2.2 Psychodynamic Theories

One of the oldest psychological approaches to understanding depression are the psychodynamic theories. Historically, psychodynamic principles concerning the nature and causes of depression have developed in conjunction with psychoanalysis. "Psychodynamic" is, however, the term that refers to models that explain what depression is and how it occurred, while "psychoanalysis" is the term used to describe a specific form of treatment (Hirschfeld, Klerman, Chodoff, Korchin & Barrett, 1976).

One of the fundamental tenets of the psychodynamic approach to depression is that for each and every individual psychological meaning is created by unconscious struggles with desires and prohibitions that leads to a process of

compromised resolutions of these struggles. Psychodynamic theories assume that important aspects of mental activity are out with individual's awareness, and that feelings, ideas and wishes about oneself and others that are crucial in determining behaviour remain unconscious (Kelly & Cooper, 1989).

A second important aspect of psychodynamic theories of depression is the prominence of oral themes. Since symptoms of appetite and eating are common in depression, symbolically they represent personal feelings of emptiness in terms of energy, emotional support or punishment. These oral themes represent a division between self and others, or simply what is inside and what is outside the definition of ego or self. Kelly and Cooper (1989) state that this feature demonstrates a connection between depression and relationships with oneself and others.

A third major feature of depression from the psychodynamic theory, is that it results from situations of loss and includes feelings of sadness and the inability to experience pleasure. Depression is an adult manifestation of the loss of a needed object of attachment in early childhood (Hirschfeld et al., 1976). A related fourth feature is that depression can be defined as a state of "ego-powerlessness". An ego depends upon the establishment of goals, including the wish to be loved, strong, worthy and appreciated. The loss or obstruction of

those goals and wishes can cause depression. These theoretical features for understanding depression are associated with ideas for the treatment of depression within psychoanalysis. Psychodynamic theories attempt to explain the cause of depression, without excluding other mechanisms including neurotransmitter functions and patterns of learned behaviour.

4.2.3 Cognitive Models

The assumption that psychological processes involve "knowing" or "coming to know" is central to the cognitive models of depression. Cognitions are, therefore, primary in the aetiology and manifestations of symptoms of depression. Cognitive processes basically refer to: (i) information-processing functions such as screening, registration and coding; (ii) the identification of internal and external stimuli; (iii) the organization and storage of stimuli traces; (iv) memory; and (v) higher-order functions such as problem solving (Haas & Fitzgibbon, 1989).

Cognitive theories suggest that cognitive content and style cause depressed mood, as well as the motivational and behaviourial deficits characteristic of depression (Beck, 1967; Haas & Fitzgibbon, 1989). Aaron Beck (1967) proposed one of the earliest and influential cognitive theories of depression. His theory developed from clinical experience of treating depressive conditions, from

which he was influenced specifically by the content and form of "depressive" verbalizations generated by depressed clients (Haas & Fitzgibbon, 1989). Drawing on these observations, Beck (1967) identified three major cognitive features of depression: (1) negative self-schemas, which are hypothetical cognitive structures that influence the screening, coding, and organization of incoming stimuli; (2) the *cognitive triad* which refers to the negative views of self, future and world, held by depressed persons; and (3) errors in information processing, such as drawing conclusions based upon inadequate information, misinterpretation of ambiguous stimuli, and the over estimation of negative events.

Beck's (1967) theory states that negative self-schemas influence the perception, registration, organization, and recall of stimulus input. Accordingly, individual's with depression tend to experience and display a bias towards the perception and recall of negative-valence information regarding the self. Relevant research has produced results indicating a differential pattern of recall for varied stimulus material including, positive/pleasant versus negative/unpleasant content with personal and nonpersonal reference. This differential pattern exists between depressed and non-depressed individuals, with depressives' recall being superior for negative (in contrast to positive) personal referent material (Haas & Fitzgibbon, 1989). These findings help support Beck's notion of hypothesized

cognitive structures that influence the screening, coding and organization of incoming stimuli, and in depressed individuals these self-schemas facilitate the processing of negative self-referent material.

The second major feature of Beck's theory of depression is the cognitive triad. This postulates that depression is, in part, maintained firstly by conscious cognitive evaluations of the self which reflect the operation of self-schemas (Beck, 1967). Self-esteem and self-image are relatively stable, trait-like orientations of the self that are consistent with self-schema, and thus maintain consistency in perception and evaluation of traits and personal behaviour (Haas & Fitzgibbon, 1989). The processing of negative self-referent material leads to the development of negative views of self. It is characteristic of depressive individuals to have an exaggerated negative self-concept. Beck's model states that the depressive's negative self-image is supported by feelings of inadequacy, ineffectuality, and self-blame consistent with the negative self-schema (Beck, 1967).

Secondly, Beck's cognitive triad suggests that depression is maintained by negative views of the future. Individuals with depression are inclined to anticipate negative outcomes, either as a continuation of current unpleasant conditions or in relation to new events and situations (Haas & Fitzgibbon, 1989).

Pessimistic views of the future are characteristic of depressed individuals (Beck, 1967). Negative cognitions about future outcomes including expectancies of success and feelings of hopelessness about the future show a significant degree of association with depressive experiences (Beck, 1972).

In addition to having negative views of the self and a pessimistic outlook with regard to the future, Beck's cognitive triad suggests that depressives have a negative view of the external world (Beck, 1967). A generally critical or negative view of the world can be a consequence of depressed mood. This is illustrated by the significant reduction in ratings of the pleasure value of previously enjoyable and important activities. The tendency toward withdrawal from sources of gratification and reinforcement reflect a depressed person's negative view of the world and not simply the reduced effectiveness of reinforcers (Beck, 1972).

The third major cognitive feature of depression are errors in information processing. Beck believes that depressives engage in thinking that involves considerable distortions of reality. Illogical thinking among depressed individuals may be associated with magnification of negative experiences, and minimization of positive experiences, as well as overgeneralization or unfounded extrapolation to a larger whole based upon selective attention to a small

unrepresentative detail (Haas & Fitzgibbon, 1989). In addition, Beck suggested that individual's with depression lacked a critical attitude towards negative cognitions and that their thoughts are too absolute, too extreme, and too highly personalized (Beck, 1972).

4.3 Psychosocial Functioning and Depression

In addition to dysfunctional cognitions, other abnormalities such as distressed relationships, deficits in social behaviour, and personality variables have been implicated in the aetiology of depression by theorists of different orientations (Beck, 1972; Brown & Harris, 1978; Hirschfeld et al., 1976). Various aspects of psychosocial functioning have, therefore, been reported to have an effect on the development and course of depressive symptoms (Barnett & Gotlib, 1988). The concepts of learned helplessness, social support and self-esteem with their association to depression are addressed in this chapter, while a more focused discussion with research findings is presented in chapter 5.

4.3.1 Learned Helplessness and Depression

The reformulated model of human helplessness proposes that depression arises as a result of believing that life events are beyond control (Garber & Seligman, 1980). The central hypothesis of this model is that affective, cognitive and

motivational deficits result from learning that outcomes are uncontrollable. As a consequence, individuals who are experiencing symptoms of depression fail to accurately perceive a response-outcome contingency, when in fact outcomes are contingent upon their own performance (Haas & Fitzgibbon, 1989). Attributions, or causes and explanations that people give for their lack of control are influential in the development of learned helplessness.

Within this model, three different attribution dimensions have been forwarded to account for the development of helplessness; *internal/external*, *stable/unstable*, and *global/specific* (Garber & Seligman, 1980). Firstly, attributions can be classified as either internal or external. For example, a person can attribute their lack of control to internal and personal features such as poor skills or low motivation, or to an external cause such as an unfair test. Secondly, lack of control can be attributed to stable and consistent features such as intelligence, or to unstable and inconsistent features such as lack of effort. And thirdly, attributions can be either global and apply to many different situations, or be specific and apply only to very few (Metalsky, Halberstadt & Abramson, 1987).

Depressive experiences can occur as a function of maintaining stable and global attributions for negative events, and external, unstable and specific attributions for positive events. The stability and global dimensions reflect, respectively, the

chronicity and generality of depressive experiences (Brewin & Furnham, 1986). Accordingly, the diathesis-stress component of learned helplessness states that the generalized tendency to attribute negative life events to stable and global attributions is a vulnerability factor (or attributional diathesis) that interacts with negative life events (stress) in contributing to the onset and maintenance of depressive symptoms (Metalsky, Joiner, Hardin & Abramson, 1993).

4.3.2 Social Support and Depression

At its broadest level, social support can be defined as a process by which an individual develops, uses and maintains social resources (Brown & Harris, 1978). More particularly, social support can be either functional or structural. The former refers to tangible support where information, ideas and companionship are shared. The latter refers to the quantity and quality of interpersonal relationships (Barnett & Gotlib, 1988). There is evidence that supportive partners, families and friends as social resources provide a reduced risk for psychopathology. This is basically the stress-buffering hypothesis, where there is a relationship between positive support and adjustment to stressful circumstances (Kessler, Kendler, Heath, Neale & Eaves, 1992). There exists also the notion that problems with social support are closely linked to vulnerability for depression (Brown & Harris, 1978). Barnett and Gotlib (1988)

argue that smaller networks with fewer relationships and less perceived adequacy of relationships are all related to depressive symptoms.

Difficulties with intimate interpersonal relationships and experiences of depressive symptoms are a more specific aspect of social support. Research findings associated with the stress-buffering hypothesis have demonstrated that perceived support from a spouse is more important than from friends or relatives (Kessler et al., 1992). The idea that depression is related to a loss of social skills and an increase in social incompetence has also been reported. Robins (1988) concludes that the excessive reliance upon a spouse by an individual experiencing depressive symptoms is the result of their negative cognitions and their inability to problem solve. Moreover, dysfunctional patterns of communication between couples including increased expressions of dysphoria and lower levels of mutual self-disclosure occur with a depressed partner or spouse (Barnett & Gotlib, 1988). The conventional view is that perceived social support promotes adjustment to stress, however, differences in social competence may affect the process underlying this association (Kessler et al., 1992).

4.3.3 Self-esteem and Depression

Introduced in chapter three as the evaluative component of the self-concept, self-esteem is an important hypothetical construct in depressive experiences. Although it may be difficult to separate self-esteem and depression, Coleman et al. (1993) argue that investigations into self-esteem will cast light in the direction of the symptoms and treatment of depression. The relationship between self-esteem and depression, is therefore, considered to be a fundamental psychological mechanism of depression.

The psychodymanic theories considered self-esteem a mechanism of depression that creates an awareness in the ego of its own helplessness and powerlessness (Hirschfeld et al., 1976). Beck (1967) also discussed the key role of a fall in self-esteem in the onset of clinical depression. From the learned helplessness approach to depression, the attributional dimension of internality (the extent to which outcomes are perceived as being due to oneself or to external circumstances) is an important determinant of self-esteem (Brewin & Furnham, 1986). These authors state that individuals who make internal attributions for positive events have higher self-esteem, while the same attributions for negative events reflect low self-esteem.

Low levels of global self-esteem create and maintain cognitive and behaviourial

depressive experiences including general pessimism, helplessness and impaired social skills (Hirschfeld et al., 1976). The predictive role of low self-esteem in depressive experiences is, however, disputed. In a study of depression related cognitions, Lewinsohn, Steinmetz, Larson and Franklin (1981) failed to show that those who went on to satisfy the criteria for major depression differed significantly in level of self-esteem when compared to non-depressed individuals. Although, they did report that significant differences in self-esteem between these two groups did emerge after depression occurred. They concluded that low self-esteem is a consequence of depression. In contrast, Brown and Harris (1978) speculated that vulnerability factors including low levels of intimacy in close relationships and the early loss of a mother would lower self-esteem thus increasing the risk of depression in the presence of a severely threatening life event. Andrews and Brown (1993) reported that self-esteem clearly has a predictive role in the development of depression.

Although it is extremely difficult in research to gain access to individuals prior to depressive experiences, the causal role of negative self-evaluation in the onset of depression must be considered. It is also unrealistic in this area of research to consider the predictive role of self-esteem in depression without taking into consideration other psychosocial factors that are causally important (Brown et al., 1993).

4.4 The Effects of Individual Variables on Depression

In addition to the theoretical considerations and psychosocial aspects of depression that have been presented, a brief discussion of specific individual variables and their influence upon depressive symptoms must be considered.

4.4.1 Age

Traditionally, the risk of depression has been thought to increase with age. However, results of recent research have demonstrated considerably higher prevalence rates in younger than in older people. This suggests that for successive birth cohorts during this century the prevalence of depression has been increasing and the age of onset of first episodes for major depression has been decreasing (Wittchen, Knauper & Kessler, 1994). These authors state that high estimates of both childhood and adolescent depression have been reported and that there is now a significantly greater prevalence rate for these cohort groups than there was prior to the second world war. The National Institute of Mental Health in the USA have also concluded that mood disorders are less common in older adults than in younger adults (Davison & Neale, 1994). In addition, the symptoms of depression in the elderly compared to other age groups appears to be different. General physical decline, greater motor retardation and somatic complaints were more common in the depressed elderly. Whereas feelings of guilt, hostility and suicidal ideation were found less often in

elderly compared to younger depressed adults (Davison & Neale, 1994).

Depression as a common emotional problem and an inevitable feature of old age seems to be an outdated perception. Several researchers have challenged the belief that experiences of depression are a natural feature of the ageing process Davison & Neale, 1994; Stokes, 1992; Wittchen et al., 1994). Reports of low prevalence rates for depression among the elderly have, however, been criticised (Wittchen et al., 1994). A number of confounding factors have been reported that potentially support the seriousness of the sorrow and despair associated with later life. Decreased and response-biased memory, institutionalization, the overlap of physical and depressive symptoms, and the confusion of dementia with depression may create specific limitations in the assessment of psychopathology in older individuals (Wittchen et al., 1994). The first experimental study of this thesis presented in chapter six considers the issue of ageing depressive symptoms and self-esteem.

4.4.2 Gender

Depression is often associated with women, as they are twice as likely as men to experience depression. Research involving both patients with depressive disorders and community based individuals with symptoms of depression consistently yields a 2:1 female:male ratio (Davison & Neale, 1994). Although

it could be the case that depression in men is not as frequently recognized, reported or treated. Studies of depression have more often focused upon women, but research with men has indicated that current aetiological ideas are broadly applicable to them, despite their apparent lower prevalence of depression (Brown, 1989).

Gender differences in depressive affect are frequently discussed in the literature and may follow from more general developmental considerations regarding the differential socialization of the sexes (Block et al., 1991; Davison & Neale, 1994). In contrast to the general socialization process for girls, achievement related behaviours such as exploration, curiosity, independence and competition are actively and positively encouraged for boys. Because boys are taught to use assertive and aggressive behaviours to achieve important goals, they develop a premise about the self that anticipates instrumental competence and mastery. Girls on the other hand are taught to be relatively passive and have had reduced exposure to diverse situations. A sense of personal enablement or initiative are not attributes of the self-perceptions of girls and they are, therefore, less likely to develop a sense of resourcefulness on which later instrumental competence builds. More females than males become depressed because their social roles do not encourage competence and because their upbringing trains girls to be helpless. Furthermore, females are more likely to attribute success to external

and unstable factors, and failure to global, internal and stables attributes (Block et al., 1991; Davison & Neale, 1994).

Variations in the way females and males cope with stress has also been proposed to account for the gender differences in depression. Nolen-Hoeksema (1991) argues that males generally cope by engaging in activities that distract them from their mood, such as physical activity or watching television. Women, however, tend to ruminate about their situation and blame themselves for their depressed state. This ruminative reaction amplifies negative mood and depressive experiences, moreover, it interferes with attempts at problem solving, and increases interpersonal dependency (Nolen-Hoeksema, 1991). As a result of their passive coping and ruminative style, women tend to experience longer periods of depressed mood. The difference between genders on symptoms of depression is a research question in each of the three studies that follow, while coping is further considered in chapter five and in studies two and three.

4.4.3 Physical Health

Depressive symptoms are the most common psychological disturbance associated with medical illnesses (DeVellis, 1993). Stokes (1992) reports that over 40 percent of elderly individuals with depression have moderate to severe physical

disabilities, compared to less than 16 percent of non-depressed individuals. Illnesses associated with chronic pain and life threatening consequences are linked to an increased risk for depressive symptoms and depressive disorder in the general population (Magni, Moreschi, Rigatti-Luchini & Merskey, 1994). Symptoms of depression clearly due to a physical condition do not satisfy the diagnostic criteria for clinical depression (DeVellis, 1993). The relationship between chronic pain and depression remains, however, unsettled.

Magni et al. (1994) have suggested that two main hypotheses are associated with chronic pain and depression. The first depends primarily on the view that experiences of pain are produced by depressive feelings. Although the mechanisms remain unknown, it is thought that depressive experiences significantly reduce pain thresholds. The second hypothesis, namely that chronic pain causes depression, has more empirical support largely because the questionable physiological role for chronic pain and the limitations that it imposes on an individuals's life, together with the disruptions it creates in interpersonal relationships and the feelings of demoralization and helplessness. The relationship between depression and the painful aspects of rheumatoid arthritis is further discussed in chapter five.

4.5 Measurement of Depressive Symptoms

Clinical disorders and the symptoms of depression can be assessed through clinician based diagnostic interviews and rating scales, as well as self-report questionnaires. Structured and semi-structured diagnostic interviews and their associated rating scales have been developed to correspond to the major classification systems (Diagnostic and Statistical Manual of Mental Disorders; International Classification of Diseases). These interviews have standardised criteria for the diagnosis of depressive disorders and other types of psychiatric illness (DeVellis, 1993). The Present State Examination (PSE), the Schedule of Affective Disorders and Schizophrenia (SADS), the Standardised Psychiatric Interview (SPI), and the Structured Clinical Interview (SCID) are four frequently used diagnostic interviews administered by trained clinicians for identifying cases of major depression and dysthymia. The Diagnostic Interview Schedule (DIS) is a highly structured interview similar to the PSE, SADS, SPI, and the SCID with the advantage that it can be administered by trained lay interviewers (DeVellis, 1993). All five of these interview methods are associated with high sensitivity (ability to identify individuals with the disorder) and high specificity (ability to identify individuals without the disorder; Zimmerman & Coryell, 1994).

Depressive symptom self-report scales contain numerous items that represent common symptoms of depression, but they are not intended as diagnostic instruments and are not adequate for identifying cases of depressive disorders (DeVellis, 1993; Zimmerman & Coryell, 1994). In reviews of previous studies, both of these researchers have reported a high degree of discordance between enumeration by self-report scales classification of "caseness" depression in community samples and the application of operationalized diagnostic criteria for cases of major depressive disorder. Self-report scales of depressive symptoms are concerned with frequency and/or severity of depressive symptomatology and may not refer to cases as clinically depressed (DeVellis, 1993).

Self-report scales of depressive symptoms are widely available, inexpensive and quick to use, and are valuable for assessing the relationship with other parameters, monitoring symptoms over time, or to evaluate the effectiveness of interventions and treatments. These scales have respondents indicate the extent to which they have experienced each symptom over a specified period of time (the previous week, or the previous 30 days). They are summated rating scales which reflect the overall severity of depressive symptoms on a continuum from absent to severe (DeVellis, 1993). The Beck Depression Inventory (BDI; Beck, 1967), Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977), and the Geriatric Depression Scale (GDS; Yesavage, Brink, Rose, Lum,

Huang, Adey & Leirer, 1983) are examples of self-report measures of depressive symptoms.

The BDI is a widely used 21 item scale with two subscales: (1) a psychological subscale, and (2) a somatic subscale. Respondents endorse one of four possible options for each item and total scores for each subscale, and the entire 21 item BDI are computed. The BDI has good reliability and validity, but due to its sensitivity to somatic complaints and its multiple response format, a reduced specificity level can occur with older adults suffering from medical illness (Olin, Schneider, Eaton, Zemansky & Pollock, 1992).

The GDS is a popular self-report measure of depression used in elderly research because of it contains no somatic items, and its simple true/false response format is easy to complete (Olin et al., 1992). The 30 item GDS is a reliable measure capable of distinguishing between different degrees of depression. It specifically refers to experiences over the time period of the past 30 days (Yesavage,et al., 1983).

The CES-D has been shown to assess elevated depressive symptoms and is useful for predicting future depressive episodes (Wallace & O'Hara, 1992). The CES-D was designed as a brief, easily completed measurement instrument

of depression that could be used in community surveys. This original 20 items of the scale were selected from existing depression measures including the Beck Depression Inventory (BDI), the Zung Depression Scale, and the depression scale of the Minnesota Multiphasic Personality Inventory (Zimmerman & Coryell, 1994). It specifically referred to experiences over the time period of the past seven days. This self-report measure includes four subscales: (1) dysphoric mood, (2) positive mood, (3) somatic, and (4) interpersonal. Although the CES-D includes somatic questions and scores on the test increase as physical disability increase, Wallace and O'Hara (1992) state that this does not threaten the validity of the scale. There are, however, other authors who have demonstrated the potential confound between the somatic questions and depressive symptoms with this measurement instrument (Devins, Edworthy, Gutherie & Martin, 1992; Peck, 1989; Pincus, 1991). This issue and specific research findings based upon self-report measures of depressive symptoms is discussed further in chapter five.

For the purpose of the research contained within this thesis, the GDS and the CES-D self-report scales of depressive symptoms are employed. The specific procedures and psychometric properties of the GDS and the CES-D are presented in chapters six and seven, respectively.

CHAPTER FIVE

PSYCHOLOGICAL ASPECTS OF RHEUMATOID ARTHRITIS

The practise of rheumatology depends upon clinical and laboratory parameters as well as patient reports for the classification, monitoring and treatment of RA (Shipley & Newman, 1993). These general methods of assessment and diagnosis reflect the physical condition of the patient, but often fail to reflect the World Health Organization's definition of health: a state of physical, psychological, and social well-being and not merely the absence of disease (Sheridan & Radmacher, 1992). A disparity, however, has been reported to exist between objective measures (blood tests and x-rays) and patients' own views of the disease process, which can be magnified by poor and ineffective doctor-patient communications (Daltroy, 1993). This disparity poses a problem for the traditional disease model of medical management, where the focus is on the physical disease and employment of definitive treatments (Shipley & Newman, 1993). Chronic, painful inflammatory disorders like RA with its unpredictable disease course are less than adequately managed by the biomedical model. To more accurately understand the RA disease process in the absence of a definitive aetiology and successful treatment, the medical and allied professions must focus not only upon the physical disease but also upon the psychological, social and adaptive demands of the illness; thus incorporating a

biopsychosocial framework into the practice of rheumatology (Pritchard, 1989).

When approached with care, knowledge and understanding, behaviours associated with adaptation to the illness can be distinguished from aspects of the physical disease (Shipley & Newman, 1993). Skills in the assessment and management of psychological and social problems associated with RA can be taught to those who suffer from the disease and also to those working in the field. Creating a greater understanding of the impact of the distressful aspects of RA - beyond only clinical and laboratory parameters of the illness - would have an influence upon the psychological and social well-being of those with the disease (Shipley & Newman, 1993). When the focus of enquiry is enlarged from the physical aspects of the disease alone to the broader issues of quality of life and functional adaptation, the assessment and treatment of individuals with RA can more accurately reflect the World Health Organization's definition of health.

For many years psychologists have investigated the cause and course of arthritis. By the 1970s research had demonstrated that RA can have adverse effects on patients' behaviourial, emotional and social functioning (Anderson, Bradley, Young, McDaniel & Wise, 1985). In the past ten years there has been considerable interest in how RA patients interpret the illness process (Shipley &

Newman, 1993), and the interaction between RA and psychology has been extensively researched and reviewed (Anderson et al., 1985; Newman & Shipley, 1993; Young, 1992). It is the purpose of this chapter to present the aims and objectives of the present research (5.1) with reference to a discussion of specific research questions associated with the psychological aspects of RA. Following an introduction to the three studies of the thesis, the first research question (5.2), *Can personality traits predispose individuals to develop RA?* is discussed. Additional research questions within this chapter include (5.3) *Are symptoms of depression prevalent in RA?*; (5.4) *Does the clinical activity and physical disability of RA influence depressive symptoms?*; (5.5) *Do disease and depressive symptoms overlap in RA?*; (5.6) *Are symptoms of depression elevated by the pain of RA?*; (5.7) *Are coping strategies an important aspect of living with RA?*; (5.8) *Is learned helplessness a consequence of RA?*; (5.9) *Is social support an aspect of RA management?*; (5.10) *Is self-esteem affected by RA?*

5.1 Aims and Objectives of the Present Research

There is a considerable amount of controversy and inconsistency in the theoretical orientations and research findings reported in the psychological aspects of RA literature. It is, therefore, the general aim of the three experimental studies included in the present research to contribute to the growing body of knowledge in the area with a focus on the quantitative and

qualitative measurement of self-esteem, and depressive symptoms in individuals who suffer from this rheumatic disease.

Although personality factors associated with the onset of RA have been discredited, (Anderson et al., 1985; Young, 1992), only relatively few studies (Affleck, Tennen, Urrows & Higgins, 1992) have investigated the personality variables that may account for psychological adjustment (including the relationship between depressive symptoms, pain and coping strategies) following diagnosis with this potentially chronic autoimmune disorder. There is a theoretical and experimental progression to the three studies presented in this thesis, beginning with two cross-sectional studies testing group differences in self-esteem and depressive symptoms and thirdly a longitudinal study observing the contributions of demographic, clinical diseases measures, cognitive (coping and helplessness) and self-esteem variables on subsequent reports of depressive symptoms in RA. This progression is an attempt to develop a consistent theoretical orientation which goes beyond the methodological problems of the early research into personality issues and RA addressed in section 5.2. The present research enjoys the following advantages over traditional personality research in RA: the use of reliable measurement instruments, the inclusion of demographic (age, gender) and disease (disability, duration, ESR, medication, and pain) variables, the use of more homogeneous RA outpatient groups, a focus

upon adaptive and maladaptive factors, the use of appropriate control groups, and finally the use of a longitudinal design to help reduce the emphasis upon retrospective data.

The first experiment is a pilot study to test the reliability of the Southampton Self-Esteem and Sources of Self-Esteem Scale (SSESS) and the prevalence of depressive symptoms, as measured by the Geriatric Depression Scale (GDS) in an aging RA sample. The cross-sectional relationships between quantitative and qualitative measures of self-esteem, and depressive symptoms in an aging group of RA outpatients will be compared to a non-RA "healthy" community sample. Although self-esteem has previously been measured in RA studies, the use of quantitative and qualitative measures of self-esteem have not previously been employed in a study of depressive symptoms in a sample of individuals with RA over the age of 65 years.

The second experiment is a cross-sectional study of two community samples: (i) a group of amyloidosis patients as a potentially fatal consequence of a rheumatiod arthritis, and (ii) a group of RA-only patients. This study introduces the measurement of pain, coping with pain, functional ability as well as self-esteem and depressive symptoms in the comparison of these two groups. The unique contribution of this study is that there are to-date no published research

findings in the literature on the psychological aspects of suffering from amyloidosis.

The third experiment is a longitudinal study of the interrelationships between demographic, ESR as an objective measure of disease severity, functional ability, pain, helplessness, pain-coping strategies, quantitative and qualitative measures of self-esteem and depressive symptoms in RA. A longitudinal design is used here for determining the stability over time of the various parameters being measured in an attempt to assess the clinical utility of self-esteem reports in the psychological adjustment to RA. Longitudinal studies within the context of personality factors associated with RA are also important for examining the predictive validity and causal influences of self-esteem on depressive symptoms, pain, and functional ability in this rheumatic disease.

5.2 Can Personality Traits Predispose Individuals to Develop RA?

From the early years of this century until the 1960s a wealth of research had been produced which described various aspects of personality thought to be directly related to those who suffer from RA. Through this research it was established that an *arthritic personality*, present prior to any disease symptoms, could predispose certain individuals to the occurrence of RA (Anderson et al.,

1985). The term *arthritic personality* refers to habitual responses and coping strategies that are stable over time and that arise from genetic factors and early environmental experiences. Anderson et al. described individuals with an *arthritic personality*, who in anticipation of RA diagnosis, were depressed, dependent, perfectionistic, unable to express feelings of anger, demonstrating greater neurotic tendencies, and with an extreme interest in physical activity and sports.

Many of the studies that reported results in favour of the arthritic personality have since been seriously criticised for methodological errors. There was little, if any, consistency associated with the various characteristics which composed the arthritic personality. Creed (1990) points out that many of these early studies (some of which employed the Minnesota Multiphasic Personality Inventory; MMPI) were cross-sectional in design. Longitudinal studies demonstrated that the personalities of those with the early symptoms of RA were in fact no different from those of the general population. The full range of personalities are represented by those who suffer from RA (Creed, 1990).

Although the exact cause of RA remains unknown, research methodology has improved since these early studies proposed that personality factors could predispose certain individuals to RA. It is now widely believed that the

pathology of RA has its origins in the inflammatory responses of the immune system. Anderson et al. (1985) discussed six problematic areas of the arthritic personality research. The first limitation of this area of inquiry was that most of the psychological tests were devised by individual investigators and were not used by other researchers. The variety of theoretical orientations and assessment instruments used also reflected the inconsistency of findings. The second problem with the arthritic personality literature was that research failed to provide information about participant demographics (age, gender, education, marital status) and also disease parameters (disease duration, functional disability, pain, and type of medication used). Thirdly, the arthritic personality research was oblivious to the fact that those with RA form a very heterogeneous population. Although the diagnosis of RA (based upon the ARA 1987 classification) no longer separates those with RA into either classic, definite or probable RA, psychological investigations into RA must be sensitive to the diversity of the RA population, which includes sensitivity to various complications and consequences of the disease. Also, factors that may differentiate subgroups including age, disease duration, type of medication, and life threatening complications of RA must be taken into consideration. Fourthly, the arthritic personality studies focused primarily upon negative or maladaptive personality factors, with little or no attention to positive or adaptive characteristics. The fifth problem with this area of research was the lack of

appropriate control groups for comparison with RA patient groups. When control groups are not employed it is misleading to suggest that a personality trait is specific to the RA population. Although it is not clear what group represents an appropriate control for RA, the use of either other chronic medical conditions or non-RA "healthy" groups could be employed depending upon the nature of the research. The sixth and final problem of the arthritic personality hypothesis was the retrospective nature of the research. Attempting to determine which personality factors predispose individuals to RA following onset of the disease is not an adequate test of the hypothesis. Although the concept of the arthritic personality has been discredited and research has moved on, personality factors must play a role in the psychological adjustment to rheumatoid arthritis.

5.3 Are Symptoms of Depression Prevalent in RA?

Depressive symptoms are the most common psychological disturbance associated with medical illnesses (DeVellis, 1993). Depressive disorder and depressive symptoms are more common in persons with RA compared to those who do not suffer from this disorder. Within RA, the presence of depressive symptoms can seriously increase the disability associated with the chronic, painful and unpredictable course of the disease. Although the onset of RA symptoms and

eventual diagnosis of the disease can cause emotional distress, depressed mood is clearly not a direct result of the disease alone (Newman, Fitzpatrick, Lamb and Shipley, 1989).

In a review of the psychological disorders associated with RA, Creed (1990) referred to anxiety and depression as abnormalities in an individuals current mental state. Since the symptoms of anxiety neurosis and depressive illness overlap, Creed (1990) employed the term "depression" throughout the review. The prevalence of depression in RA has previously been quoted as between 22% to 80% of those who suffer from the disease (Rimon, 1978). Although recent studies, which are discussed in this section, have reported a somewhat narrower prevalence range of depression in RA which reflects improved methodology (Creed, 1990).

Studies that have used self-report questionnaires generally present a wider prevalence range for depressive symptomatology in RA, with results that differ between inpatients and outpatients. Creed (1990) discussed the results of several studies. In one study 46% of 50 RA inpatients satisfied the Beck Depression Inventory (BDI) criterion for depressive symptomatology at admission, while at discharge 23% scored above the BDI cut-off score for depressive symptoms (Zaphiropoulos & Burry, 1974). In another study, 53.5% of 129 RA inpatients

met the General Health Questionnaire (GHQ) criterion for depressive symptomatology at discharge (Bishop, 1987). Two further studies found that 32% of RA outpatients met the GHQ criteria for depressive symptomatology, while 28% of the same RA outpatient sample satisfied the Hospital Anxiety and Depression Scale (HADS) criteria (Chandarana, 1987). Blalock, DeVellis, Brown and Wallston (1989) reported results from three studies using the Centre for Epidemiological Studies Depression scale (CES-D) where between 34% to 46% of RA participants were above the cut-off score, indicating the presence of depressive symptomatology.

Self-report questionnaires used in research like the BDI, CES-D, GHQ and HADS can estimate the frequency or severity of depressive symptoms, but the prevalence of depression in RA changes when standardized interviews and clinical diagnosis are used (Creed, 1990). Studies that have used operationalized criteria of depression for research in patients with chronic, painful illnesses have reported lower rates of depression (Frank, Beck, Parker, Kashani, Elliott, Haut, Smith, Atwood, Brownlee-Duffeck & Kay, 1988). A 1984 study by Rimon and Laakso reported that 27% of 74 RA outpatients suffered from clinical depression based upon unstructured psychiatric interviews. A 1988 study by Murphy and Creed reported that 21% of 80 RA inpatients and outpatients were clinically depressed based upon the Psychiatric Assessment Schedule (PAS).

Frank et al. (1988) reported that with the Diagnostic Interview Schedule (DIS), 41% of 137 RA outpatients met the criteria for dysthymic disorder and an additional 17% met criteria for major depressive disorder. Because the symptoms of dysthymic disorder overlap with those of RA, Frank et al. suggested that the prevalence of depression in RA was more accurately reflected by the 17% major depressive disorder result. Frank et al. noted that the overall prevalence of depression in RA from their research was similar to the results reported by Rimon and Laakso (1984), although the latter study did not differentiate between dysthymic disorder and major depressive disorder.

Frank et al. (1988) conclude that although there are inconsistencies in the prevalence rates of depressive disorders and depressive symptomatology in RA, applying clinical criteria for diagnosis demonstrates that while depressive symptoms are a common feature of RA, true depressive disorders are not. Creed (1990) concludes that 20% is an accurate rate of the prevalence of depressive symptomatology in RA, but findings from previous research have estimated the prevalence of depression in RA to be as high as 80 percent (Rimon, 1978). Moreover, Creed (1990) concurs with Newman et al., (1989) that anxiety and depression as abnormalities of a person's current mental state are not directly related to the disabling disease process of RA.

5.4 Does the Clinical Activity and Physical Disability of RA Influence Depressive Symptoms?

The relative contributions of disease, disability and psychosocial variables on depressed mood in RA was researched in a multivariate manner by Newman et al. (1989). It has already been reported that this study concluded that depressed mood was not a direct and simple result of the disease process alone. Many previous studies had not addressed the extent to which increased depressed mood could reflect aspects of the disease such as disease duration, pain, stiffness, and functional loss imposed by RA. The Newman et al. (1989) study involved 158 RA outpatients (70% were female), with a mean age of 55 years. They used the Beck Depression Inventory (BDI) to measure depressed mood, the Functional Limitation Profile (FLP) to measure physical disability and behaviourial effects of the disease. Clinical variables included erythrocyte sedimentation rate (ESR), extent of joint erosion and the ARA functional status as a clinical measure of disease activity. This research also measured various demographic variables, pain, disease duration, and extent of social contacts and social isolation. Newman and colleagues reported that the final equation of a hierarchical regression analysis accounted for 44% of the variance of depressed mood. Gender of participants accounted for 7% of the variance of depressed mood, with women reporting significantly higher levels of depression than men, which as Newman et al. (1989) describe as a result consistent with other studies.

Disease duration accounted for 3% of the variance of depressed mood. The longer the disease duration the lower the score for depressed mood (Newman et al., 1989). Social contacts and degree of social isolation accounted for an additional 4% of the variance of depressed mood, with those RA patients who reported social isolation having increased depressed mood. Physical disability and behaviourial effects of the disease accounted for 26% of the variance of depressed mood. The authors of this study reported that clinical measures of current disease activity failed to add significantly to the regression equation. The findings of this research by Newman et al. (1989) suggest that comprehensive measures of RA disability and other behaviourial effects of the disease are more powerful predictors of depressed mood than are clinical measures of the RA disease process.

Hawley and Wolfe (1988) reported that anxiety and depression in RA are related to the underlying processes of the disease. This is, however, somewhat contrary to the more recent conclusions of Creed (1990) and Newman et al. (1989). Hawley and Wolfe (1988) investigated the psychological and clinical disease factors of 400 RA outpatients (74% female), mean age of 55 years, with self-report measurement instruments at six month intervals over a three through four year period. They hypothesized that if the effects of RA as a progressive disease worked unopposed on the psyche, then an RA group followed over time

would demonstrate an increased number of depressive symptoms. They also proposed that higher levels of depression would deteriorate clinical parameters of the disease (Hawley & Wolfe, 1988). Depression and anxiety were measured by the Arthritis Impact Management Scale of Depression (AIMS-D), while clinical measure of disease severity were the number of joints affected by the disease, pain as measured with a visual analogue scale (VAS), erythrocyte sedimentation rate (ESR) and grip strength. The Health Assessment Questionnaire (HAQ) was employed as an index of functional disability. Firstly, Hawley and Wolfe found for the cohort in general, there was no significant change in anxiety and depression over time. Secondly, they reported that changes in functional disability and number of joints affected by the disease (the latter was a clinical measures of the RA process) significantly predicted depression scores. Thirdly, the authors reported that depression was an explanatory variable for pain and functional disability.

Although Hawley and Wolfe failed to find any associations between clinical variables and improvement in psychological status, they did conclude that 25% of the variance of initial depression and anxiety scores was explained by clinical and demographic variables. This reflects their partial disagreement with Creed (1990) and Newman et al. (1989) who downplay the direct role of clinical variables in the psychological status of persons with RA.

Individuals affected by RA experience physical and psychological stress as they try to adapt to the demands of the illness. Devins, Edworthy, Guthrie and Martin (1992) proposed a model where the depressive symptoms associated with RA were hypothesized to derive from illness intrusiveness. As defined by Devins et al. illness intrusiveness is the development of disabilities within specific functional domains which contribute to more global lifestyle disruptions, therefore interfering with continued involvements with activities and personal interests across many, if not all, domains of an individual's lifestyle. Devins et al. suggested that the intrusive nature of RA can be associated with five of the following domains of life: (1) health and diet, (2) work and finance, (3) marital and family relations, (4) recreation and social relations, and (5) "other" domains such as self-improvement, community and religious involvements.

The relevance of illness intrusiveness to the psychosocial impact of RA was tested by Devins et al. in a cross-sectional study of 110 RA outpatients (78% female), with a mean age of 53 years. This research measured the severity of depressive symptoms from the previous seven days with the Centre for Epidemiological Depression scale (CES-D), assessed illness intrusiveness via the Intrusiveness Ratings Scale, measured physical disability with the Health Assessment Questionnaire (HAQ), and employed self-report questions to determine demographic characteristics and duration of disease. An analysis of

partial variance was used to investigate the relations among illness intrusiveness, age, and depressive symptoms, with physical disability as a covariate. The reported results of this study demonstrated that after controlling for physical disability, increased levels of illness intrusiveness were significantly associated with increased levels of depressive symptoms. These results were qualified by a significant illness intrusiveness by age interaction in relation to depressive symptoms, relative to two of the original five life domains (1) health and diet and (5) "other" domains. Although illness intrusiveness was significantly related to depressive symptoms across all ages, the authors suggested that the impact of RA on the health and diet, as well as "other" life style domains was greater for younger RA patients (25 years of age) and less among comparatively older RA patients (75 years of age). Devins et al. concluded that illness induced lifestyle disruptions which create problems in valued activities and personal interests - illness intrusiveness - is an important determinant of depressive symptoms in RA.

5.5 Do Disease and Depressive Symptoms Overlap in RA?

The use of self-report measures of depressive symptoms severity that have been developed from studies with the general population create problems when used for research with people suffering from a medical illness, such as RA (DeVellis, 1993). Studies that have employed the Beck Depression Inventory (BDI) and

the Centre for Epidemiological Depression Scale (CES-D) have demonstrated that some questions reflect the presence and severity of the RA disease process, thus confounding the presence and severity of depressive symptoms (Callahan, Kaplan & Pinus, 1991; Devins et al., 1992; Peck, 1989). Enumeration of the prevalence and severity of depressive symptoms in RA may be inflated when confounding questions are included. Peck (1989) asked a group of 15 Rheumatologists to indicate which of the 21 BDI items would be due to the influence of RA disease activity. Over 80% of the rheumatologists questioned reported that seven of the 21 BDI items were manifestations of RA: (1) pessimism about the future, (2) concerns about appearance, (3) effort required to do things, (4) difficulty sleeping, (5) sense of tiredness, (6) weight loss, and (7) concerns/worries about health. The inclusion of items with somatic content can, concludes Peck (1989), lead to an overestimation of the depression and RA association.

The validity of the CES-D for use in RA research has been challenged by Callahan et al. (1991). Although Devins et al. (1992) reported research findings that the CES-D was free from contamination by the overlap of depressive and disease symptoms in other illnesses, Callahan et al. stated that four CES-D items inflated estimates of depressive symptoms in RA. The four CES-D items included: poor appetite; everything was an effort to do; restless sleep; and, could

not get going (CES-D items 2, 7, 11, 20). In order to avoid the problem of the overlap of depressive/disease symptoms in RA, Devins et al. calculated three variants of the CES-D. One was the sum of all 20 CES-D items (to allow comparison with other studies also using the original summated rating scale). The second was an "RA-corrected " CES-D (sum of only 16 items not overlapping with RA), while the third was an "RA-related" CES-D including only items 2, 7, 11, and 20 which were thought to overlap with RA.

DeVellis (1993) agrees with Devins et al. (1992) in removing the somatic related items from self report measures and also suggests the possibility of increasing the criteria or cut-off point for the labelling of depressive symptomatology. Raising the cut-off point for the presence of depressive symptomatology is a less direct method of addressing the overlap of depressive/disease symptoms. However, if the somatic items from self-report measures are eliminated, DeVellis (1993) concludes that an underestimation of depressive symptoms associated with RA could result.

5.6 Are Depressive Symptoms Elevated by the Pain of RA?

Although pain is not one of the seven ARA (1987) diagnostic criteria of RA, it is arguably the most important subjective symptom of the disease (Parker, Frank & Beck, 1988). The painful aspects of RA deserve serious consideration due to the profound effect they have on the quality of life of those who suffer from the disease (Skevington, 1993). Pain is consistently reported in the literature as the most common and debilitating aspect of RA (Skevington, 1986). Both Young (1992) and Skevington (1993) report that the presence of pain, and its reduction are primary factors in RA patients' need of medical attention and treatment. In addition to relieving the disability and distress of RA, Skevington (1993) adds that the management of pain is one of the three main goals of the consultant rheumatologist.

Because pain is a subjective symptom of RA, previous research has concluded that it is difficult to assess and evaluate (Anderson, Bradley, Turner, Agudelo, Pisko, Salley & Fletcher, 1992; Young, 1992). Self-report measurement instruments such as the McGill Pain Questionnaire (MPQ), the pain subscale of the Arthritis Impact Measurement Scales (AIMS-P), and visual analogue scales (VAS) have been employed as quantitative measures of RA pain. There are, however, no validated objective measures of RA pain. Although Parker et al. (1988) failed to find a significant relationship between pain and medical

variables, including erythrocyte sedimentation rate (ESR), severity of physical disease in RA is related to pain. As Skevington (1993) states however, variations in pain perceptions reported by patients with RA largely reflect individual differences in pain thresholds. Given the same degree of RA pain, some individuals appear to deal adequately with their condition, whereas others fare poorly (Smith & Wallston, 1992).

As Young (1992) concludes, the pain of RA is clearly a complex phenomenon reflecting psychological issues, individual differences in thresholds, and not simply physiological variables. RA patient pain reports may have an influence on and be influenced by psychological and social factors (Anderson et al., 1992). Although Hawley and Wolfe (1988) reported a significant relationship between pain (VAS) and both anxiety and depression (AIMS subscales), there remains a considerable amount of controversy regarding the degree of association between pain and depressive symptoms in RA. As discussed in section 5.5, there is an overlap between disease and depressive symptoms in RA. The severity of depressive symptoms can be elevated by the chronic pain of inflamed and swollen joints. The possible causal relationship between pain and depression in RA has been an additional source of controversy. Brown (1990) presented three of the contradictory hypotheses that have been forwarded to account for the pain-depressive symptom relation. The first is that depressive symptoms occur

as a reaction to the chronic pain of RA. Depressive symptoms develop as a function of the reduced number of physical and social activities that an individual can enjoy due to pain sensations which increase with movement. The second hypothesis is that pain may be a manifestation of a depressive state. The presence of depressive symptoms with RA can evoke chronic pain by raising pain sensitivity and lowering pain threshold levels. The third hypothesis states that depressive symptoms and pain occur simultaneously because they share a common pathophysiology, such as a serotonin deficiency.

In order to go beyond the problems of the pain-depressive symptoms association, pain-coping strategies must be entered into the equation. When pain is chronic, individuals often develop behaviourial and cognitive strategies to cope and deal with their pain (Beckham, Keefe, Caldwell & Roodman, 1991). In RA, as with other chronic diseases, the variety of coping strategies that patients adopt and employ could be partially responsible for the range of psychological adjustments reported in the rheumatology clinic and in the literature (Brown, Nicassio & Wallston, 1989).

5.7 Are Coping Strategies an Important Aspect of Living with RA?

Beyond the direct effects of the clinical activity and disease process of RA, how individuals cope with the illness is an important determinant of adjustment (Smith & Wallston, 1992). Certain individuals with RA cope well with the painful aspects of RA, leading active productive lives. Others, however, cope poorly and experience high levels of psychological and physical disability (Keefe, Brown, Wallston & Caldwell, 1989). It was Lazarus and Folkman (1984) who defined coping as a psychological mechanism involving behaviours, cognitions and feelings for managing environmental and internal demands and conflicts (i.e., stressors) that strain both personal and social resources. Within chronic illnesses, the purpose of coping is to avoid, deal with or mitigate the presumably negative consequences of stressful situations. In the context of RA, coping refers to attempts to mediate the inflammation, pain and stiffness of the disease and its effects upon the individual (Newman & Revenson, 1993). Within this context, coping with RA refers to the attempts or efforts that individuals make to deal with and manage the stressful aspects of the illness. Newman and Revenson suggest that coping strategies as attempts or efforts to manage the distress of illness must be distinguished from the concept popular in everyday language where coping is an outcome which refers to success or failure in the face of stress.

Individuals with RA employ a wide variety of coping strategies for managing the distressful aspects of the disease. These include simple behaviours to directly deal with problems created by the illness, like the use of aids to help with household tasks or the avoidance of activities in the morning when joint stiffness is at its worst. These are examples of problem-focused coping strategies (Newman & Revenson, 1993). The management of feelings and cognitions that individuals have concerning their illness and its difficulties are regularly referred to as emotion-focused coping strategies. These include, distraction of one's focus away from the distress to reduce tension, minimizing problems by refusing to deal with them, and redefining personal situations in an attempt to seek new meaning and importance in life. Other coping strategies can both help solve problems and reduce the distress associated with RA. Information seeking is one example of a coping strategy that can help individuals maintain feelings of psychological control. This type of strategy also provides access to practical resources. The mobilization of one's social support network, which can provide emotional support (this is further discussed in section 5.9) is an additional strategy that is of practical and emotional importance. These examples hopefully illustrate that coping strategies are not solely associated with just practical aspects of the functional limitations imposed by RA, but are also associated with the cognitive and emotional impact of the disease on individuals (Newman & Revenson, 1993).

A considerable amount of research on coping with the painful aspects of RA has been published in the recent past (Beckham, Keefe, Caldwell & Roodman, 1991; Brown & Nicassio, 1987; Brown, Nicassio & Wallston, 1989; Keefe, Brown, Wallston & Caldwell, 1989; Lawson, Ressor, Keefe & Turner, 1990; Rosentiel & Keefe, 1983; Smith & Wallston, 1992; Young, 1992). The Coping Strategies Questionnaire (CSQ) was designed and validated by Rosentiel and Keefe (1983) as a self-report measure of cognitive coping activity. The CSQ assessed the following cognitive coping strategies used when individuals are in pain: diverting attention, reinterpreting pain sensations, ignoring pain sensations, hoping and praying, as well as catastrophizing. Brown and Wallston (1987) proposed that the utility of any particular form of coping is context specific. However, irrespective of their type (cognitive, emotion-focused, or problem focused), if habitually employed coping strategies used to manage chronic pain may be classified as adaptive or maladaptive.

Brown, Wallston and colleagues have consistently defined the adaptive coping strategies that chronic pain patients employ as active coping, and maladaptive coping strategies as passive coping (Brown & Nicassio, 1987; Brown, Nicassio & Wallston, 1989; Keefe, Brown, Wallston & Caldwell, 1989). They developed and validated the Vanderbilt Pain Management Inventory (VPMI) as a self-report measure of active and passive coping, which goes beyond the CSQ focus

on specific types of strategies. Active coping refers to the use of adaptive strategies in attempts to control pain or function in spite of pain. Examples of active coping include, distracting attention from pain, participation in leisure activities, and staying busy or active. In contrast, passive coping involves strategies that allow ones life to be adversely affected by pain or concede the control of ones pain to others (Brown & Nicassio, 1987; Brown, Nicassio & Wallston, 1989; Smith & Wallston, 1992). Examples of passive coping include: focusing on the location and intensity of the pain, restriction of social activities, taking medication for the sole purpose of immediate pain relief, and wishing that better pain medication would be prescribed.

The results of Brown, Nicassio and Wallston (1989) demonstrate the importance of coping strategies to psychological adjustment to RA over time. They studied 297 RA patients (75% female) with a mean age of 51 years, self-reports of depressive symptoms (with the CES-D), pain (with AIMS pain subscale) and coping strategies (with the VPMI) prospectively, with wave one and wave two of data collection separated by a six month interval. The reported results were that passive coping was a significant positive predictor of subsequent depressive symptoms, while active coping was a significant negative predictor of subsequent depressive symptoms. The impact of coping strategies did, however, depend upon the reported levels of pain. An increase in depressive symptoms

was reported by patients who engaged in higher frequencies of passive coping when experiencing higher levels of pain, than those who less frequently engaged in such strategies.

Brown, Nicassio and Wallston (1989) conclude that the combination of frequent passive coping strategies and high pain may adversely affect psychological adjustment to RA over time. Young (1992) remarked that there is a growing consensus that passive, avoidant, emotion-focused coping strategies (wishfulfilling, fantasy, self-blame, emotional expressiveness, and catastrophization) are associated with poor adjustment, negative affect, lower self-esteem, and increased depression in RA. Moreover, active, problem-focused coping attempts (information seeking, cognitive restructuring, pain control, and rational thinking) were consistently associated with positive affect, better psychological adjustment, and decreased depression in those with RA.

5.8 Is Learned Helplessness a Consequence of RA?

Wallston and colleagues research has also addressed the concept of learned helplessness as a consequence of the pain and disability of RA. The reformulated learned helplessness model for humans (Garber & Seligman, 1980) appears to be relevant to the relationship between psychological variables and

adjustment to the stressful aspects of RA (Nicassio, Wallston, Callahan, Herbert & Pincus, 1985). The learned helplessness construct as presented by Garber and Seligman (1980) refers to performance deficits produced by past exposure to the noncontingent relation between behaviour and outcome. In the context of a chronic illness, an individual's previous experience with the noncontingency between behaviour and outcome may lead to the individual's failure to preform beneficial health related behaviours. The unpredictable disease process of RA may contribute to a considerable amount of subjective uncertainty and feelings of perceived helplessness.

In a study of 219 RA patients (60% female) with a mean age of 54 years, Nicassio et al. (1985) presented initial evidence of the validity of the Arthritis Helplessness Index (AHI). The AHI is a self-report instrument designed to measure RA patients' perceptions of loss of control. The results of this initial study suggested that helplessness is directly related to behaviourial, cognitive and emotional problems in certain RA patients. They concluded that higher perceived helplessness in RA patients was significantly related to increased self-reports of anxiety and depressive symptoms.

Using the AHI, Stein, Wallston, Nicassio and Castner (1988) also reported the importance of helplessness in adjustment to the uncontrollable and unpredictable

clinical course of RA. With 368 RA patients (75% female) with a mean age of 52 years, Stein et al. (1988) created a clinical classification schema, using ordinal level data, for helplessness in RA. They reported that RA patients who reported high levels of helplessness also reported significantly higher depressive symptoms (CES-D) and greater use of passive coping strategies than those RA patients in the normal range of helplessness. RA patients who reported low levels of helplessness showed a clear tendency to report better psychological adjustment. Brown, Nicassio and Wallston (1989) added to the Stein et al. results, when they concluded that the combination of frequent passive coping strategies and high pain levels can foster a sense of learned helplessness and therefore lead to affective changes in certain individuals with RA. In a more recent study, Smith, Christensen, Peck and Ward (1994) also demonstrated the importance of the learned helplessness construct in relation to RA. Their research with 72 RA patients (60% female) with a mean age of 62 years, reported that after controlling for initial depressive symptoms, perceived helplessness was significantly related to depressed mood over a four year follow-up period.

5.9 Is Social Support an Aspect of RA Management?

Individuals suffering from the pain and disability of RA also have disruptions in their social relations and social commitments. Having a network of relationships upon which an individual can depend and rely on for emotional support, information and practical assistance appears to be of benefit to those contending with the stressful aspects of RA (Affleck, Pfeiffer, Tennen & Fifield, 1988). Family and friends are core members of an individual's social support who both influence and are influenced by the psychological adaptation of persons with RA. As previously mentioned in section 5.7, one way in which social support can influence psychological adaptation to RA is through its effect on an individual's coping processes. Information or advice given by a family member or a friend can improve how an individual with RA appraises and deals with distress. Therefore, social support can help mitigate or resolve stressful circumstances (Manne & Zautra, 1989). The intrusive nature of RA can disrupt the important life domain of family and personal relationships (Devins et al., 1992). Negative responses and interactions with a member of an individuals social support can adversely influence their coping strategies and challenge the individual's adjustment (Manne & Zautra, 1989).

Brown, Wallston and Nicassio (1989) presented evidence for the hypothesis that social support resources have a beneficial effect on psychological adjustment

irrespective of an individuals level of perceived stress. With 387 RA patients (75% female) with a mean age of 51 years, Brown, Wallston and Nicassio reported a negative relationship between satisfaction of emotional support and severity of depressive symptoms (measured by the CES-D) even after controlling for demographic, disability and pain. These results suggest that a supportive social network can help RA patients become better adjusted to their illness, independent of the disease process.

The quantitative and qualitative results of social support and adjustment to RA reported by Affleck et al. (1988) are complementary to the findings of Brown, Wallston and Nicassio (1989). With 129 RA participants (70% female) with a mean age of 51 years, Affleck et al. measured psychosocial adjustment to RA with the Global Adjustment to Illness Scale (GAIS). Their results of a hierarchical regression model indicated that social support satisfaction predicted a significant increment of 3% of the variance of psychosocial adjustment scores, after accounting for participants' age, education, income, disease duration, disease activity and function disability. Although the amount of variance in psychosocial adjustment scores explained by social support satisfaction was small, the authors did demonstrated a potential stress-buffering role of social support. The social support-psychosocial adjustment relationship became stronger when RA patients reported increased functional disability. Affleck et

al. (1988) concluded that the availability of a satisfying network of supportive relationships appears to be more meaningful to the psychosocial adjustment of RA patients who experience greater functional disability in their everyday lives, than for those who are less disabled.

5.10 Is Self-Esteem Affected by RA?

As an element of the self-concept, self-esteem has received relatively little attention in the psychological aspects of RA research. Although briefly mentioned in the following investigations, self-esteem as an aspect of the psychological adjustment associated with RA has been the focus of only two investigations, published in three separate manuscripts in the past ten years. Earle, Perricone, Maultsby, Perricone, Turnes and Davis (1979) reported that RA patients expressed greater meaninglessness, less work satisfaction and lower self-esteem than healthy controls. In addition to experiencing emotional changes, pain and physical disability, individuals with RA have reported impairments in self-esteem (Anderson et al., 1985). Moreover, Nicassio et al. (1985) reported that increased levels of learned helplessness in RA patients was significantly correlated to lower self-esteem. In their research on social support, Affleck et al. (1988) reported that RA patients who reported higher levels of social support have been shown to exhibit more positive mood and higher self-esteem.

In an investigation of self-esteem and RA, Skevington, Blackwell and Britton (1987) forwarded several previously unanswered questions about the processes involved in the lowering of self-esteem in persons with RA. At what stage in the RA disease process is self-esteem lowered? Skevington et al. (1987) reported results from previous studies of lower back pain patients where low levels of self-esteem have been reported even after two years of treatment. Skevington et al. (1987) also asked: Do people experiencing the initial symptoms of RA (including pain) start treatment with low self-esteem?, and is this a factor in their decision to attend an out-patient clinic? Or is self-esteem lowered as a result of chronic pain and repeated hospital visits in search of pain relief? Investigations of self-esteem and RA are important for they may help resolve such questions which are important for health care providers in understanding the psychological adjustment of RA patients.

The study reported by Skevington et al. (1987) aimed to answer the main question: Do persons with the early symptoms of RA differ in self-esteem on their first visit to out-patient treatment than a matched, pain-free, "healthy" control group? Seventy-four RA patients (63% female) with a mean age of 46 years participated; all had RA symptoms for less than three years prior to this first consultation with a rheumatologist. The Carlson Adjective Checklist was used to compare the groups self-esteem. The results showed that patients with

the early symptoms of RA had significantly lower self-esteem than "healthy" controls, and that male RA patients scored higher than female RA patients on self-esteem, but this gender difference was not obtained in the control sample. Skevington et al. (1987) concluded that their results confirm that low self-esteem is a feature of individuals suffering from the early painful aspects of RA prior to their first attendance at an out-patients clinic. Self-esteem, therefore, may be lowered between the onset of pain and their first consultation with a rheumatologist. Although they did not investigate the self-esteem and depressive symptom relationship in RA, Skevington et al. (1987) did conclude that further study is necessary to help understand how the dynamics of self-esteem can influence and shape the behaviour of those who suffer from the illness.

Skevington (1993b) followed-up 44 early RA out-patients of this initial study (Skevington et al., 1987) with data collection of depression, pain coping beliefs and self-esteem at two additional times, both ten months to one year apart. The results of this longitudinal study suggest, firstly, that there is no evidence to support a hypothesis that low self-esteem and passive beliefs about pain control (lack of personal responsibility for pain, and emphasising doctors control of pain) are consequences of depressed mood in persons with the early symptoms of RA. Secondly, Skevington (1993b) argues that the two variables of low self-esteem and passive beliefs about pain are likely antecedents of depression in

early RA. At the second wave of data collection following 10-12 months of RA treatment, depressive symptoms were significantly predicted by (after controlling for wave one depression score) wave one self-report measures of low self-esteem and increased beliefs about doctor's powers to help with pain. After approximately two years of RA treatment, Skevington (1993b) reported that depression is predicted by prior beliefs that patients were not personally responsible for their pain, and to a lesser extent by low self-esteem. These results raise practical questions concerned with newly diagnosed RA patients disclosing personal insecurities to health professionals. Skevington (1993b) argues that the assessment of both self-esteem and beliefs about pain coping strategies can provide important information in the prevention of subsequent depression for individuals with the early symptom of RA.

In a more recent study, Krol, Sanderman, Suurmeijer, Doeglas, van Rijswijk and van Leeuwen (1994) investigated disease characteristics, self-esteem and psychological well-being in RA patients. In a cross sectional study of 292 RA patients (64% female) with a mean age of 54 years and a disease duration of either recent onset, one, two, three or four years, Krol et al. measured participants level of self-esteem with the Rosenberg Self-Esteem questionnaire (RSE). They also administered the General Health Questionnaire-28 (GHQ-28) as a measure of psychological well-being, which they considered to be one of

the components of quality of life. The following questions were tested in this research: (1) Is self-esteem and psychological well-being associated with participants disease duration?, and (2) Are the clinical disease parameters of erythrocyte sedimentation rate (ESR) and level of joint tenderness and pain (as measured by the Ritchie articular index) associated with self-esteem and psychological well-being?

In relation to the first of these two questions, Krol et al. (1994) reported that self-esteem and psychological well-being were not significantly associated with RA disease duration. The authors stated, however, that of the five RA onset cohorts, patients with two years disease duration scored better on the GHQ-28 measuring psychological well-being. Although the disease duration in this study included a short range of years (0 - 5 years), Krol et al. speculated that low self-esteem may become more of a profound problem to those who have suffered from the unpredictable aspects of RA over longer time periods.

Results from the second research question demonstrated that the level of joint tenderness was significantly related to both self-esteem and psychological well-being, while ESR was not (Krol et al., 1994). The relationship between this clinical parameter of RA joint tenderness and pain with psychological impairment is consistent with the findings reported in 1988 by Hawley and

Wolfe. Without disease duration or ESR in the equation, Krol et al. reported the results of a regression analysis where level of joint tenderness and pain accounted for 19% of the variance in psychological well-being, while 22% was explained by self-esteem. Krol et al. concluded, however, that only when longitudinal designs are used will it be possible to elaborate on the cause and effect of clinical measures of disease severity, psychological well-being and self-esteem in adaptation to RA.

CHAPTER SIX

SELF-ESTEEM AND DEPRESSIVE SYMPTOMS IN OLDER PERSONS WITH RHEUMATOID ARTHRITIS: A CROSS-SECTIONAL COMPARISON WITH A NON-RA CONTROL GROUP

6.1 Introduction

Progression through old age typically involves many changes in life circumstances. Retirement, loss of one's partner/spouse and friends, social difficulties, social isolation, as well as physical changes and health problems can lead to re-evaluation of self-concepts (Stuart-Hamilton, 1991), and are likely causes of sadness which may trigger experiences of depression (Murphy, 1989; Stokes, 1992). Depression is not, however, a natural aspect of the ageing process, but important symptoms of depression affect more than ten percent of older individuals in the community (Forsell, Jorm & Winblad, 1994; Stokes, 1992). Although the prevalence rate for clinical depression is higher in younger adults, studies of ageing and depression have produced the paradoxical findings that physical disorders and disability with aspects of daily living associated with the elderly increase the prevalence of depressive symptoms but not the prevalence of major depressive disorders (Forsell et al., 1994; Wittchen et al., 1994).

Rheumatoid arthritis (RA) prevalence rates increase with age, but there are relatively few studies that have focused solely upon the psychological aspects of RA in elderly individuals. The majority of studies reported in the literature review from chapter five involved cohorts with mean ages that ranged from 46 (Skevington et al., 1987) to 62 years (Smith et al., 1994), with most reporting mean ages of 51-56 years. The standard deviations (S.D.) reported for age of participants in all of the studies reviewed in chapter five was greater than 11.0 years, with the some studies reporting standard deviations for this demographic variable of over 13 years (Anderson et al., 1992; Brown 1990; Brown & Wallston 1989; Keefe et al., 1989). Only five studies discussed in chapter five presented participants' age range, and all of them involved large variability: Beckman et al. (1991) included RA participants who ranged in age from 29 to 83 years; Krol et al. (1994) included RA participants who ranged in age from 20 to 71 years; Manne & Zautra (1989) included RA participants who ranged in age from 25 to 76 years; and Peck et al. (1989) included RA participants ranging in age from 23 to 81 years.

The study reported by Devins et al. (1992) included a wide range of ages (24 to 78 years) with a mean age of 53 years (S.D. = 13.17) but this research, unlike the others previously mentioned, considered depressive symptoms experienced by persons with RA over the adult life span. One of the interesting findings

from this research was the interaction of age (RA participants were categorised into three different age groups: 25 years, 50 years, and 75 years of age) by illness intrusiveness (physical disabilities create global life style disruptions and interfere with continued involvements in valued activities and interests) with depressive symptoms. Devins et al. (1992) reported that although illness intrusiveness was significantly related to depressive symptoms and that the three age groups did not significantly differ on scores of depressive symptomatology, depressive symptoms increased among younger as compared to older RA patients, as intrusiveness increased. Participants in the 25 year old group reported significantly more lifestyle disruptions in the areas of health, diet and "other" domains (such as self-improvement and community involvements) compared to the 75 year old group participants, as depressive symptoms increased.

This interaction between age level and the intrusive nature of RA with depressive symptoms described by Devins et al., (1992) could in simple terms be accounted for by the confounding role of disease duration. Recall that Newman et al. (1989) reported that longer disease duration made a significant independent contribution to the reduction of depressed mood. Albeit, Krol et al. (1994) reported that psychological well-being, and levels of self-esteem were both unrelated to RA disease duration. These authors did, however, suggest that

when disease duration increases problems with self-esteem may become significantly profound. Devins et al. accounted for this differential effect of age and illness intrusiveness on depressive symptoms by suggesting that psychological disengagement from previously valued commitments, involvements and responsibilities is a normal aspect of the aging process. This disengagement from formerly valued activities and interests helps to mitigate the impact of losses imposed by RA in older adults, thus reducing the severity of depressive symptoms. Moreover, younger individuals who have not begun to disengage psychologically cannot therefore mitigate the intrusive nature of RA and as a result experience greater depressive symptoms (Devins et al., 1992).

In addition to the limited amount of research focusing on the psychological well-being of elderly individuals with RA, self-esteem has not been studied as a factor in the development of depressive symptoms experienced by this population. Claims for the importance of self-esteem in the process of adjustment to aging have been made since the early 1960s, when self-esteem was described as the linchpin of quality of life for older people (Schwartz, 1975). Although the relationship between depressive symptoms and self-esteem remains somewhat controversial, Coleman and colleagues (1993) argue that research focusing upon affective, behaviourial and cognitive aspects of self-evaluation can hopefully improve our understanding of the depressive

experiences of older adults.

Using the Southampton Self-Esteem and Sources of Self-Esteem scale (SSESS) as an implicitly derived measure of self-esteem, Coleman et al. (1993) reported that low self-esteem is significantly associated with depression, and that high levels of self-esteem were associated with psychological adjustment to the stressful aspects of ageing. In addition to the quantitative measurement of self-esteem derived with the SSESS, illustrative examples of sources of self-esteem can be generated which aid in the interpretation of the measure. Published research which has employed the SSESS has suggested that seven categories of sources can be used to help identify how older individuals maintain a robust sense of self-esteem (Coleman, 1984).

The seven sources of self-esteem categories include:

Family, reference to family relationships. Any reference explicit or implicit to family members related by blood or marriage.

Others, reference to other interpersonal relationships. This categories includes reference to other individuals which cannot be construed as being solely a reference to family members.

Health, reference to lack of infirmary. This includes references both to good physical health and to essential activities of daily living which, if individuals were not able to do themselves, would have to be performed by someone else.

Personal Interests, reference to enjoyable activities, hobbies and interests. Reference to all forms of activities and occupations, except for the essential activities of daily living included in a previous category.

Work, reference to a work role or a specific role in an organisation. In addition to paid employment, this category includes reference to voluntary work, activities or committees and task or roles fulfilled in particular organisations.

Inner Self, reference to inner characteristics. This includes reference to aspects of an individual's personality, and also to their values, principles and attitudes to life, such as philosophical and religious beliefs.

Personal Environment, reference to environmental and societal circumstances. This category includes reference to external circumstances in an individual's life, whether specific to the individual as in the physical environment in which they live, or of more general societal conditions.

Incorporating these qualitative sources of self-esteem expressed on the SSESS into analyses of depressive symptoms experienced by older adults has generated some interesting findings. *Personal interests, others*, and *inner-self* are sources of self-esteem that are consistently related to the maintenance of positive self-evaluations and psychological well-being (Coleman et al., 1993). Older adults who are actively engaged in hobbies, interests and leisure pursuits demonstrate higher, more resilient self-esteem than those who report fewer interests and activity levels. Losing the physical ability to successfully perform previously enjoyable activities can seriously affect self-evaluations. Although transferring the enjoyment and passion derived from a particular activity to a newly developing interest is not an easy task, the active promotion of new and diverse leisure activities for older adults is essential for maintenance of well-being and positive adaptation to the challenges of ageing (Coleman et al., 1993).

The importance of *others* suggests a wider more developed world of interpersonal interests and relationships. Self-esteem is reported to be higher among older adults with a close circle of friends, who can provide emotional support, information and practical assistance, therefore, reducing the risk of psychopathology. This refers to the stress-buffering hypothesis where there is a relationship between positive support and adjustment to stressful circumstances (Kessler et al., 1992). Although this hypothesis states that the perceived social

support from an intimate relationship with a spouse is more important than that from friends or relatives (Kessler et al., 1992), the absence of the adaptive value of *family* as a sources of self-esteem was reported by Coleman et al. (1993). The adaptive value of *inner-self* sources of self-esteem suggest that philosophical and religious principles are important building blocks of personal identity. Illustrative examples categorised as *inner-self* are themes which help preserve continuity in life. These themes appear to be more resilient than *family* sources of self-esteem which require others to play their part (Coleman, 1993).

The purpose of the research within this chapter is to add to the limited amount of knowledge associated with depressive symptoms in older individuals with rheumatoid arthritis by employing the SSESS to quantitatively and qualitatively assess self-esteem. This pilot study is a test of the reliability of the SSESS in RA, and an attempt to replicate the findings of Coleman and colleagues (Coleman, 1984, 1993; Coleman et al., 1993) who have studied depression and self-esteem in the general population of elderly adults. In an attempt to go beyond the problems encountered by traditional personality research in RA, the measurement instruments used within this study had known psychometric properties and were designed by other investigators. The following specific research questions were considered in this cross-sectional comparison of older adults with RA and a non-RA control group: (1) Is the SSESS a reliable

measure of self-esteem in older adults with RA? (2) Is self-esteem as measured by the SSESS associated with depressive symptoms?, and disease duration? (3) Are moderate/severe depressive symptoms prevalent in older adults with RA compared to a non-RA group? (4) Do the RA and non-RA participants have different levels of self-esteem? (5) Are the sources of self-esteem generated by the SSESS different for the two groups?

6.2 Method

6.2.1 Participants

One hundred individuals (36 males and 64 females) provided informed consent for participation in this study. The RA experimental group consisted of 50 participants (23 males and 27 females) all over the age of 65 years who had rheumatoid arthritis as diagnosed by a consultant rheumatologist for a minimum of two years and no other serious medical problems, including cardiovascular disease. As a criterion for inclusion in this study, participants had never been diagnosed with clinical depression, nor had they received treatment for depressive symptoms. Their mean age was 72 years (standard deviation = 4.26), with a range from 65 to 82 years. The average RA disease duration for these participants was 11.5 years (standard deviation = 5.78). Fifty two percent of the RA participants were married, 28% widowed, 12% single, and 8% divorced. One female refused the invitation to participate in the RA group of this study.

The non-RA control group consisted of 50 individuals (13 males and 37 females) over the 65 years of age, who reported no serious physical and mental health problems (including RA, cardiovascular disease, and clinical depression) and had never received treatment for depressive symptoms. Their mean age was 75.5 years (standard deviation = 6.25), with a range from 65 to 88 years. Forty eight percent of the non-RA control group were married, 36% widowed, 10% single, and 6% divorced. Five individuals (two males and three females) turned down the invitation to participate in the control group of this study.

6.2.2 Measurement Instruments

The rheumatoid arthritis out-patients involved in this research were provided with an information letter outlining the nature of the research and inviting them to participate and guaranteeing confidentiality (appendix C), in addition to a Greater Glasgow Health Board consent form (appendix D) used to document participation. The community based members of the control group were also provided with an introduction letter (appendix E), and a consent form (appendix D and F) documenting their participation in the study. The two measurement instruments employed in this study were: (1) the *Geriatric Depression Scale* (Yesavage et al., 1983), and (2) the *Southampton Self-Esteem and Sources of Self-Esteem Scale* (Coleman, 1984).

1. *Geriatric Depression Scale (GDS)*

The GDS is a 30 item true-false self-report questionnaire (appendix G) designed to assess depressive symptomatology of older adults. Somatic items which are features of other measures of depressive tendencies are not included in the GDS. The elimination of somatic items makes the GDS an effective instrument for detecting depressive tendencies from the past 30 days in those with a medical illness (Fulop, Reinhardt, Strain, Paris, Miller and Fillit, 1993).

Twenty of the items indicate depression when answered positively, while the other ten questions (1, 5, 7, 9, 15, 19, 21, 27, 29 and 30) do so when answered negatively. Responses indicative of depression were numerically coded as 0, while the more hopeful responses were coded as 1. Items were scored in the direction of depressive symptomatology if participants endorsed both responses (Schneider et al., 1992). The GDS is a summated rating scale where individual responses to the 30 item are added to generate a total score reflecting depressive symptomatology. The possible range of GDS scores is 0 to 30, with higher total scores thus representing greater depressive tendencies. Yesavage et al. (1983) and others (Fulop et al., 1993; Olin et al., 1992) have suggested that GDS total scores greater than 11 indicate the possibility of depression. To increase the sensitivity and specificity of the GDS as a screening device for depression, an additional cut-off score of 21 or above has been used to detect moderate/severe

depressive symptomatology (Fulop, 1993). The GDS is a reliable and valid measurement instrument with known psychometric properties. It has an internal consistency coefficient of .94, a split-half reliability of .94 (Yesavage et al., 1983), and has been significantly correlated ($\underline{r}$ = .91, $\underline{p}$ < .01) to the Beck Depression Inventory (Olin, 1992).

2. *Southampton Self-Esteem and Sources of Self-Esteem Scale (SSESS)*

The SSESS (appendix H) is a self-report measurement instrument designed to assess quantitative and qualitative aspects of self-esteem. The ten bipolar items of the SSESS are each scored on a three point scale, where participants make a positive, neutral or negative response. Five positive and five negative items are alternatively arranged on the SSESS to avoid response bias. Positive responses were numerically coded as 2, and negative responses as 0 for the positive items. Negative responses were coded as 2, and positive responses as 0 for negative items. Neutral responses for all ten items were numerically coded as 1.

The SSESS is a summated rating scale with a possible range of scores from 0 to 20 created by adding individual responses from the ten items. Higher scores on the SSESS represent high levels of self-esteem. For the purpose of this study three cut-off scores were used to categorise levels of self-esteem: low self-esteem was associated with 0 - 9 SSESS total scores; medium self-esteem was

associated with 10 - 18 SSESS total scores; and high self-esteem was associated with 19 - 20 SSESS total scores (Coleman, personal correspondence 1995). The medium self-esteem level used within this study were created by collapsing the medium-low and medium-high levels originally used by Coleman (1993).

Participants were encouraged to provide illustrative examples of sources of self-esteem following each positive response to the ten SSESS items. Illustrative examples from positive SSESS responses were numerically coded as nominal data, with 1 for each of the seven categories referenced, and 0 for no reference to features of each sources of self-esteem. Coleman and colleagues have reported that the SSESS is a reliable measure of self-esteem, with an internal consistency coefficient of .90 for the quantitative component and a 91% inter-rater reliability for the nominal measurement of the qualitative component of sources of self-esteem.

6.2.3 Procedure

Ethical approval for this pilot-study of the research project entitled *Coping, Depression and Pain in Rheumatoid Arthritis* was granted by the West Ethics Committee of the Greater Glasgow Health Board (appendix B). Participants within the RA group were randomly selected from the individuals attending rheumatoid arthritis out-patient clinics at two Glasgow hospitals (with the co-

operation of Dr. Hunter, Consultant Physician and Rheumatologist and Dr. Sturrock, Professor of Medicine at the University of Glasgow). Following scheduled appointments with the consulting rheumatologist, informed consent was provided by volunteers after they were given the letter of introduction inviting their participation. Once each individual had provided informed consent they were asked preliminary questions concerning RA disease duration, if they suffered other physical illness, and if they had previously been treated for mental health problems, including depression episodes.

Participants within the non-RA control group were randomly selected from two locations. Firstly, visitors to the Gartnavel General Hospital not seeking medical attention (as in-patients or out-patients) were invited to participate upon entrance to the facility. Secondly, individuals attending day centres organised by the Glasgow Old Peoples Welfare Association were invited to participate. Permission to conduct research for this study at the day centres was informally granted by Mr. Gourley and Mrs. Furie of the Glasgow Old Peoples Welfare Association. All potential participants at both locations were provided with a letter of introduction inviting them to partake in this research. Once each individual had verbally agreed to participate, they were asked preliminary questions concerning their physical health, and if they had previously been treated for depression. Upon satisfying the requirements for participation, they

signed the consent form.

Participants of the RA group and control group were given a two page questionnaire containing the GDS and the SSESS once they had signed the informed consent statement. They were asked to record their age in years, gender, and marital status on the questionnaire. All participants completed the self-report scales with the researcher present to help with problems of self-administration and to invite illustrative examples for positive statements on the SSESS. Once they had completed the two scales they were thanked for their co-operation and participation, and reminded that all information would be kept strictly confidential.

The principal researcher and an assistant (an Honours Psychology student) independently coded the illustrative examples provided by participants on the SSESS based upon Coleman's (1993) seven categories of self-esteem sources. Inter-rater reliability was based upon a consensus between the qualitative coding by the two independent raters for each participant's illustrative examples.

6.3 Results

6.3.1 Internal Consistency and Reliability of Measurement Instruments

The internal consistency of the two measurement instruments was calculated using Cronbach's coefficient alpha, while reliability was calculated using the Spearman-Brown split half reliability coefficient. The *Geriatric Depression Scale* (GDS) had a Cronbach alpha = .84, and a Spearman-Brown reliability coefficient = .86. The *Southampton Self-Esteem and Sources of Self-Esteem Scale* (SSESS) had a Cronbach alpha = .85, and a Spearman-Brown reliability coefficient = .90. A high degree of both internal consistency and reliability was therefore associated with the two measurement instruments. Both of these instruments have known psychometric properties consistent with those reported in this study.

A high degree of inter-rater reliability was established for each participant's illustrative examples of self-esteem sources generated by the SSESS. Only three non-RA control group participants, and six RA-only participants did not provide any illustrative examples of self-esteem sources. All other participants reported at least one source of self-esteem and a maximum of seven, with some simple repetition of illustrative examples. The two researchers categorising the qualitative sources of self-esteem agreed with the coding of 95 percent of the 91 participants' who provided examples. Five percent of illustrative examples

provided by participants for positive SSESS responses were considered invalid, while the majority were reliably catalogued within one or more of the seven possible categories. Illustrative examples for negative SSESS responses were also reported by participants, but these were not coded and therefore not employed in any analyses.

6.3.2 Pearson Correlation Coefficients

Pearson correlation coefficients were calculated to determine the relationships between the total scores from the two scales used, and also their relationships with demographic variables of age, sex and disease duration of RA participants. All 100 participants were included in these calculations, apart from those involving disease duration which only applied to the 50 RA participants. The highest correlation (r = -.77, p <.001) was a negative relationship between the SSESS and GDS scores. Lower self-esteem was, therefore, significantly associated with increased reports of depressive symptoms over the past 30 days. The disease duration of RA participants was positively correlated to scores on of the GDS, r = .48, p <.001. A negative relationship was found between disease duration and scores on the SSESS (r = -.50, p <.001). Thus, longer disease durations were significantly associated with increased reports of depressive symptoms, and lower self-esteem. No significant correlations were found involving the variables of age and gender.

6.3.3 Descriptive Statistics of Measurement Instruments

The 100 participants had the following descriptive statistics on the two measurement instruments: The GDS had a mean total score = 14.67, and a standard deviation = 4.24. The GDS scores ranged from 10 to 30, with a standard error of the mean = 0.485. The SSESS had a mean total score = 15.13, and a standard deviation = 4.85. The SSESS scores ranged from 2 to 20, with a standard error of the mean = 0.485. The RA group had a GDS mean total score = 16.24 with a standard deviation = 4.97, and a SSESS mean total score = 12.94 with a standard deviation = 4.86. The non-RA control group had a GDS mean total score = 13.10 with a standard deviation = 2.57, and a SSESS mean total score = 17.32 with a standard deviation = 3.76.

Table 6.1 presents the total number of participants from the RA and non-RA groups who provided illustrative examples for each of the seven categories of self-esteem sources.

Table 6.1

Number of participants in the RA group and the non-RA group who provided examples for the seven sources of self-esteem as generated by the SSESS

Source of Self-Esteem	RA Group	Non-RA
Personal Interests	26	47
Others	15	36
Inner-self	26	39
Health	13	39
Personal Environment	5	11
Family	44	39
Work	7	14

The following are specific illustrative examples from the SSESS reported by participant's and categorised within the seven sources of self-esteem. *Personal Interests*: "I learned computing before leaving work, and now I have one at home that I use daily" (68 year old married male with RA). *Others*: "I know Mrs. Simms who lives upstairs from me very well; we talk everyday and keep an eye on each other" (72 year old widowed female with RA). *Inner-self*: "Although I no longer sing in the choir, I still attend church every sunday" (77 year old married female). *Health*: "I'm still able to keep a clean house as I have always done, and I can get out for my daily messages without any serious complaints" (71 year old single female). *Personal Environment*: "I've lived in

the same house for nearly 40 years; this is where my family grew-up, I've got so many great memories" (70 year old married female with RA). *Family*: "My wife is a strong woman!, and our sons live close by so we see our grandchildren all the time" (68 year old married man with RA). *Work*: "I keep myself as busy as possible; I tend to a couple of wee gardens and I serve tea at the club three times a week" (70 year old single male).

6.3.4 Categorisation of Participants by Scores on the Measurement Instruments

Table 6.2 presents the number of participants from each group whose scores fell into the appropriate cut-off points for the two measurement instruments used.

Table 6.2

Number of participants above cut-off scores for depression (GDS scores above 11) and the number within three SSESS categories

Measurement Instrument	R.A. Group	non-RA Control
GDS		
Mild (11-20)	36	43
Moderate/Severe (>21)	10	1
SSESS		
Low (0-9)	13	4
Medium (10-18)	32	20
High (19-20)	5	26

A two by two Pearson chi-square test on the number of participant's from the two groups who scored above the cut-off values for mild and moderate/severe levels of depressive symptomatology as measured by the GDS yielded a significant result ($\underline{X}^2$ (1) = 7.99, $\underline{p} < .01$). More RA participants scored above the cut-off point for moderate/severe depressive symptomatology than non-RA control participants. Although more non-RA control group participant's were classified with mild depressive symptoms as shown in Table 6.2, a t-test between the two groups' mean total scores on the GDS for those classified with mild depressive symptoms revealed a significant difference, $\underline{t}$ (77) = -2.54, $\underline{p} <$ .01. Indicating that although fewer RA participants were mildly depressed, their mean total scores on the GDS (14.83, n = 36) were actually higher than the mean scores (13.32, n = 43) of the control group.

As displayed in Table 6.2, the distribution of scores on the SSESS shows that more RA participants were allocated into the low self-esteem category than controls, and that more members of the non-RA control group were categorised as having high self-esteem than were RA participants. A three by two Pearson chi-square test produced a significant result ($\underline{X}^2$ (2) = 21.74, $\underline{p} < .001$), demonstrating that the categorisation of participants into high, medium, and low levels of self-esteem was significantly different for the two groups. A t-test, however, revealed a significant difference ($\underline{t}$ (50) = 3.01, $\underline{p} < .005$) between

mean total SSESS scores for participants from the two groups who were classified with medium levels of self-esteem. Indicating that although more RA individual's reported medium levels of self-esteem scores as measured by the SSESS, their mean scores (14.78, n = 32) was significantly lower than the mean scores (16.60, n = 20) of non-RA medium self-esteem participants.

6.3.5 Discriminant Function Analysis of Participants by Group

A direct discriminant function analysis was performed using nine predictor variables of membership in two groups. The first group represented the participants with RA, while the second group represented participants from the non-RA control group. The nine predictors were: (1) total scores from the Geriatric Depression Scale (GDS), (3) total scores from the Southampton Self-Esteem and Sources of Self-esteem Scale (SSESS) and the seven sources of self-esteem as reported by participants on the SSESS, including (3) *personal interests*, (4) *others*, (5) *inner-self*, (6) *work*, (7) *personal environment*, (8) *family*, and (9) *health*. Age was not included as a predictor variable in this discriminate function analysis because the two groups' mean ages differed significantly, t (98) = 2.79, $p < .006$. The mean age of RA subjects was 72 years (S.D. = 4.26), while the mean age of the non-RA control groups was 75.5 years (S.D. = 7.25). Disease duration was not included as a predictor variable

because it pertained solely to the RA group. Gender was also not included as a predictor variable within this analysis because of the large number of female participants in the non-RA control group. In addition, preliminary t-tests demonstrated that female and male participants did not have significantly different scores on the GDS, or on the SSESS.

The discriminant function analysis yielded a statistically significant discriminant function that maximally separated the two groups; $\underline{X^2}$ (9) = 75.53, $\underline{p} < .001$. As indicated in Table 6.3, the correlations of the predictors with the discriminant function suggest that the following six predictors: *health*, *personal interests*, self-esteem scores as measured by the SSESS, *others*, depressive symptomatology as measured by the GDS, and *inner-self* as a source of self-esteem, significantly distinguished the RA group from the non-RA control group.

The RA group had significantly higher mean total scores on the GDS (mean = 16.24) than the non-RA control group (mean = 13.10). The non-RA control group had significantly higher total scores on the SSESS (mean = 17.32) than the mean of the RA group (mean = 12.94). The results of this analysis indicate that the RA group had significantly higher depressive symptomatology scores as measured by the GDS and lower self-esteem scores as measured by the SSESS than did the non-RA control group.

As displayed in Table 6.1, *health*, *personal interests*, *others*, and *inner-self* were the four sources of self-esteem that a greater number of participants from the non-RA control group than from the RA group reported on the SSESS. This indicates that these four as sources of self-esteem significantly discriminated between the RA and the non-RA control group. Although the number of participants providing illustrative examples of *family* as a source of self-esteem was 88% for the RA group and 78% for the non-RA group, it did not significantly discriminate these two groups.

Using sample proportions as prior probabilities, the discriminant function correctly classified 82 percent of the 100 participants. Forty three (86%) of the non-RA control group participants and 39 (78%) of the RA group participants were correctly classified. The eigenvalue was 1.26 for this discriminant function. Although the overall classification rate of 82% does not fully explain the nature of group differences, the canonical correlation of .75 indicates that the six significant variables are important predictors of group membership within this study.

Table 6.3

Results of discriminant function analysis of participants by group

Predictor Variable	Correlation of predictor with discriminant function	Univariate F (1,98)
Health	.629	36.40*
Personal Interests	.478	28.25*
Total SSESS	.453	25.41*
Others	.412	21.00*
Total GDS	-.357	15.75*
Inner-self	.252	7.86*
Work	.155	2.98
Personal Environment	.148	2.70
Family	-.120	1.77

* = $p < .001$

6.4 Discussion

From the results of this study, it appears that the Southampton Self-Esteem and Sources of Self-Esteem scale is a reliable instrument for implicitly measuring the construct of self-esteem in older adults with RA. The internal consistency and split-half reliability reported for the SSESS in this pilot study are consistent with those reported by Coleman and colleagues, who employed the scale in samples of elderly individuals from the general population. Although the SSESS has not

previously been used in health psychology research, it possess the psychometric properties of a standardised, quantitative self-report scale of the hypothetical construct of self-esteem. The Geriatric Depression Scale (GDS) also demonstrated acceptable internal consistency and spilt-half reliability within this study, consistent with its use as a measure of depressive symptomatology in other research (Fulop et al., 1993; Olin et al., 1992; Yesavage et al., 1983).

The SSESS was found to correlate highly with the GDS in this study, which is consistent with the correlation for these two measurement scales ($r = .80$, $p < .001$) reported by Coleman et al. (1993). Although cause and effect cannot be determined by a Pearson correlation, this result demonstrates the inverse relationship between self-esteem as measured by the SSESS, and depressive symptomatology as measured by the GDS. The significant negative correlation between the SSESS and RA disease duration reported in this study contrasts the results of Krol et al. (1994). While the significant positive correlation between disease duration and GDS scores is dissimilar to the results of both Krol et al. (1994) and Newman et al. (1989). For the older adults with RA involved in the present sample, lower self-esteem scores, and increased depressive symptoms were significantly associated with longer RA disease duration. Although this result differs from that reported by Krol et al. (1994), they sampled a smaller range of RA disease duration than those reported here. These authors did

anticipate the results of the present study when they suggested that low self-esteem may become a profound problem for those who have suffered the unpredictable aspects of RA over longer time periods. It is, however, problematic to compare the results of other studies with the present findings largely due to the greater range of ages reported in previous research. Nevertheless, further investigations are needed to provide a more in-depth understanding of the role played by disease duration in the psychological aspects of older adults with RA.

Ninety of the one hundred participant's in this study reported experiencing mild through moderate/severe depressive symptoms during the past 30 days as measured by the GDS. The prevalence rate of moderate/severe depressive symptoms reported by RA participants (20%) was identical to the conclusions of Creed (1990), who reported that 20% is an accurate rate of depressive symptomatology in RA. The 20% prevalence rate of moderate/severe depressive symptoms for RA participants is, however, significantly higher than the two percent prevalence of moderate/severe depressive symptoms reported by participants from the non-RA group. Indicating that more older adults suffering from RA are affected by depressive symptoms than those without the disease. The two percent prevalence rate of moderate/severe depressive symptoms of the non-RA group is lower than the ten percent figure reported in other research on

depressive symptoms in older community based individuals (Forsell et al., 1994; Stokes, 1992).

One of the interesting and problematic findings of this pilot study was the high number of participant's who experienced mild depressive symptoms over the past 30 days. Seventy two percent and eighty six percent of the RA and non-RA groups, respectively, reported mild depressive symptoms. This difference was significant, but qualified by the fact the mean total scores on the GDS were significantly higher for those in the RA group. Although mild depressive symptoms were reported more frequently by the non-RA group than the RA group, the mean total GDS scores of those who reported mild depressive symptoms were significantly higher in the RA group.

This 90% prevalence rate for depressive symptomatology may reflect problems with the current study's methodology. Firstly, the non-RA sample was composed of individuals visiting a hospital and attending day centres run by a local organisation concerned with the elderly. Both of these locations may attract a higher number of depressed individuals, thus creating a limitation for the accuracy of the prevalence rate of depressive symptoms in older, non-RA individual's from the community. Secondly, the high prevalence rate of mild depressive symptoms in the RA group sampled from out-patient clinics may also

reflect a selection bias that hinders the interpretation of the current results. DeVellis (1993) and Horwath et al. (1992) suggest that depression may be over-represented in samples of people identified through medical clinics. Also, samples drawn from RA out-patient clinics may over-represent those more seriously affected with rheumatological conditions (DeVellis, 1993).

The non-RA group had significantly higher self-esteem scores as measured by the SSESS than those in the RA group, indicating the older adults with RA generally had lower self-esteem. This result is somewhat compatible with the findings of Skevington et al. (1987). These authors reported that patients with early symptoms of RA had significantly lower self-esteem than "healthy" controls. Due to the rather short RA disease duration reported by Skevington et al. (1987) compared to the present sample, the similarity of these findings are interesting and should encourage future consideration. The classification of individual participants from the two groups into the three levels of self-esteem also demonstrated that the frequency of low levels of self-esteem was significantly greater for those with RA, and that high self-esteem was significantly more frequent for those in the non-RA group. The distribution of participant's by level of self-esteem for the non-RA group of the present study (high = 52%, medium = 40%, and low = 8%) is consistent with the average frequencies reported for similar participants (43%, 53%, and 5%) by Coleman et

al. (1993). In contrast to the non-RA group self-esteem levels and the findings reported by Coleman et al (1993), is the distribution of RA participants within the three levels of self-esteem (high = 10%, medium = 64%, and low = 26%). Suggesting that more older adults with RA have low levels of self-esteem when compared to those without the disease. Even though more RA participants reported medium levels of self-esteem than those in the control group, the RA participants within this level of self-esteem had significantly lower mean total scores on the SSESS.

The results of the discriminant function analysis of this study replicate, and add to the findings reported by Coleman and colleagues. In addition to self-esteem and depression scores, this analysis suggests that four sources of self-esteem (*health, personal interests, others, and inner-self*) were significant predictors of group membership. The RA participants compared to those in the non-RA group reported significantly fewer *health* and *personal interest* sources of self-esteem, lower total SSESS scores, fewer *others* as sources of self-esteem, greater total GDS scores, and fewer *inner-self* sources of self-esteem. Although *family* as a source of self-esteem was not a significant predictor of group membership, it was the most frequently referenced source for the RA group (88%), and one of the second most frequently referenced sources of self-esteem (78%) for the control group.

Only 26% of the RA individual's reported a lack of infirmary and the ability to perform aspects of daily living as a (*health*) source of self-esteem, compared to 78% of the non-RA group. The inflammation, pain and general functional disability of rheumatoid arthritis not experienced by the control group participants resulted in their frequent reference (78%) to *health* as a source of self-esteem.

Personal interests, *others*, and *inner-self* as sources of self-esteem were also significant predictors of group membership in this analysis. Consistent with the results of Coleman and colleagues, this study demonstrates that these three sources of self-esteem are associated with maintaining a robust sense of self-esteem in older adults. In addition to the lack of infirmary, more control group participant's reported *personal interests* (94%) and *others* (72%) as sources of self-esteem, while only 52% and 30% of RA participant's provided illustrative examples of these two sources, respectively.

This difference may suggest that the physical disability of RA can limit both the pursuit of hobbies and leisure activities, as well as interpersonal interests and relationships. Coleman et al. (1993) concluded that both *personal interests* and *others* are essential for positive self-evaluation and maintenance of psychological well-being in older adults. Perhaps the difference between the number of

participants from the two groups reporting *inner-self* as a source of self-esteem (52% for the RA and 78% for the control group) indicates that the control group participants have more positive philosophical values and psychological resilience. Moreover, the inner strength and psychological resilience of older adults with RA could be seriously affected by the unpredictable disease process which can lead to subjective uncertainty and feelings of perceived helplessness, therefore limiting their reference to the adaptive value of inner characteristics. In general, these results suggest that the older adults from the control group do not experience the intrusive nature of RA and that the majority (over 78%) do not have problems with aspects of daily living, the pursuit of enjoyable activities, interpersonal relations with others, and inner characteristics, when compared to older adults with RA.

This cross-sectional pilot study has demonstrated the quantitative and qualitative reliability of the SSESS in older adults with RA, but due to certain limitations the results must be approached with caution. This study has focused solely upon older adults and reported a smaller age range and standard deviation than other RA studies, but the non-RA group had a significantly higher mean age than the RA group. Additional research could improve upon the homogeneity of age as an independent variable by assessing depressive symptoms and self-esteem in "young-old" adults (65 - 75 years of age) and also "old-old" adults (over the age

of 75 years), as suggested by Powell (1994) in research on cognitive disability in ageing. An additional limitation of the present research was the omission of illustrative examples for negative self evaluations reported by participant's on the SSESS.

Additional research using the SSESS should incorporate the qualitative aspects of sources of low or negative self-esteem, such as pain and illness, which are important subjective symptoms of RA. For a more in-depth understanding of depressive symptoms and self-esteem in persons with RA, other variables must be measured and entered into the analyses. Based upon the literature of chapter five, these include functional disability, pain, coping with pain strategies, perceptions of helplessness, and objective clinical measures of RA disease activity. In conclusion, the cross-sectional nature of this pilot study does not permit the cause and effect relationship between self-esteem and depressive symptoms to be observed. Therefore, a longitudinal research design would be helpful to assess the information generated by the Southampton Self-Esteem and Sources of Self-Esteem scale on the depressive symptoms experiences by individuals with rheumatoid arthritis. Further conclusions from this study, including limitations, implications and additional directions for future research are considered in chapter nine.

CHAPTER SEVEN

THE PSYCHOLOGICAL ASPECTS OF AMYLOIDOSIS AS A CONSEQUENCE OF RHEUMATOID ARTHRITIS: A CROSS-SECTIONAL COMPARISON WITH AN RA-ONLY GROUP

7.1 Introduction

The chronic, painful aspects of rheumatoid arthritis, including inflammation, stiffness and fatigue are common symptoms experienced by those with the disease. Although the pathological aspects of RA increase levels of morbidity, the unpredictable and potentially disabling disease process is not solely responsible for death and increased mortality (Arthritis Care, 1995). The life expectancy of persons with RA is, however, noticeably shorter compared to those without the disease. In addition to cardiovascular disease and infections, one of the important causes of death in RA patients is amyloidosis (Couverchel, Maugars & Prost, 1995; Laakso, Mutru, Isomaki & Koota, 1986).

Amyloidosis is a heterogeneous group of diseases with different clinical manifestations, but all are characterised by histological findings of increased deposits of amyloid protein. Amyloid protein is a dense, insoluble waxy substance found extracellularly, which disrupts the structure and function of vital organs such as the kidney's (Dhillon, Woo & Isenberg, 1989). Amyloidosis is a potentially fatal complication of a wide range of chronic inflammatory illnesses (David, Vouyiouka, Ansell, Hall & Woo, 1993). Reactive secondary

amyloidosis is a specific form of amyloidogenesis, which is a consequence of rheumatic disease. Reactive secondary amyloidosis reduces the prognosis of RA patients, with death often occurring from renal failure (Couverchel et al., 1995; Dhillon et al., 1989). The protein subunit of secondary amyloidosis is serum amyloid A, or simply SAA. Sustained high concentrations of SAA are found in diseases that predispose to amyloidosis. Therefore, the rise in SAA concentrations appears to reflect the disease activity and chronic inflammation of RA. SAA is a protein synthesised in the liver during inflammation, though its specific function is as yet unknown (Harrison, Alpers & Davis, 1993).

The medical literature suggests a trend that those at risk for developing reactive secondary amyloidosis have unusually active rheumatoid disease activity as measured by erythrocyte sedimentation rate (ESR), length of morning stiffness and number of swollen joints (Dhillon et al., 1989; Tiitinen, Kaarela, Kautiainen & Isomaki, 1993). Clinical diagnosis of reactive secondary amyloidosis in RA patients is usually suspected with the onset of abdominal pain and diarrhoea, hypertension, proteinuria (increased concentrations of serum proteins in the urine), nephrotiic syndrome (great loss of protein in the urine, reduces levels of albumin in the blood, and generalised swelling of the kidney's), and renal failure (David et a., 1993; Harrison et al., 1993). The prevalence rate of reactive secondary amyloidosis in persons with RA has been reported to range from 5% to 15% (Dhillon et al., 1989), to 5% to 20% (Tiitinen et al., 1993).

These prevalence rates are only approximations due to the potentially difficult methods of confirming diagnosis, and the cases that are not reported due to infrequent medical consultation. The presence of proteinuria can be discovered with routine urine analysis, but it is difficult to directly associate this with the presence of amyloidosis due to the possibility of urinary tract infection, or drug related renal damage. Histological evidence generated via rectal biopsy or blood needle biopsy of abdominal subcutaneous fat tissue (the Westermark method) are useful in differential diagnosis, assessment of prognosis, and decision-making with regard to treatment of amyloidosis. The former is a potentially hazardous method, while the latter appears to be a less sensitive method for detection of SAA in rheumatoid arthritis (Dhillon et al., 1989). Verification of amyloidosis after death via postmortem has, however, revealed higher prevalence rates (Laakso et al., 1986).

In a longitudinal study of the mortality rate of RA patients with amyloidosis, Laakso et al. (1986) reported that 6% of males, and 13% of females with RA died as a result of amyloidosis. Due to difficulties with diagnosis, these authors concluded that the contribution of amyloidosis to the mortality of persons with RA is presumably greater than indicated by the death certificates. In a more recent study of the incidence and mortality of reactive secondary amyloidosis in RA patients, Tiitinen et al. (1993) reported that 11% of RA deaths were the result of amyloidosis. Tiitinen et al. (1993) also reported that the median

survival time following amyloidosis diagnosis for 64 RA patients studied between 1956 and 1989 was 24.5 months. The bleak prognosis for RA patients with amyloidosis was confirmed by Couverchel et al. (1995) who reported that 95% of 20 patients died from renal failure after a mean interval of 25 months since being diagnosed with amyloidosis.

The use of disease modifying anti-rheumatic drugs (DMARDs) has been suggested as a treatment method to control the disease activity and presumably stabilise circulating concentrations of serum amyloid A (Tiitinen et al., 1993). The early use of drug therapy can produce significant improvements in survival and preserve organ function of RA patients with amyloidosis (Dhillon et al., 1989; Tan, Pepys & Hawkins, 1995). The potential benefits of drug treatment, which do not reduce the amount of amyloid protein in organs such as the kidneys, must be weighted against the adverse effects of these drugs (Dhillon et al., 1989). Although amyloidosis only affects a small percentage of persons with RA, no treatment has been forwarded to remove amyloid deposits (Tiitinen et al., 1993).

The research on amyloidosis as a potentially life threatening consequence of RA is largely focused on diagnosis, medical treatment, and mortality. Currently, there are no published studies in the literature that have assessed psychological adjustment in individuals with RA and amyloidosis. The purpose of this study

is to add to the growing body of knowledge in the area of depressive symptoms and RA, by examining the similarities and differences between a group of individuals with amyloidosis as a consequence of their RA with an age, disease duration and gender matched RA-only group. In addition to assessing depressive symptoms and self-esteem and its sources, the present study investigated the role of pain, active and passive pain coping strategies, functional ability, and helplessness in these two community based RA out-patient groups. In an attempt to improve on the methodological problems reported in the pilot study, data for this research was obtained by self-report responses to mailed questionnaires. This type of procedure is consistent with the research of Wallston and colleagues in RA out-patient samples (Brown, Nicassio & Wallston, 1989; Brown, Wallston & Nicassio, 1989; Nicassio & Wallston, 1992).

Although there is a dearth of psychological research concerned with amyloidosis, the results of previously published studies on the psychological aspects of RA discussed in chapter five act as a point of departure for the present research. It is hypothesised that due to the possibility of increased RA disease activity and inflammation associated with the presence of amyloidosis in persons with RA, this will impair reports of self-esteem, and increase reports of depressive symptoms compared to a matched group of RA-only individuals. The following specific research questions are therefore considered in this cross-sectional

between group analysis: (1) Are depressive symptom scores different for the two groups? (2) Are moderate/severe depressive symptoms more prevalent in participants from the amyloid group? (3) Are self-esteem scores different for the two groups? (4) Do more amyloid participants have lower levels of self-esteem? (5) Do participants from the two groups differ on reports of pain, coping with pain, functional ability, helplessness, and sources of self-esteem? (6) Of the quantitative variables measured in this study, which are significant predictors of depressive symptoms, and pain coping strategies?

7.2 Method

7.2.1 Participants

Thirty five individuals (33 female and 2 male) provided informed consent for participation in this study. The experimental group consisted of 17 participants (16 female and 1 male) with amyloidosis as a consequence of their RA, who voluntarily provided complete data for this study. They were recruited from the 21 live amyloid out-patients (18 female, 3 male) diagnosed and consulted by rheumatologists from the West of Glasgow University Hospitals NHS Trust (80% of those invited to participate). They ranged in age from 36 to 82 years, with a mean age of 62 years (standard deviation = 14.39). The mean length of RA disease duration for these participants was 23 years (standard deviation = 8.29), with a range from 9 to 38 years. Sixty four percent of the amyloid participants were married, 12% divorced, 12% widowed, and 12% single. Three

individuals (2 female, 1 male) invited to participate did not return the consent form or completed questionnaire booklet, while one male returned an incomplete questionnaire package which was not included in the present study.

The RA-only control group consisted of 18 participants (17 females, 1 male) recruited from a random sample of 21 individuals diagnosed with RA by Rheumatologist from the above mentioned NHS Trust (86% of those invited to participate). They ranged in age from 30 to 77 years, with a mean age of 60 years (standard deviation = 12.60). At the time of data collection all of the RA-only group participants were being treated with non-steroidal anti-inflammatory drugs (NSIADs). The mean length of RA disease duration for these participants was 19 years (standard deviation = 10.38), with a range from 8 to 44 years. Sixty one percent of the RA-only participants were married, 22% divorced, 11 widowed, and 6% single. Two individuals (both male) invited to participate did not return the consent form or completed questionnaire booklet, while one female returned an incomplete questionnaire package which was not included in the present study.

7.2.2 Measurement Instruments

The amyloidosis and RA-only groups in this research were provided with information letters outlining the nature of the research and guaranteeing

confidentiality. The amyloid participants received one letter from the researcher and a second from the Consultant Rheumatologist (appendices I and J). The RA-only participants received one letter from the researcher (appendix K). In addition, all participants received a Greater Glasgow Health Board consent form (appendix D) used to document participation in this research, and a demographic questionnaire (appendix L).

The measurement instruments employed in this study were: (1) *Southampton Self-Esteem and Sources of Self-Esteem Scale* (Coleman, 1984); (2) *Centre for Epidemiological Studies Depression Scale* (Radloff, 1977); (3) *Arthritis Impact Measurement Pain Scale* (Meenan, Gertman & Mason, 1980); (4) *Vanderbilt Pain Management Inventory* (Brown & Nicassio, 1987); (5) *Health Assessment Questionnaire* (Kirwan & Reeback, 1986); and (6) *Arthritis Helplessness Index* (Nicassio et al., 1984).

1. *Southampton Self-Esteem and Sources of Self-Esteem Scale (SSESS)*

The SSESS (appendix H) is described in detail in section 6.2.2 of the previous chapter. For use in this study an additional source of self-esteem was added to the original seven sources of *family*, *others*, *health*, *personal interests*, *work*, *inner-self*, and *personal environment* employed by Coleman (1984). Illustrative examples of negative self-evaluations from SSESS items that made specific

reference to pain, illness, functional disability and difficulties with aspects of daily living were qualitatively coded as *illness*, a potential source of lower self-esteem..

2. *Centre for Epidemiological Studies Depression Scale (CES-D)*

The CES-D (appendix M) is a 20 item self-report index of current depressive symptoms (Radloff, 1977). The CES-D is a summated rating scale with scores that range from 0 to 60. It is commonly accepted that persons who score 16 or above on the CES-D are experiencing moderate/severe depressive symptoms (Kohout, Berkman, Evans & Cornoni-Huntley, 1993). To obtain a score of 16 or greater, a person must have had at least six of the 20 symptoms in the CES-D for most of the previous week or a majority of the symptoms for shorter periods. Although the CES-D focuses on current depressive symptoms, it has been correlated with clinical rating scales and has been employed as a device for screening depressed from non-depressed cases (Kohout et al., 1993).

The 20 items of the CES-D each correspond to a specific symptom of depression. The frequency with which each of the symptoms has been experienced in the preceding seven days was assessed on a 4-point response scale, where 0 = rarely or none of the time, 1 = some of the time (1-2 days of the week), 2 = much of the time (3 or 4 days of the week), and 3 = most of the time (5-7 days of the week).

The CES-D was derived from previously validated depression scales and the 20 items were selected to represent the major symptom components of depression that have been identified in clinical and factor analytic studies (Kohout et al., 1993). The major components of depressive symptomatology that are represented by the CES-D include: depressed mood, feelings of quilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite and sleep disturbance (Radloff, 1977).

The CES-D was originally designed for use in large-scale survey research involving the general public (Blalock, DeVellis, Brown & Wallston, 1989). It has been used to investigate depressive symptoms in other population subgroups (individuals with arthritis; the elderly) and has been found to have excellent psychometric properties (Blalock et al., 1989). Radloff (1977) reported the internal consistency of the CES-D to be .85, which represents a high degree of reliability.

3. *Arthritis Impact Measurement Pain Scale (AIMS-P)*

Two of the original four pain questions from the AIMS-P (appendix L) were used in this study to assess the severity of arthritis pain and the frequency of severe arthritis pain (Meenan, Gertman & Mason, 1980) . The two pain questions employed here have been shown to have a high internal consistency, alpha = .90 (Wallston, Brown, Stein & Dobbins, 1989) and alpha = .82 (Lorish,

Abraham, Laurence & Alarcon, 1991), which is very similar to the reliability of the original four-item pain scale of the AIMS. The two questions not included in this study as a measure of pain were: the length of morning stiffness and the frequency of pain in more than two specific joints. A pain score for each participant was created by taking the mean of the two responses, which both used a four-point scale (0 = no pain, 1 = mild pain/some severe, 2 = moderate pain/severe pain most times, and 3 = severe pain/at all times). The range of possible pain scores was 0-3, with higher scores reflecting a greater severity and frequency of pain.

4. *Vanderbilt Pain Management Inventory (VPMI)*

The VPMI (appendix N) is an 18 item self-report scale that was developed to assess the coping mechanisms used by chronic pain patients in the management of moderate to severe pain (Brown & Nicassio, 1987). The VPMI rates the frequency with which individual participants use specific coping strategies to deal with their pain on a 5-point scale, with 1 = never do when in pain, 2 = rarely do when in pain, 3 = occasionally do when in pain, 4 = frequently do when in pain, and 5 = always do when in pain.

The VPMI is composed of two subscales: active coping (seven items) and passive coping (11 items). The active coping subscale refers to the adaptive strategies that persons utilize when dealing with pain, such as staying busy and

attempting to ignore arthritic pain (Smith & Wallston, 1992). The active subscale has an alpha reliability coefficient of .73 (Smith & Wallston, 1992) and as reported by Brown & Nicassio (1987) has a significant negative correlation with the CES-D. The passive coping subscale of the VPMI refers to the maladaptive strategies used to deal with pain, such as taking to bed and restricting social activities. The passive subscale has an alpha reliability coefficient of .82 (Wallston et al., 1989) and as reported by Brown & Nicassio (1987) has a significant positive correlation with the CES-D. Factor analytic techniques were used to develop the VPMI with its two internally consistent subscales that are slightly negatively correlated with one another.

5. *Health Assessment Questionnaire (HAQ)*

An eight item version of the original 20 item HAQ (appendix O) was used in this study to assess functional ability (Kirwan & Reeback, 1986). The HAQ is a measure of the degree of difficulty that individuals have experienced during the previous seven days in eight aspects of daily living, including: rising, dressing, hygiene, reaching, grip and outside activities (Zeibland, Fitzpatrick, Jenkinson, Mowat & Mowat, 1992). The HAQ uses the following response format for each of its eight questions; 0 = no difficulty ("normal"), 1 = some difficulty ("adequate"), 2 = much difficulty ("limited"), and 3 = "unable". A mean score was derived for each participant (by dividing the sum of the eight items by 8) as an index of the functional ability with a possible range of 0-3. Higher scores

represent increased functional disability (Kirwan & Reeback, 1986). No correction was applied for the use of assisting devices. The HAQ is a reliable and valid measurement instrument that has been extensively used in RA research (Serbo & Jajic, 1991), and has been found to have adequate internal consistency, as well as convergent and discriminant validity (Peck et al., 1989).

6. *Arthritis Helplessness Index (AHI)*

The AHI (appendix P) is a five item self-report scale designed to assess perceptions of helplessness in rheumatoid arthritis (Nicassio, Wallston, et al., 1985). A 6-point Likert type response scale is used for each of the five items. The response scale ranged from strongly disagree, moderately disagree, disagree, to agree, moderately agree and strongly agree. The scoring range of AHI item is 1 - 6, where 1 = strongly disagree and 6 = strongly agree. Item four is reverse-scored on the 1 - 6 scale, where 1 = strongly agree and 6 = strongly disagree. Total AHI scores have a possible range of 1 to 30, with higher scores indicating greater helplessness (Stein et al., 1988). Cut-off scores for determining categories of helplessness have been derived from previous research with the AHI (Stein et al., 1988). Low perceived helplessness is associated with total AHI total scores of less than or equal to 10, while high levels of perceived helplessness correspond to total scores of 20 or above. The internal consistency as a measure of reliability of the AHI has been reported at .70, while the construct validity of this index is provided by serval studies other studies with

RA samples (Smith et al., 1994).

7.2.3 Procedure

After obtaining ethical approval for this research from the Greater Glasgow Health Board (appendix B), the Rheumatology Department of the West Glasgow University Hospitals NHS Trust provided names and addresses of the 21 live amyloidosis out-patients from the greater Glasgow area. A list of 21 RA-only out-patients randomly selected from the data base of individuals treated by NSAIDs only and consulted by rheumatologists from the above NHS Trust was also provided. Questionnaire packages were then mailed to the home addresses of the 42 potential participants. Included in this package were introductory letters, a Greater Glasgow Health Board Consent form, a five item demographic questionnaire, and the measurement instruments which were organised into a questionnaire booklet with easy-to follow self-report instructions for each scale. Also enclosed was a stamped envelope addressed to the Psychology Department at the University of Glasgow for return of the completed questionnaire booklet.

Upon return of completed questionnaires, the principal researcher and an assistant (an Honours Psychology student) independently coded the illustrative examples provided by participant's on the SSESS based upon Coleman's (1993) seven categories, and the eighth category referred to as *illness*. Inter-rater

reliability was based upon a consensus between the qualitative coding by the two independent raters for each participant's illustrative examples.

7.3 Results

7.3.1 Internal Consistency of Measurement Instruments

The internal consistency of the six separate measurement instruments used in this study was calculated using Cronbach's coefficient alpha. The *Southampton Self-esteem and Sources of Self-Esteem Scale* (SSESS) had an internal consistency alpha coefficient of .91. The *Centre for Epidemiological Studies Depression Scale* (CES-D) possessed a internal consistency of .89. The *Arthritis Impact Measurement Pain Scale* (AIMS-P) had an internal consistency of .80. The *Vanderbilt Pain Management Inventory* (VPMI) passive coping subscale possessed an internal consistency of .79, while the VPMI active coping subscale had an alpha coefficient of .75. The *Health Assessment Questionnaire* (HAQ) as a measure of functional ability possessed an internal consistency of .84. Finally, the *Arthritis Helplessness Index* (AHI) had a Cronbach's alpha coefficient of internal consistency equal to .35. All of the measurement instruments used in this study, with the exception of the AHI, generated modest or adequate levels of internal consistency. The AHI within this study produced an internal consistency of only .35, which was considerable lower than the alpha of .70

reported by Smith et al. (1994). This lower internal consistency represented an index of error variance of greater than 90 percent. This is an unsatisfactory level of random measurement error (Nunnally & Bernstein, 1994), and the AHI was considered an unreliable measure within this study, therefore, it was not used in any subsequent analysis.

A high degree of inter-rater reliability was established for each participant's illustrative examples of self-esteem sources as generated by the SSESS. Three amyloid group participants did not provide any illustrative examples, while the remaining 32 participants reported a minimum of one and a maximum of seven sources from the eight possible categorises with a considerable amount of repetition. The two researchers categorising the qualitative sources of self-esteem agreed with 91% of the 32 participants who provided examples. Ten percent of illustrative examples for positive and negative SSESS responses were not catalogued within one of the eight possible sources of self-esteem.

7.3.2 Pearson Correlation Coefficients

Pearson correlation coefficients were calculated to determine the relationships between the total scores from each of the measurement instruments used, and also their relationships with demographic variables of age and RA disease duration of participants. Table 7.1 presents a matrix of the resulting correlation

coefficients. The highest correlation ($\underline{r}$ = -.78, $\underline{p}$ <.001) was a negative relationship between the SSESS and CES-D scores. Lower self-esteem was significantly associated with increased reports of depressive symptoms over the

Table 7.1

Matrix of Pearson correlation coefficients

	AGE	DD	PAIN	HAQ	PC	AC	CESD
AGE[1]	1.0						
DD[2]	.36	1.0					
PAIN[3]	-.10	-.12	1.0				
HAQ[4]	.32	.21	.25	1.0			
PC[5]	.25	-.01	.31	.35	1.0		
AC[6]	-.10	-.13	.27	-.06	**-.45***	1.0	
CESD[7]	.12	-.03	.30	**.44***	**.68****	-.24	1.0
SE[8]	.01	.06	-.09	-.41	**-.53****	.39	**-.78****

*** = $\underline{p}$ < .01 ** = $\underline{p}$ < .001**

1 = Age of participants in years; 2 = RA disease duration; 3 = Pain as measured by the AIM-Pain Scale; 4 = Functional ability as measured by the Health Assessment Questionnaire; 5 = Passive coping subscale of the Vanderbilt Pain Management Inventory; 6 = Active coping subscale of the Vanderbilt Pain Management Inventory; 7 = Depressive symptoms as measured by the Centre for Epidemiological Studies Depression scale; 8 = Self-esteem as measured by the Southampton Self-Esteem and Sources of Self-Esteem scale

past seven days. Passive coping was positively correlated to CES-D scores ($\underline{r}$ = .68, $\underline{p}$ <.001), and negatively correlated to SSESS scores ($\underline{r}$ = -.53, $\underline{p}$ <.001). Indicating that passive pain coping strategies were significantly related to increased depressive symptoms, and lower self-esteem. Passive coping was also

negatively correlated with active coping strategies (r = -.45, p <.01). This demonstrates that passive coping was significantly associated with lower active coping strategies. The only other significant correlation was between CES-D scores and scores on the HAQ (r = .44, p <.01), which suggests that increased reports of depressive symptoms were associated with higher levels of functional disability.

7.3.3 Descriptive Statistics of Measurement Instruments

The 17 amyloid group participants reported a SSESS mean total score of 12.47 (S.D. = 5.38), whereas the 18 RA-only participants reported a SSESS mean total score of 16.56 (S.D. = 5.48). SSESS total scores ranged from 0 to 20. On the CES-D, the amyloid group had a mean total score of 21.00 (S.D. = 8.08), while the RA-only group had a mean total score of 18.83 (S.D. = 9.73). CES-D total scores ranged from 5 to 39. On the AIM - Pain scale, the amyloid group participants reported a mean total arthritis pain score of 2.74 (S.D. = 0.71), whereas the RA-only group participants had a mean total arthritis pain score of 3.20 (S.D. = 0.62). Total AIMS - Pain scores ranged from 1.4 to 4. The amyloid group had a mean total HAQ score of functional ability of 1.50 (S.D. = 0.54), while the RA-only group reported mean total HAQ scores of 1.20 (S.D. = 0.59). Functional ability scores of the HAQ ranged from 0.50 to 2.50. The amyloid participants reported mean total passive coping score on the VPMI of 33.18 (S.D. = 6.44), and active coping mean total scores of 19.94 (S.D. = 4.60).

The RA-only participants reported mean total passive coping scores on the VPMI of 31.83 (S.D. = 7.65), and active coping mean total scores of 20.78 (S.D. = 4.24). Passive and active coping scores ranged from 21 to 27, and 10 from 21, respectively.

Table 7.2 presents the total number of participants from the amyloid and RA-only groups who provided illustrative examples for each of the eight categories of self-esteem sources.

Table 7.2

Number of participants in the amyloid group and the RA-only group who provided examples for the eight sources of self-esteem as generated by the SSESS

Source of Self-Esteem	Amyloid	RA-only
Personal Interests	7	7
Others	6	10
Inner-self	0	7
Health	3	10
Personal Environment	2	4
Family	13	18
Work	5	6
Illness	8	5

The following are specific illustrative examples from the SSESS reported by participant's and categorised within the eight sources of self-esteem. *Personal Interests*: "I enjoy going to bingo and watching videos" (65 year old married female with amyloidosis). *Others*: "I enjoy mixing socially and having a laugh with my friends" (66 year old single female with RA). *Inner-self*: "I try not to let things get me down, and I always give it my best shot" (74 year old married male with RA). *Health*: "I know what I can do, and I'm still good with my hands and brain" (61 year old married male with amyloidosis). *Personal Environment*: "I have recently moved house and at present my main aim is to completely refurbish and redecorate" (36 year old married women with amyloidosis). *Family*: "I feel that my family still need me and I live for them" (68 year old married female with amyloidosis). *Work*: "I'm able to cope with my job and I enjoy working" (63 year old married female with RA). *Illness*: "I'm restricted in what I can do; I can't do my normal housework" (57 year old divorced female with amyloidosis).

Pearson chi-square tests were used to determine if the number of participant's from the two groups who reported each source of self-esteem as presented in Table 7.2 were significantly different. Illustrative examples of *inner-self* was the only source of self-esteem reported more frequently by RA-only participants than amyloid participants [$\underline{X^2}$ (1) = 6.97, $\underline{p} < .01$]. Illustrative examples for the

other seven sources of self-esteem were not significantly different for participants from the two groups. However, the chi-square for differences between participants from the two groups' examples for *health* as a source of self-esteem [$\underline{X^2}$ (1) = 3.80, $\underline{p} < .051$], approached statistical significance.

7.3.4 Categorisation by Depressive Symptom and Self-Esteem Scores

Table 7.3 presents the number of participants from each group whose scores fell into the appropriate cut-off points for depressive symptoms as measured by the CES-D, and levels of self-esteem as measured by the SSESS.

Table 7.3

Number of participants above cut-off scores for depression (CES-D scores above 16) and the number within the three SSESS categories

Measurement Instrument	Amyloid Group	RA-only Group
CES-D		
non-depressed (0-15)	4	8
depressed (>16)	13	10
SSESS		
Low (0-9)	6	2
Medium (10-18)	10	7
High (19-20)	1	9

A two by two Pearson chi-square test on the categorisation of participants from the two groups based on the CES-D cut-off score of 16 or greater for depression yielded a non-significant result [$\underline{X^2}$ (1) = 1.68, $\underline{p} < .19$]. A high number of participants (67%) from both groups reported experiencing moderate/severe depressive symptoms over the past seven days as measured by a cut-off point of 16 on the CES-D. However, the number of depressed amyloid participants (76%) was not significantly different from the number of depressed (56%) RA-only participants.

A three by two Pearson chi-square test on the categorisation of participants from the two groups based upon their level of self-esteem as measured by the SSESS produced a significant result [$\underline{X^2}$ (2) = 8.91, $\underline{p} < .02$]. As displayed in Table 7.3, the distribution of scores on the SSESS shows that the categorisation of participants into high, medium, and low levels of self-esteem was significantly different for the two groups. Although more amyloid participants reported medium levels of self-esteem compared to the RA-only participants, the latter group had significantly fewer participants with low levels, and significantly more participants with high levels of self-esteem.

7.3.5 Discriminant Function Analysis of Participants by Group

A direct discriminant function analysis was performed using nine predictor variables of membership in two groups. The first group represented participants with amyloidosis as a consequence of their RA, while the second represented participants from the RA-only group. The six predictor variables were: (1) total score from the SSESS, (2) total scores from the CES-D, (3) total scores from the AIMS - Pain scale, (4) total active coping scores from the VPMI, (5) total passive coping scores from the VPMI, and (6) total scores of functional ability from the HAQ. Age and RA disease duration were not included as predictor variables in this analysis because the amyloid and RA-only groups were matched on these two demographic variable. Gender was also not included due to the large number of female participants in both groups.

This analysis yielded a statistically significant discriminant function that maximally separated the two groups: X^2 (6) = 14.94, $p < .02$. As presented in Table 7.4, the correlations of the predictors with the discriminant function suggest that the two predictors of self-esteem as measured by the SSESS and pain as measured by the AIM - pain scale, significantly distinguished the amyloid group from the RA-only group.

Table 7.4

Results of discriminant function analysis of participants by group

Predictor Variable	Correlation of predictor with discriminant function	Univariate F (1,33)
Total SSESS	.482	4.95*
AIM - Pain	.442	4.16*
HAQ-functional ability	-.336	2.40
Total CES-D	-.155	0.51
VPMI Passive coping	-.122	0.32
VPMI Active Coping	-.122	0.31

* = $p < .05$

The results of this analysis indicate that the amyloid group had lower self-esteem scores as measured by the SSESS (mean = 12.47), than the RA-only group (mean = 16.56). In addition, this discriminant function analysis revealed that the RA-only participants reported significantly higher levels of arthritis pain as measured by the AIM - Pain scale (mean = 3.20) than the amyloid participants (mean = 2.74). This analysis demonstrates that while amyloid participants reported significantly lower self-esteem than RA-only participants, this latter group reported significantly greater subjective experiences of RA pain.

Using sample proportions as prior probabilities, this discriminant function correctly classified 77 percent of the 35 participants. Thirteen of the 17 amyloid participants (76.5%), and 14 of the 18 RA-only participants (77.8%) were correctly classified. The eigenvalue was 0.65 for this discriminant function. Although the overall classification rate of 77 percent does not fully explain the nature of group differences, while the canonical correlation of .63 indicates that the two significant variables are marginally important predictors of group membership within this study.

7.3.6 Predictive Analyses

A series of stepwise multiple regression analyses were performed to determine which variables of those measured best predicted, firstly, depressive symptoms as measured by the CES-D and, secondly, passive coping strategies as measured by the VPMI. The predictor variables included: (1) age of participants in years, (2) RA disease duration in years (3) SSESS scores, (4) AIMS - Pain scores, (5) HAQ scores as an index of functional ability, (6) active coping scores of the VPMI, (7) passive coping scores of the VPMI (only entered as a predictor in the first analysis), and (8) CES-D scores (only entered as a predictor in the second analysis).

Using CES-D scores as the criterion variable in the first regression analysis, two variables contributed significantly (R = .84; $F(2, 32) = 39.44$, $p < .0001$) to the prediction of depressive symptoms. As presented in Table 7.5, self-esteem scores as measured by the SSESS was the first predictor to emerged, accounting for 62% of the variance in CES-D scores. Passive coping scores of the VPMI was the second predictor variable, accounting for an additional 9% of the variance in CES-D scores. Based upon the *beta* statistics (standardised regression coefficients) displayed in Table 7.5, this analysis suggests that depressive symptoms over the past seven days were predicted by low self-esteem and increased reports of passive coping strategies.

Table 7.5

Multiple regression analysis: Predictors of depressive symptom scores as measured by the CES-D

Predictor	R	R^2 (adj)	*Beta*	F (p <.00)
SSESS	.786	.618 (.606)	-.786	$F(1,33) = 53.32$ ($p < .0001$)
Passive scores (VPMI)	.843	.711 (.693)	.362	$F(2,32) = 39.44$ ($p < .0001$)

Using passive coping scores of the VPMI as the criterion variable in the second regression analysis, three variables contributed significantly ($\underline{R}$ = .78; $\underline{F}$(3, 31 = 15.60, $\underline{p} < .0001$) to the prediction of passive coping strategies. As presented in Table 7.6, depressive symptoms as measured by the CES-D was the first predictor to emerge, accounting for 46% of the variance in passive coping scores. Active coping scores of the VPMI was the second predictor to emerge, accounting for an additional 9% of the variance in passive coping scores. The third predictor variable to emerge was pain scores as measured by the AIMS-P, accounting for a further 5% of the variance in passive coping scores. Based upon the *beta* statistics (standardised regression coefficients) displayed in Table 7.6, this analysis suggests that passive coping strategies were predicted by depressive symptoms over the past seven days, fewer reports of active coping strategies, and increased frequency and severity of pain.

Table 7.6

Multiple regression analysis: Predictors of passive coping strategies as measures by the VPMI

Predictor	R	R^2 (adj)	*Beta*	F (p <.00)
CES-D	.679	.460 (.444)	.679	F(1,33) = 28.17 (p < .0001)
Active scores (VPMI)	.740	.547 (.519)	-.303	F(2,32) = 19.33 (p < .0001)
Pain scores (AIMS-P)	.776	.601 (.563)	.264	F(3,31) = 15.60 (p < .0001)

7.4 Discussion

The purpose of this study was to investigate the psychological aspects of amyloidosis as a consequence of RA by comparing a group of amyloid patients' self-reports with an RA-only group. The findings suggest that these two groups reported similar levels of depressive symptoms for the past seven days as measured by the CES-D. The results do indicate, however, that the two groups of participants had significantly different reports of self-esteem as the evaluative dimension of the self-concept. Individuals with the potentially fatal disease of amyloidosis, which is a consequence of the chronic inflammation of RA, perceive characteristics of themselves in a less than favourable manner than do RA-only individuals.

Although the two groups had similar depressive symptom scores, 23 of the 35 participants satisfied the CES-D criteria for depression (scores of 16 or greater). This prevalence rate of 67 percent of participants from the present study who reported elevated depressive symptoms is considerably higher than the 20 percent figure for depressive symptoms reported by Creed (1990). As Magni et al., (1994) report, however, illnesses associated with chronic pain and life threatening consequences are linked to an increase risk of depressive symptoms. This finding could perhaps be explained by the predominance of female participants in the sample. Research with community based individuals have reported that females are twice as likely to report symptoms of depression than are males (Davison & Neale, 1994). While Newman et al. (1989) reported that females with RA have significantly higher levels of depressed mood than RA males. Amyloidosis affects only a small percentage of RA patients, but additional research is needed to further investigate the gender differences on depressive symptoms experienced by those with this potentially fatal aspect of chronic inflammatory illness.

Why should the amyloid participants report lower self-esteem than their counterparts in the RA-only group? This is an interesting finding and a question that is in need of future consideration from both research, and clinical investigations. A possible answer can only be a speculation, but the potentially fatal aspect of renal failure caused by amyloidosis could seriously reduce the

positive evaluations that a person generates about themselves. The stress associated with the life threatening aspects of amyloidosis may exhaust personal resources, create negative attitudes towards the *self*, leading to low levels of self-acceptance and therefore low self-esteem.

Perhaps this particular finding can be explained further by the significant difference between the number of participants from the two groups who provided illustrative examples of *inner-self* as a source of self-esteem. Not one of the amyloid group participants, but seven of the RA-only participants made reference to this self-esteem source. To speculate once again, it could be possible that knowledge of their individual prognosis, in addition to dealing with the symptoms of RA exhausts an amyloid patient's inner characteristics, including values, principles and attitudes towards life. Coleman et al. (1993) proposed that *inner-self* sources of self-esteem are themes that describe the building blocks of personal identity that older persons use to help preserve continuity of life. The significant difference between the number of RA-only and amyloid participants who provided illustrative examples of *inner-self* could indicate that certain RA-only participants have inner strength and psychological resilience. Moreover, the role of *health* sources of self-esteem may play an important role in the lower self-esteem of amyloidosis, compared to RA-only. The difference between the number of amyloid and RA-only participants who reported examples of this source of self-esteem approached statistical

significance, suggesting that references to lack of infirmary and the ability to perform essential activities of daily living may partially account for greater self-esteem in RA-only participants.

Why should the RA-only participants report significantly higher arthritis pain scores than the amyloid participants? Perhaps the amyloid group participants are less concerned with the subjective experiences of arthritis pain than the RA-only participants due to the problems associated with renal dysfunction. It could also be possible that perceptions of arthritis pain are secondary and comparatively less of a stressor than the life threatening consequences of amyloidosis.

Future research in this area could be directed towards evaluating the psychological well-being, perceptions of pain, as well as self-esteem and its sources in persons with RA and amyloidosis compared to those suffering from diseases with similar prognosis and symptoms, such as chronic renal dysfunction. It is only through additional research that questions concerning self-esteem and pain in persons with amyloidosis can be explained without speculation.

The results of the regression analyses which demonstrated that depressive symptoms over the past seven days were predicted by low self-esteem and increased reports of passive coping strategies supports previous research.

Skevington (1993) reported that problems with self-esteem are likely antecedents of depressive symptoms in those with short RA disease duration. Other researchers have consistently reported that passive, avoidant and emotion-focused coping strategies are predictors of depressed mood and poor psychological adjustment to the pain of RA (Beckman et al., 1991; Nicassio & Wallston, 1992; Smith & Wallston, 1992; Young, 1992). These conclusions are also consistent with the present results, which demonstrate that passive coping strategies were predicted by increased depressive symptoms, fewer active coping strategies, and increased subjective experiences of pain. One of the interesting issues generated by this result, however, was that self-esteem was not a significant predictor of passive coping strategies.

The findings presented within this chapter are by no means definitive. This study has introduced the examination of the psychological aspects of amyloidosis, but due to the absence of previous research this study has generated hypotheses rather than specifically tested hypotheses. The following limitations of this study must be seriously considered. Firstly, the small sample size and the large number of female participants poses problems that restrict the generalisation of the results of this prospective study.

Secondly, unlike the pilot study presented in chapter six, no information was obtained from participants in the present study concerning their mental health,

including the possibility of previous diagnosis and treatment for clinical depression. This lack of knowledge pertaining to participants mental health could be an additional explanation for the high prevalence rate for elevated depressive symptoms. Zautra, Burleson, Matt, Roth & Burrows (1994) have declared that RA out-patients on anti-depressant medication report more depressive symptoms, which can distort research efforts investigation sub-clinical thresholds of depressive symptoms. For a more accurate indication of participants state of mental health, including clinical depression and other mental health problems, as well as cognitive disorders, future research in this area must refer to patient casenotes for confirmation of previous mental and physical health problems which can confound depressive symptom research.

Other specific limitations of this study was the omission of details concerning amyloidosis treatment, and the lack of clinical measures of RA disease activity for participants of both the groups, such as erythrocyte sedimentation rate (ESR), and number of swollen joints. These variables were not included in the present study so as to focus solely upon affective, behaviourial, and cognitive aspects of suffering from amyloidosis compared to an age and RA disease duration matched RA-only group. Finally, although depressive symptoms, self-esteem, pain and pain coping strategies were assessed by reliable measurement instruments in the present study, the psychometric problem of unacceptable measurement error associated with the Arthritis Helplessness Index (AHI)

removed an important variable from the analyses that may have further explained the relationship between self-esteem and depressive symptoms.

Even with these limitations, this study represents an important advance in the research on the psychological aspects RA by focusing upon a small group of amyloidosis patients. This is one of the only studies that has assessed the prevalence of depressive symptoms in persons with amyloidosis as a potentially fatal consequence of RA, where self-esteem and subjective reports of pain were significantly lower compared to RA-only patients. Further conclusions from this study, including limitations, implications and directions for future research are presented in chapter nine.

CHAPTER EIGHT

DEPRESSIVE SYMPTOMS IN RHEUMATOID ARTHRITIS: A LONGITUDINAL STUDY OF QUANTITATIVE AND QUALITATIVE ASPECTS OF SELF-ESTEEM

8.1 Introduction

Pain from stiff and swollen joints is one of the most consequential symptoms of RA (Parker et al., 1988). Individuals with RA consider their pain a major stressor in their lives, and its relief a primary concern (Afflect et al., 1992). There is, however, considerable theoretical controversy in the literature regarding the extent to which pain and depression are associated. Moreover, the degree of association between pain and depressive symptomatology in the general RA population has been inconclusive (Brown, 1990).

Significant correlations between depressive symptoms and RA pain have been reported in cross-sectional studies (Brown et al., 1989; Frank et al., 1988; Hawley & Wolfe, 1988; Peck et al., 1989; Smith & Wallston, 1992). While in a longitudinal study of the pain-mood relation in RA, Afflect et al. (1992) investigated the causal aspects of these two variables. They presented results to support a central assumption that mood is a pain-dependent process. These authors did, however, acknowledge the converse: that pain may also be dependent upon mood. The Afflect et al. (1992) study does not fully support the previous conclusions of Brown (1990), who investigated the prospective

relationship between RA pain and depression with the use of causal modelling techniques. Brown's (1990) findings are consistent with previous cross-sectional studies that have a found a significant association between intensity and frequency of pain episodes and the severity of depressive symptomatology in RA patients. In regards to the causal relationship between RA pain and depression, Brown (1990) found modest support for the causal impact of pain on subsequent depressive symptoms over a six-month period, but unlike Affleck et al. (1992) generated no evidence to suggest that prior depression caused an increase in pain perceptions.

The lack of widely supported theory and the inconsistent empirical findings concerning the relationship between RA pain and depression is a major shortcoming in the literature (Brown, 1990). Due to the complex phenomenon of pain, however, other psychosocial variables have been found to contribute to the prevalence of depressive symptoms in RA independently of pain, and help moderate the pain-depression relationship (Nicassio & Wallston, 1992). Notably coping strategies and other cognitive variables, including helplessness beliefs (Smith et al., 1994; Smith & Wallston, 1992). Although the predictive role of self-esteem in the development of depression is disputed (Andrews & Brown, 1993; Lewinsohn et al., 1981), it has only been assessed in one previous longitudinal study within RA. This study by Skevington (1993b) did not, however, examine the predictive role of self-esteem in RA patients' reports of

pain. Skevington (1993b) assessed RA pain, depressive symptoms, pain-coping beliefs, and self-esteem in recently diagnosed RA out-patients at ten month to one years intervals for 24 months after baseline measures. The results of this study suggested that passive pain-coping beliefs and low self-esteem were antecedents of depressive symptoms in the early stages of RA.

The purpose of the present longitudinal study was to partially replicate the research of Skevington (1993b) who found evidence for an *antecedent hypothesis*, which asserts that negative self-evaluations (low self-esteem) are antecedents of depression in RA. This research was designed to go beyond the contributions of Skevington (1993b). The present study also evaluated the *antecedent hypothesis* in regards to RA pain, and functional disability as a behaviourial aspects of the disease. In addition, the *consequence hypothesis* was tested to determine if subsequent reports of self-esteem are consequences of demographic, disease related, behaviourial, affective and cognitive variables. Moreover, this research applies these hypotheses to individuals who have suffered from RA for a minimum of five years. Thus, attempting to generalize the findings of Skevington (1993b) beyond those individuals recently diagnosed with RA.

To improve upon methodological problems reported in the previous studies of this thesis, information concerning RA disease duration, medication, erythrocyte

sedimentation rate (ESR), and previous mental health problems including episodes and treatment of clinical depression were collected from each participants' hospital casenotes. Data for both waves of this study were obtained by self-report responses to mailed questionnaires as discussed in chapter seven.

A longitudinal research design used in this study focusing on pain, depressive symptoms and self-esteem of individuals with RA is an improvement on the methodology of the previous cross-sectional studies for two important reasons. Firstly, a longitudinal design can be used to measure the test-retest reliability of the Southampton Self-Esteem and Sources of Self-Esteem Scale (SSESS), and determine whether self-esteem scores are stable over time. The clinical utility of this measure of self-esteem depends to a great deal on whether or not the construct can be measured in a consistent and reliable manner over time. Individuals with RA are known to experience fluctuations in pain and functional ability over time, but it is not currently known how self-esteem fluctuates over time for long-term RA patients.

Secondly, longitudinal research permits an examination of the predictive validity of self-esteem in the assessment of pain, depressive symptoms and functional disability experienced by those with RA. That is, to what degree can self-esteem reported at one point in time predict psychological well-being and pain six months later? If self-esteem is an important predictor of RA patients

subsequent status, then rheumatologists and other health-care professionals who devote a considerable portion of their time helping patients alleviate their pain, might find this information helpful in explaining why some patients do or do not exhibit improvement in mood from pain reduction. At the pragmatic level, arthritis health-care providers may find the assessment of self-esteem helpful in two ways. Firstly, for identifying individuals with low self-esteem and, secondly for referring these individuals for interventions to increase their positive self evaluations and as a consequence reduce reports of depressive symptoms, as well as subjective perceptions of pain.

In an attempt to add to the growing body of knowledge and further understand the role of self-esteem in RA, the following research questions were addressed in the present longitudinal study: (1) From the cross-sectional data at wave one, which sources of self-esteem significantly distinguish depressed from non-depressed RA participants? (2) Which wave one quantitative variables significantly distinguish depressed from non-depressed RA participants at wave two? (3) The *antecedent hypothesis*: Is there evidence to suggest that reports of self-esteem independently predict subsequent reports of depressive symptoms, pain, and functional ability? (4) The *consequence hypothesis*: Of the demographic, disease, behaviourial, affective and cognitive variables measured at wave one, which independently predict wave two self-esteem reports?

8.2 Method

8.2.1 Participants

Thirty seven participants (30 females and 7 males) provided informed consent and completed questionnaire packages from two waves of data collection separated by six months. Their mean age was 58 years (standard deviation = 12.69), with a range from 30 to 82 years. The mean length of RA disease duration for the participants was 16 years (standard deviation = 11.84), with a range from 5 to 42 years. Seventy three percent of participants were married, 13% divorced, 11% widowed, and 3% single. The 37 participants who voluntarily provided complete information for this study were recruited from a list of 50 (74% of those invited to participate) diagnosed and consulted by rheumatologists from the West of Glasgow University Hospitals NHS Trust.

At wave one of the data collection, 17 participants had been receiving non-steroidal anti-inflammatory drug (NSAID) treatment only for their RA, while the remaining 20 participants had been receiving disease modifying anti-rheumatic drug (DMARD) treatment and NSAIDs for at least a minimum of six months prior to commencement of this study. At wave two, 8 participants initially receiving only NSAID treatment had sulphasalazine (a DMARD) added to their RA treatment strategies. The remaining 9 NSAID only participants, and the 20 DMARDs participants were receiving the same RA treatment at wave two as at wave one of data collection.

Forty two potential participants returned complete information from wave one of the data collection, while 41 contributed complete wave two questionnaire packages. One single female did not return wave two information. This participant's wave one only data was not included in the present analysis. Four participants who completed both waves of the data collection were also excluded from the present analysis. These included two married males who were diagnosed with ankylosing spondylitis (AS) in addition to RA, and two females (one married, one divorced) who were both being treated with anti-depressant medication at the time of this study.

8.2.2 Measurement Instruments

The measurement instruments used in both wave one and wave two of the data collection were: (1) *Southampton Self-Esteem and Sources of Self-Esteem Scale* (Coleman, 1984; appendix H); (2) *Centre for Epidemiological Studies Depression Scale* (Radloff, 1977; appendix M); (3) *Arthritis Impact Measurement Pain Scale* (Meenan, Gertman & Mason, 1980; appendix L); (4) *Vanderbilt Pain Management Inventory* (Brown & Nicassio, 1987; appendix N); (5) *Health Assessment Questionnaire* (Kirwan & Reeback, 1986; appendix O); and (6) *Arthritis Helplessness Index* (Nicassio et al., 1984; appendix P). Specific information concerning scoring and the psychometric properties of these self-report scales is presented in section 7.2.2 of chapter seven. Erythrocyte sedimentation rate (ESR) as a clinical measure of RA disease activity was

collected for all participants to correspond with the time of wave one data collection. ESR is a routine test (measured in millimetres per hour) that is performed at each out-patient consultation. Each participant's ESR was obtained from hospital casenotes following collection of wave two questionnaire data.

8.2.3 Procedure

After obtaining ethical approval for this research from the Greater Glasgow Health Board (appendix B), the Department of Rheumatology from the West Glasgow University Hospitals NHS Trust provided two lists of names and home addresses of RA out-patients from the greater Glasgow area. The first list was 25 RA out-patients receiving symptom relieving drug treatment only (NSAIDs), while the second list was of 25 RA out-patients receiving disease modifying drug treatment (DMARDs) in addition to NSAIDs. Both list were randomly selected from the data base of individuals diagnosed and consulted by rheumatologists from the above mentioned NHS Trust.

The 50 potential participants for wave one of the data collection were mailed a questionnaire package to their home addresses that contained an information letter from the researcher inviting their participation, outlining the nature of this study, and guaranteeing confidentiality (appendix K). Also enclosed was a Greater Glasgow Health Board consent form (appendix D) used to document participation in this research, a five item demographic questionnaire (appendix

L), and the measurement instruments which were organised into a questionnaire booklet with easy-to-follow instructions for each scale. A stamped envelope addressed to the Psychology Department at the University of Glasgow was also included for return of the completed questionnaire booklet. Upon receipt of completed questionnaires, the 42 participants were sent a thank you letter (appendix Q) reminding them of longitudinal nature of the study.

Six months following receipt of wave one data, questionnaire packages were mailed to the 42 participants. Included in this package was a letter of introduction from the researcher (appendix R), and a six page questionnaire booklet identical to the wave one booklet, except that the demographic questionnaire (appendix S) contained questions concerning medical consultation and medication. Participants were once again provided with a addressed stamped envelope for return of their completed questionnaire booklet. If participants had not returned their completed wave two questionnaire booklets two weeks following the date when it was posted, they were sent another booklet with a letter encouraging their participation (Appendix T).

Upon return of completed questionnaires from wave two, each participants hospital casenotes were consulted with the assistance of a consultant rheumatologist. Information associated with other physical and mental health problems, ESR, as well as confirmation of RA drug treatment were obtained.

The principal researcher and an assistant (a Registered General Nurse) independently coded the illustrative examples provided by participants from both waves of data collection based upon Coleman's (1993) seven categories (*personal interests, others, inner-self, health, personal environment, family, and work*), and the eight category referred to as *illness*. Inter-rater reliability was based upon a consensus between the qualitative coding by the two independent raters for each participant's illustrative examples.

8.3 Results

8.3.1 Internal Consistency and Retest Reliability of Measurement Instruments

The internal consistency of the six separate measurement instruments used at wave one and wave two in this study was calculated using Cronbach's coefficient alpha. The test-retest reliability was calculated using the Pearson correlation coefficient between wave one and wave two administration of each measurement instrument. The *Centre of Epidemiological Studies Depression Scale* (CES-D) possessed alpha coefficient = .89 at both wave one and wave two. The test-retest reliability of the CES-D was significant at $r = .61$, $p < .001$. The *Southampton Self-Esteem and Sources of Self-Esteem Scale* (SSESS) had a wave one alpha = .87, and an alpha = .85 at wave two. The test-retest reliability of the SSESS was significant at $r = .79$, $p < .001$. The *Arthritis Impact Measurement Pain Scale* (AIMS-P) possessed a wave one alpha = .85, and at

wave two the alpha = .75. The test-retest reliability of the AIMS-P was significant at $\underline{r}$ = .49, $\underline{p}$ < .01. The *Vanderbilt Pain Management Inventory* (VPMI) passive coping subscale had a wave one alpha = .84, and an alpha = .85 at wave two. The test-retest reliability of the VPMI passive coping subscale was significant at $\underline{r}$ = .80, $\underline{p}$ < .001. The VPMI active coping subscale possessed an alpha = .74 at both wave one and wave two. The test-retest reliability of the VPMI was significant at $\underline{r}$ = .67, $\underline{p}$ < .001. The *Health Assessment Questionnaire* (HAQ) had a wave one alpha = .86, and at wave two alpha = .91. The test-retest reliability of the HAQ was significant at $\underline{r}$ = .68, $\underline{p}$ < .001. The *Arthritis Helpless Index* (AHI) possessed a wave one alpha coefficient = .77, and an alpha = .80 at wave two. The test-retest reliability of the AHI was significant at $\underline{r}$ = .77, $\underline{p}$ < .001. All of the measurement instruments employed at both waves of this study possessed acceptable levels of internal consistency, and high temporal stability as suggested by Nunnally and Bernstein (1994).

Thirty six participants at wave one and 35 participants at wave two provided illustrative examples of self-esteem sources for positive and negative SSESS responses. The principal researcher and the Registered General Nurse who independently categorised the illustrative examples for each participant established inter-rater reliability of 89% and 92% for wave one and wave two, respectively. Ten percent of illustrative examples from both waves were not qualitatively classified within one of the eight possible sources of self-esteem.

8.3.2 Pearson Correlation Coefficients

Pearson correlation coefficients were calculated to determine the relationships between the total scores from each of the measurement instruments used, and also their relationships with age, RA disease duration, and erythrocyte sedimentation rate. Table 8.1 presents a matrix of the resulting correlation coefficients from data collected at wave one. Age, disease duration, and active coping were not significantly correlated to any other wave one variables and, therefore, are not displayed in Table 8.1.

Table 8.1

Matrix of wave one Pearson correlation coefficients

	ESR	Pain	AHI	HAQ	CESD	PC
ESR[1]	1.0					
Pain[2]	.39	1.0				
AHI[3]	.32	**.59****	1.0			
HAQ[4]	**.45***	**.55****	**.72****	1.0		
CESD[5]	.35	**.43***	**.58****	**.71****	1.0	
PC[6]	.27	**.52***	**.72****	**.76****	**.73****	1.0
SE[7]	-.35	-.40	**-.48***	**-.63****	**-.76****	**-.63****

*** = $p < .01$ ** = $p < .001$**

1 = Erythrocyte sedimentation rate; 2 = Pain as measured by the AIM-Pain scale; 3 = Arthritis Helplessness Index; 4 = Functional ability as measured by the Health Assessment Questionnaire; 5 = Depressive symptoms as measured by the CES-D; 6 = Passive coping subscale of the Vanderbilt Pain Management Inventory; 7 = Self-esteem as measured by the SSESS

As shown in Table 8.1, ESR was only significantly correlated with wave one functional ability. This demonstrates that increased ESR as a clinical measure of disease activity was significantly associated with greater functional disability. Also displayed in Table 8.1 was that increased reports of helplessness were significantly associated with increased reports of pain, and functional disability. Increased reports of passive coping strategies were also significantly associated with increased reports of functional disability, helplessness, and pain. Elevated scores of depressive symptoms on the CES-D at wave one were significantly associated with increased reports of helplessness, functional disability, passive coping strategies, and pain. Finally, the correlation matrix of wave one variables presented in Table 8.1 indicates that lower self-esteem scores as measured by the SSESS were significantly associated with increased reports of functional disability, depressive symptoms, passive coping strategies, and helplessness.

Table 8.2 presents a matrix of the resulting correlation coefficients from data collected at wave two. Age, disease duration, erythrocyte sedimentation rate, and active coping were not significantly correlated to any other wave two variables and, therefore, are not displayed in Table 8.2. As displayed in Table 8.2, the pattern of significant Pearson correlation coefficients for wave two variables is similar to the pattern from wave one presented in Table 8.1.

Table 8.2

Matrix of wave two Pearson correlation coefficients

	Pain	AHI	HAQ	CESD	PC
Pain[1]	1.0				
AHI[2]	**.51***	1.0			
HAQ[3]	**.71****	**.67****	1.0		
CESD[4]	**.47***	**.74****	**.70****	1.0	
PC[5]	**.61***	**.71****	**.73****	**.72****	1.0
SE[6]	-.35	**-.59***	**-.62****	**-.64****	**-.64****

*** = $\underline{p} < .01$ ** = $\underline{p} < .001$**

1 = Pain as measured by the AIM-Pain scale; 2 = Arthritis Helplessness Index; 3 = Functional ability as measured by the Health Assessment Questionnaire; 4 = Depressive symptoms as measured by the CES-D; 5 = Passive coping subscale of the Vanderbilt Pain Management Inventory; 6 = Self-esteem as measured by the SSESS

Elevated reports of helplessness were significantly associated with increased reports of pain, and functional disability. Increased reports of passive coping strategies were also significantly associated with increased reports of functional disability, helplessness, and pain. Elevated scores of depressive symptoms on the CES-D at wave two were significantly associated with increased reports of helplessness, functional disability, passive coping strategies, and pain. Finally, the correlation matrix of wave two variables presented in Table 8.2 indicates that lower self-esteem scores as measured by the SSESS were significantly associated with increased reports of functional disability, depressive symptoms, passive coping strategies, and helplessness.

8.3.3 Descriptive Statistics of Measurement Instruments

Table 8.3 presents the means and standard deviations (S.D.) for the measurement instruments at wave one and wave two.

Table 8.3

Descriptive statistics of measurement instruments at wave one and wave two

Measurement Instrument	**Wave One** mean (S.D.) range	**Wave Two** mean (S.D.) range
CES-D (depressive symptoms)	18.22 (9.52) 3-39	17.95 (9.34) 4-41
SSESS (self-esteem)	16.46 (4.80) 0-20	15.30 (5.10) 4-20
AIMS-Pain	2.05 (0.72) 0-3	1.77 (0.70) 0.5-3
HAQ (functional ability)	1.19 (0.59) 0.25-2.5	1.20 (0.67) 0-2.5
VPMI (passive subscale)	31.84 (8.19) 11-48	30.76 (8.57) 11-48
VPMI (active subscale)	20.68 (5.07) 7-31	21.84 (5.00) 7-30
AHI (arthritis helplessness index)	19.49 (5.14) 5-30	19.32 (5.22) 5-30

Erythrocyte sedimentation rate data collected for each participant corresponding with wave one of the questionnaire data had a mean of 37.70 mm/hour (standard deviation = 25.82), with a range from 2.0 to 99.0 mm/hour.

Preliminary analysis using t-tests showed that wave one and wave two mean total scores for each of the measurement instruments were not significantly different. One-way analysis of variance tests (ANOVA) revealed no significant differences between the NSAIDs participants and the DMARDs participants mean total scores on the variables measured at wave one and wave two. No significant differences were also obtained for the participants who had DMARDs added to their drug treat prior to wave two. Therefore, RA drug treatment did not influence scores of depressive symptoms, self-esteem, pain, coping strategies, functional ability, and helplessness as measured in this study.

Presented below are frequencies of the 36 participants at wave one and 35 at wave two, who provided illustrative examples of self-esteem generated by the SSESS and categorised within the eight possible sources. Also presented are specific illustrative examples from each of the eight sources of self-esteem:

Personal Interests: 17 at wave one and 13 at wave two. "I enjoy swimming and playing bridge, and meeting new people" (64 year old married male with RA).

Others: 16 at wave one and 18 at wave two. "I have a great social life, with lot's of good friends" (61 year old widowed female with RA).

Inner-self: 20 at wave one and 21 at wave two. "My sense of humour saves me, and my anger at arthritis. I will never give into it, I fight it all the time" (53 year old divorced female with RA).

Health: 8 at wave one and 11 at wave two. "I am still capable of doing most things around the house, in my own time. I still run our home" (53 year old married female with RA).

Personal Environment: 2 at wave one and 3 at wave two. "I am making plans for the future, like going on holiday to America, and preparing the house for spring" (64 year old married male with RA).

Family: 31 at wave one and 26 at wave two. "I love my wife and children, grandchildren and new great grandson. They are all so important to me" (66 year old married man with RA).

Work: 5 at wave one and 2 at wave two. "I contribute to planning decisions as a member of the local council" (57 year old married female with RA).

Illness: 10 at wave one and 9 at wave two. "When my pain is severe, I cannot do things for myself" (51 year old widowed female with RA).

8.3.4 Categorisation by Depressive Symptom and Self-Esteem Sources

Table 8.4 presents the number of participants whose scores fell into the appropriate cut-off points for depressive symptoms as measured by the CES-D, and levels of self-esteem as measured by the SSESS.

Table 8.4

Number of participants above the cut-off score for depression (CES-D scores above 16) and the number within three SSESS categories

Measurement Instrument	Wave One	Wave Two
CES-D		
non-depressed (0-15)	18	15
depressed (>16)	19	22
SSESS		
Low (0-9)	4	6
Medium (10-18)	16	17
High (19-20)	17	14

At wave one, 19 of the 37 participants (51%) were classified as depressed on the CES-D. At wave two, 22 of the 37 participants (59%) were classified as depressed on the CES-D. A Pearson chi-square test revealed that this increase in the number of participants reporting elevated symptoms of depression as measured by the CES-D was non-significant. Of the 19 depressed participants at wave one, 17 (89%) were female, while of the 22 depressed participants at wave two, 19 (86%) were female.

The ratios for the three levels of self-esteem reported in Table 8.4 are 11% low: 43% medium: 46% high for wave one, and 16% low: 46% medium: 38% high for wave two. At wave one and wave two, all of the low self-esteem participants (11% and 16%, respectively) were female. None of the seven male participants in this study were classified with low levels self-esteem.

8.3.5 Discriminant Function Analysis of Wave One Depression

A direct discriminant functional analysis was performed on cross-sectional data from wave one using eight predictor variables of membership in two groups. The first group represented participants who scored below 16 on the CES-D (non-depressed; n = 18) at wave one, while the second group represented participants who scored 16 or greater on the CES-D (depressed; n = 19) at wave one. The predictor variables were the eight sources of self-esteem (*personal interests, others, inner-self, health, personal environment, family, work,* and *illness*) provided by participants on the SSESS at wave one.

This analysis of cross-sectional data yielded a statistically significant discriminant function that maximally separated the two groups: X^2 (8) = 17.87, $p < .02$. As indicated in Table 8.5, the correlations of the predictors with the discriminant function suggests that three sources of self-esteem, *illness, health,* and *others* significantly distinguished the depressed participants from the non-depressed participants. These results indicate that significantly more depressed participants provided illustrative examples of *illness* as a source of low or negative self-esteem at wave one (n = 9), than non-depressed participants (n = 1). Also, significantly more non-depressed participants provided illustrative examples of *health* (n = 7), and *others* (n = 11) as sources of self-esteem at wave one than those classified as depressed (n= 1 and n = 5, respectively) by their CES-D scores.

Table 8.5

Results of discriminant function analysis of wave one depression

Predictor Variable (SSESS sources)	Correlation of predictor with discriminant function	Univariate F (1,35)
Illness	.604	9.97*
Health	-.506	7.01*
Others	-.425	4.92*
Inner-self	-.158	0.68
Family	-.154	0.65
Work	.078	0.17
Personal Interests	.033	0.03
Personal Environment	-.007	0.02

* = $p < .01$

Using sample proportions as prior probabilities, this discriminant function correctly classified 81 percent of the 37 participants. Sixteen of the 19 depressed participants (81%), and 14 of the 18 non-depressed participants were correctly classified. The eigenvalue was 0.78 for this discriminant function. Although the overall classification rate of 81% does not fully explain the nature of group differences, the canonical correlation of .66 indicates that the three significant wave one variables are marginally important predictors of depressed versus non-depressed participants at wave one of this study.

8.3.6 Discriminant Function Analysis of Wave Two Depression

To go beyond the previous qualitative findings, a direct discriminant function analysis was preformed on the quantitative data collected at wave one and wave two using seven predictors of membership in two groups. The first group represented participants who scored below 16 on the CES-D (non-depressed; n = 15) at wave two, while the second group represented participants who scored 16 or greater on the CES-D (depressed; n = 22) at wave two. The seven wave one predictor variables were: (1) total scores from the SSESS, (2) total scores from the AIMS - Pain scale, (3) total active coping scores from the VPMI, (4) total passive coping scores from the VPMI, (5) total scores of functional ability from the HAQ, (6) total scores from the AHI, and (7) erythrocyte sedimentation rate (ESR) as a clinical measure of disease activity.

This analysis yielded a statistically significant discriminant function that maximally separated the two groups: X^2 (7) = 17.92, $p < .02$. As presented in Table 8.6, the correlations of the predictors with the discriminant function suggests that self-reports of pain, helplessness beliefs, passive coping and self-esteem were predictor variables measured at wave one that significantly distinguished depressed from non-depressed participants six months later.

These results indicate, firstly, that the depressed participants at wave two had significantly higher wave one self-report pain scores (mean = 2.32) than the non-

depressed participants (mean = 1.67) as measured by the AIMS-P scale. Secondly, this analysis demonstrates that wave one self-reports of arthritis helplessness were significantly higher for the depressed participants (mean = 21.27) than non-depressed participants (mean = 16.87) as measured by the AHI. Thirdly, depressed participants reported significantly greater passive coping strategies at wave one (mean = 34.64) than non-depressed participants (mean = 27.73) as measured by the VPMI. Finally, this analysis demonstrated that self-esteem measured six months previously was significantly higher for non-depressed participants (mean = 18.40) than depressed participants (mean = 15.14) as measured by the SSESS.

Table 8.6

Results of discriminant function analysis of wave two depression

Predictor Variable	Correlation of predictor with discriminant function	Univariate F (1,35)
AIMS - Pain	.738	8.77**
AHI (helplessness)	.696	7.81**
VPMI Passive coping	.682	7.48**
SSESS (self-esteem)	-.530	4.53*
HAQ-functional ability	.461	3.42
VPMI Active coping	-.283	1.29
ESR	.241	0.93

* = $p < .05$ ** = $p < .01$

Using sample proportions as prior probabilities, this discriminant function correctly classified 83 percent of the 37 participants. Nineteen of the 22 depressed participants (86.5%) and 12 of the 15 non-depressed participants (80%) were correctly classified. The eigenvalue was 1.46 for this discriminant function. Although the overall classification rate of 83% does not fully explain the nature of the group differences, the canonical correlation of .76 indicates that the four significant wave one variables are important predictors of depressed versus non-depressed participants at wave two of this study.

8.3.7 Predictive Analyses of Wave Two Variables

To evaluate the predictive role of the SSESS as a measure of self-esteem in RA, a series of hierarchical multiple regression analyses were performed. For each regression equation, information collected at wave one was used to predict criterion variables from wave two. The wave one predictor variables included: (1) age of participants in years, (2) RA disease duration in years, (3) erythrocyte sedimentation rate (ESR) (4) SSESS scores, (5) CES-D scores, (6) AIMS - Pain scores, (7) HAQ score as an index of functional ability, (8) passive coping scores of the VPMI, and (9) AHI scores. Gender of participants and active coping strategies as measured by the VPMI were not used as predictor variables in this study. Subgroups of predictor variables were entered in steps to the regression equations to enable the most important variables to be scrutinised before self-esteem as an exploratory variable (of the *antecedent hypothesis*).

The wave two criterion variables used test the *antecedent hypotheses* in the hierarchical multiple regression analyses were: (1) depressive symptoms as measured by the CES-D, (2) subjective reports of RA pain as measured by the AIMS-Pain scale, (3) functional ability as measured by the HAQ. Self-esteem measured at wave two was the criterion variables in the final analysis testing the *consequence hypothesis.*

The first regression analysis, with wave two CES-D scores as the criterion had the nine wave one predictor variables entered into the equation in one of the following four steps: (1) wave one CES-D scores, (2) age, RA disease duration, ESR, and functional disability, (3) pain, helplessness, and passive coping, and (4) self-esteem. Table 8.7 provides a summary of this regression analysis.

Table 8.7

Predictors of wave two depressive symptoms

Variable	Step	R	R^2 (adj)	F (df)
CES-D	1	.612	.38 (.36)	F(1,35)=20.97*
Age D.Duration ESR HAQ	2	.726	.53 (.45)	F(5,31)=6.91*
Pain Helplessness Passive	3	.772	.60 (.48)	F(8,28)=5.16*
Self-esteem	4	.786	.62 (.49)	F(9,27)=4.86*

* = $p < .001$

As displayed in Table 8.7, depressive symptoms at wave one significantly predicted 36% of the variance in wave two depressive symptoms as measured by the CES-D. After statistically controlling for wave one depressive symptoms, the combination of step 2 variables accounted for 9% of the variance in wave two depressive symptoms. Of these variables, only RA disease duration was found to be uniquely negatively related to depressive symptoms (t (31) = -2.13, $p < .05$). On step 3, the combination of pain, helplessness and passive coping contributed an additional 3% of the variance of depressive symptoms. Of this group of variables only passive coping independently predicted depressive symptoms at wave two (t (28) = 2.11, $p < .05$). Although self-esteem accounted for a further 1% of the variance, this was a not a significant contribution to the variance of wave two depressive symptoms.

This analysis indicates, firstly, that prior depressive experiences significantly predicted depressive symptoms six months later. Secondly, based on the negative standardised regression coefficient for disease duration (*beta* = -.29), this analysis suggests that longer RA disease duration was associated with lower depressive symptoms at wave two. Thirdly, significant evidence was found to suggest that prior passive coping strategies exacerbated wave two depressive symptoms. Although 49 percent of the variance in CES-D scores was accounted for, no evidence was found to suggest that wave one self-esteem scores independently predicted subsequent reports of depressive symptoms.

The second regression analysis, with wave two AIMS - Pain scores as the criterion had the nine wave one predictor variables entered into the equation in the following four steps: (1) wave one AIMS - Pain scores, (2) age, RA disease duration, ESR, and functional disability, (3) depressive symptoms, helplessness, and passive coping, and (4) self-esteem. Table 8.8 provides a summary of this regression analysis.

Table 8.8

Predictors of wave two pain reports

Variable	Step	R	R^2 (adj)	F (df)
AIMS-Pain	1	.489	.24 (.22)	F(1,35)=10.98**
Age D.Duration ESR HAQ	2	.616	.38 (.28)	F(5,31)=3.79*
Depression Helplessness Passive	3	.655	.42 (.27)	F(8,28)=2.63*
Self-esteem	4	.703	.49 (.33)	F(9,27)=2.93*

* = $p < .05$ ** = $p < .001$

As displayed in Table 8.8, subjective reports of pain at wave one significantly predicted 22% of the variance in wave two pain scores as measured by the AIMS - Pain scale. After statistically controlling for wave one pain scores, the combination of step 2 variables accounted for 7% of the variance in wave two

pain scores. Of these variables, only the HAQ as a measure of functional ability was found to be uniquely related to subsequent pain reports (t (31) = 2.05, p < .05). Self-esteem accounted for an additional 5% of the variance, but this was not a significant independent contribution to the prediction of wave two pain reports. This analysis indicates that prior reports of RA pain significantly predicted subjective reports of pain six-months later. Based upon the standardised regression coefficient for HAQ scores (*beta* = .28), this analysis also demonstrated that participant's scoring high on the HAQ, suggesting increased functional disability at wave one, reported higher pain scores at wave two. Although 33 percent of the total variance in pain scores was accounted for, no statistical evidence was found to suggest that any variables at step 3, nor self-esteem at step 4 independently predicted wave two pain reports.

The third regression analysis, with wave two HAQ scores as the criterion had the nine wave one predictor variables entered into the equation in the following four steps: (1) wave one HAQ scores, (2) age, RA disease duration, and ESR, (3) depressive symptoms, helplessness, pain, and passive coping, and (4) self-esteem. Table 8.9 provides a summary of this regression analysis.

Table 8.9

Predictors of wave two functional ability

Variable	Step	R	R^2 (adj)	F (df)
HAQ	1	.684	.47 (.45)	F(1,35)=30.85**
Age D.Duration ESR	2	.688	.47 (.41)	F(4,32)=7.14**
Depression Pain Helplessness Passive	3	.747	.54 (.41)	F(8,28)=4.15*
Self-esteem	4	.783	.62 (.51)	F(9,27)=4.76**

* = $p < .01$ ** = $p < .001$

As displayed in Table 8.9, self-reports of functional ability at wave one significantly predicted 45% of the variance in HAQ scores at wave two. After statistically controlling for wave one HAQ scores, only self-esteem at step 4 independently predicted 6% of the variance in functional ability scores at wave two (t (27) = 2.22, $p < .05$). This regression equation accounted for a total of 51 percent of the variance in functional ability scores. Based on the negative standardised regression coefficient for self-esteem (*beta* = -.31), this analysis indicates that after controlling for other variables (including ESR, pain and depression) lower self-esteem scores at wave one were uniquely related to increased reports of functional disability at wave two.

The fourth and final regression analysis, with wave two SSESS scores as the criterion had the nine wave one predictor variables entered into the equation in the following three steps: (1) wave one SSESS scores, (2) age, RA disease duration, ESR, HAQ and (3) depressive symptoms, helplessness, pain, and passive coping. Table 8.10 provides a summary of this regression analysis.

Table 8.10

Predictors of wave two self-esteem

Variable	Step	R	R^2 (adj)	F (df)
SSESS	1	.791	.63 (.61)	F(1,35)=58.70*
Age D.Duration ESR HAQ	2	.851	.72 (.68)	F(5,31)=16.29*
Depression Helplessness Pain Passive	3	.877	.77 (69)	F(9,27)=9.98*

* = p < .001

As displayed in Table 8.10, self-esteem measured at wave one significantly predicted 61% of the variance in self-esteem scores at wave two as measured by the SSESS. After statistically controlling for wave one self-esteem, the combination of step 2 variables accounted for 8% of the variance in wave two SSESS scores. Of this group of variables, prior reports of functional ability as measured by the HAQ (t (31) = -2.75, p < .01), and erythrocyte sedimentation rate

($\underline{t}$ (31) = 2.30, $\underline{p}$ < .05), independently predicted self-esteem at wave two. Based on the negative standardised regression coefficient for HAQ (*beta* = -.30) and ESR (*beta* = -.27), this analysis suggests that higher ESR as a clinical measure of RA disease severity, and increased reports of functional disability as measured by the HAQ are associated with lower self-esteem at wave two. Although this analysis accounted for 69 percent of the variance in SSESS scores, independently none of the step 3 variables significantly predicted self-esteem at wave two.

8.4 Discussion

In this study the test-retest reliability of the Southampton Self-Esteem and Sources of Self-Esteem Scale (SSESS) was tested to determine if self-esteem scores were stable over time. The significant correlation of self-esteem reports from the two waves of data collection demonstrates the reliability of this implicit measure of self-esteem over time. In addition, the non-significant difference between wave one and wave two mean total SSESS scores suggests that for the long-term RA participants of this study, the personality variable of global self-esteem was consistent over a six-month interval. The test-retest reliability of the SSESS and the temporal stability of its self-esteem total scores in this study involved only a six-month period of time, but they reflect the findings of Coleman (1993) and Coleman et al. (1993) who reported consistent and reliable SSESS results for older persons over many years.

The other variables measured by self-report questionnaires at both waves of data collection, including depressive symptoms (CES-D), arthritis pain (AIMS-Pain), functional ability (HAQ), active and passive coping strategies (VPMI), and arthritis helplessness (AHI) also demonstrated high test-retest reliability. In addition, all of these variables demonstrated consistent mean total scores at the two waves of data collection. This indicates that the participants of this study in general experienced no significant fluctuations in pain perceptions, depressive symptoms, pain-coping strategies, functional ability and helplessness beliefs over the six-month interval.

The distribution of participant's by level of self-esteem at waves one and two presented in Table 8.4 are similar to the average frequencies of 43% high, 52% medium, and 4% low levels of self-esteem reported by Coleman et al. (1993) for older non-RA individuals. Also presented in Table 8.4 is the number of participants who reported elevated depressive symptoms (CES-D scores of 16 or greater) at both waves of data collection. The prevalence rates of 51 and 59 percent of participants from wave one and wave two respectively, is considerably higher that the 20 percent figure for depressive symptoms in RA reported by Creed (1990). Of particular interest is the high prevalence rate for elevated symptoms of depression reported by female RA participants in this study. Although this finding could be confounded by the predominance of female participants, previous research has reported that females report

significantly higher levels of depressed mood than males (Davison & Neale, 1994; Newman et al., 1989).

The results of the wave one cross-sectional discriminant function analysis suggest that *illness* as an illustrative example of a negative source of self-esteem, as well as *health* and *others* as illustrative examples of self-esteem significantly distinguished depressed from non-depressed participants. Those who reported elevated symptoms of depression at wave one made more references to pain, functional disability or difficulties with aspects of daily living (*illness*) on the SSESS than participants classified as non-depressed. Moreover, non-depressed participants made more references to the lack of infirmary and the ability to complete essential aspects of daily living (*health*) than depressed participants. In addition, non-depressed participants provided more illustrative examples of other interpersonal relationships (*others*) than those classified as depressed at wave one. These qualitative results partially replicate the findings of Coleman and colleagues, who reported *others* as a source of self-esteem essential for positive self-evaluations and maintenance of psychological well-being in older adults (Coleman et al., 1993).

Four wave one variables significantly distinguished depressed from non-depressed participants at wave two in the longitudinal discriminant function analysis. Those participants classified as depressed at wave two reported

significantly greater pain reports, increased arthritis helplessness and passive coping strategies, as well as lower self-esteem at wave one than non-depressed participants. Pain is arguably the most important subjective symptom of RA (Parker, et al., 1988), for previous research has reported that pain can have a profound effect on the quality of life of those who suffer from the disease (Skevington, 1993). In this study, depressive symptoms have been elevated by prior reports of the frequency and severity of RA pain. The combination of prior reports of perceived helplessness and passive coping strategies also significantly distinguished depressed from non-depressed participants in this analysis. Numerous other studies have demonstrated the significant increase in depressive symptoms as a result of helplessness and passive coping methods (Brown et al., 1989; Newman & Revenson, 1993; Nicassio et al., 1985; Smith et al., 1994; Stein et al., 1988). Finally, this analysis suggests that self-esteem was significantly lower at wave one for those classified as depressed compared to non-depressed individuals at wave two. Although the role of low self-esteem in the development of elevated symptoms of depression is disputed, the results of this analysis suggest that self-esteem, in addition to the three other psychological factors, accurately classified 83 percent of the depressed and non-depressed participants of this study.

No evidence was found to support the *antecedent hypothesis* of self-esteem predicting subsequent reports of depressive symptoms. After controlling for

prior symptoms of depression, only passive coping strategies and disease duration independently predicted depressive symptoms measured six-months later. This finding supports the general conclusions associated with major clinical depression of Lewinsohn et al. (1981), who reported that vulnerability to depression is not the direct result of self-esteem reports. Within this analysis, psychological mood was not a pain-dependent process, contrary to the conclusions of Afflect et al. (1992), and Brown (1990). Although this analysis failed to support Skevington's (1993b) argument that self-esteem is an independent predictor of depression in RA, the results are consistent with this author and others who have demonstrated the causal influence of passive coping strategies on depressive symptoms in RA (Brown et al., 1989; Smith & Wallston, 1992). Disease duration predicting subsequent depressive symptom scores of the long-term RA participants within this study is a result consistent with Newman et al. (1989) who reported that longer RA disease duration was associated with lower depressive symptoms.

There was also no evidence to support the *antecedent hypothesis* of self-esteem predicting subsequent reports of RA pain. After controlling for prior pain reports, only functional disability as a behaviourial index independently predicted subjective reports of pain measured six-months later. In support of conclusions drawn by Brown (1990), no causal relationship was found for depressive symptoms predicting subsequent perceptions of RA pain.

The final hierarchical regression analysis testing the *antecedent hypothesis* of self-esteem predicting subsequent reports of RA functional ability was supported. After controlling for prior reports of functional ability, demographic, disease activity (ESR), depression, pain, helplessness beliefs and passive coping strategies, self-esteem independently predicted six percent of the variance in subsequent reports of functional disability as measured by the HAQ. This indicates that low self-esteem as measured by the SSESS was an antecedent of functional disability reported six-months later.

The *consequence hypothesis* was tested to determine which variables independently predicted subsequent self-esteem reports. After statistically controlling for prior self-esteem, only functional ability and ESR as an objective measure of RA severity independently predicted eight percent of the variance in self-esteem scores six-months later. Therefore, self-esteem was a consequence of these two variables measured six-months previously.

In conclusion, the results of the hypothesis testing within this study propose that self-esteem is independently influenced by and has an independent effect on the functional ability of individuals with RA. Based upon these findings, the predictive role of self-esteem for long-term RA patients has a behaviourial component. Limitations, implications, as well as research and theoretical ideas generated by this study are presented in chapter nine.

CHAPTER NINE

GENERAL DISCUSSION AND CONCLUSIONS

9.1 Summary of the Three Studies

In the absence of a definitive aetiology and successful treatments for rheumatoid arthritis (RA), the focus of this research was on the psychological factors associated with the disease. Although personality factors related to the onset of RA have been discredited (Anderson et al., 1985; Young, 1992), the three studies of this thesis have examined the quantitative and qualitative aspect of self-esteem, thus adding to the growing body of knowledge associated with the psychological adjustment to this chronic autoimmune disorder. This research possessed the following advantages over traditional personality investigations within RA. The use of reliable measurement instruments validated by other researchers, the inclusion of demographic and disease related variables from more homogeneous RA outpatient groups, as well as a focus upon both adaptive and maladaptive factors. Finally, the longitudinal study reduced the emphasis upon retrospective data and evaluated the predictive role of self-esteem reports.

The three studies presented have concentrated upon specific subgroups of the diverse RA population, which does not allow for direct comparison of their results. Answering research questions presented in chapter five does provide an opportunity to review and generally discuss the experimental findings.

The first question asks, are symptoms of depression prevalent in RA? All three studies demonstrated a high prevalence rate for symptoms of depression. Over 90 percent of the older RA participants within study 1 reported mild symptoms of depression for the previous 30 days as measured by the Geriatric Depression Scale (GDS), while 20 percent reported moderate/severe depressive symptoms on the GDS. This was similar to the findings of Creed (1990), and was significantly higher than the two percent of non-RA control participants who reported moderate/severe depressive symptoms. In study 2, 76 percent of the participants with amyloidosis as a consequence of RA reported elevated symptoms of depression for the previous seven days on the Center for Epidemiological Studies Depression Scale (CES-D). Furthermore, 56 percent of the RA-only participants within this study reported elevated depressive symptoms based on their CES-D scores. In study 3, over 50 percent of the participants reported CES-D scores above the cut-off point for elevated symptoms of depression at both times of assessment. In summary, the depressive symptomatology reported by RA-only participants within study 2 and study 3 are marginally higher than the 46 percent prevalence reported by Brown and Wallston (1989).

Above and beyond the psychological variables focused upon in this research, an interpretation of these high prevalence rates of depressive symptoms is a complex task and one which should be addressed by additional research. One

recent approach to the prevalence of depression in RA suggests that this autoimmune disorder leads to changes in hormonal activity and immunology problems that trigger biological changes of the hypothalamic-pituitary-adrenal axis which can cause depressed mood (Zautra et al., 1994). This proposed relationship between the autoimmunity of RA and depression challenges previous arguments (Creed, 1990; Newman et al., 1989) that depression is not directly related to the disabling disease process of RA.

The second question asks, are depressive symptoms associated with RA disease duration? Study 1 and study 3 present contradictory findings of relevance to this question. In study 1, with elderly RA outpatients (mean age = 72 years) who had RA for an average of 11.5 years, there was a significant correlation between reports of depressive symptoms and disease duration. Indicating that longer RA disease duration was associated with increased depressive symptoms. In study 3, with long-term RA outpatients (mean age = 58 years) who had RA for an average of 16 years, disease duration significantly predicted nine percent of wave two depressive symptom scores. This study suggests that longer RA disease duration was associated with lower depressive symptom scores. The inverse relationship between disease duration and depressive symptoms in this study concur with the findings of Newman et al. (1989) who proposed that as time passes an individual adjusts to the illness with a subsequent reduction in depressed mood. The findings of study 1 which are contrary to this suggest that

the process of psychological adjustment to RA over time for elderly adults may be different from the process experienced by those relatively younger. Additional research is needed to investigate the biological and psychological mechanisms of how elderly adults with RA adjust over time to the illness.

The third question asks, are depressive symptoms elevated by the pain of RA? Subjective pain reports and depressive symptom scores were not significantly correlated in study 2. The interesting findings from this study were that symptoms of depression was not a variable that significantly distinguished the amyloid from RA-only participants, the latter group reported higher pain scores. Within this between group cross-sectional study, pain reports did not, however, predict depressive symptoms scores. In study 3, subjective reports of RA pain and depressive symptom scores were significantly correlated at both times of assessment. Pain reports were one of four variables measured at wave one that significantly distinguished depressed from non-depressed participants six-months later. Wave one pain reports did not, however, independently predict wave two depressive symptom scores. In conclusion, the results of this longitudinal study suggest that perceptions of RA pain are an important contributor to subsequent reports of elevated depressive symptoms. In contrast to both Afflect et al. (1992) and Brown (1990), the results of this study demonstrated that depressed mood is not solely a pain-dependent process.

The fourth question asks, are coping strategies an important aspect of living with RA? Active and passive coping strategies were negatively correlated in study 2, but neither significantly distinguished the amyloid and RA-only participants. Nevertheless, passive coping strategies did account for 9 percent of the variance in depressive symptoms scores within this study. In addition, 56 percent of the variance in passive coping scores were predicted by depressive symptoms, fewer reports of active coping, and increased reports of RA pain. In study 3, wave one passive coping strategies were one of four variables that significantly distinguished depressed from non-depressed participants at wave two. The other interesting finding from this study was that wave one passive coping scores independently predicted three percent of the variance in subsequent depressive symptom scores, after controlling for wave one depressive symptoms, demographic, erythrocyte sedimentation rate (ESR), and functional ability scores. These results suggest that passive attempts to mediate the inflammation, pain and stiffness of RA, such as wishful thinking, relying on others and restricting social activities are influential in the development of future depressive experiences.

The fifth questions asks, is learned helplessness a consequence of RA? Due to the psychometric problem of unacceptable measurement error associated with the Arthritis Helplessness Index (AHI) in study 2, an answer to this question is offered only from the data of study 3. At both assessments, helplessness beliefs

were significantly correlated with reports of pain, functional disability, depressive symptoms and passive coping, while significantly correlated in a negative manner with self-esteem. Helplessness scores were not, however, correlated with ESR as an objective measure of RA disease severity. In addition, helplessness beliefs were one of four variables measured at wave one which significantly distinguished depressed from non-depressed participants at wave two. Helplessness beliefs measured six-months previously helped distinguish depressed from non-depressed RA participants. There is insufficient evidence from these results, however, to conclude that helplessness is a direct consequence of RA.

The sixth questions asks, is social support an aspect of RA management? Although social support was not quantitatively measured in the present research, the answer to this question is derived from illustrative examples of sources of self-esteem provided by participants on the SSESS. One of the interesting findings of the present research was that the majority of participants reported that *family* was a source of self-esteem. Therefore, this qualitatively coded source of self-esteem was not a significant variable in any of the between group analyses. A second finding was that *others* as a qualitatively coded source of self-esteem did, however, significantly distinguish between groups. In study 1, older adults with RA provided significantly fewer illustrative examples of *others* as a source of self-esteem than older non-RA adults. In study 3, non-depressed

participants at wave one provided significantly more references to *others* than depressed participants. In general, these qualitative results suggest that family members and relationships with others as forms of social support are important sources of self-esteem. In particular, these results suggest that *others* as a source of self-esteem related to more developed social support networks outside the family for older non-RA adults, and those with RA not reporting elevated symptoms of depression.

The final question asks, is self-esteem affected by RA? The older adults with RA from study 1 reported significantly lower self-esteem scores than non-RA adults. In addition, more participants from this latter control group provided illustrative examples of *inner-self*, *personal interests*, *health*, and *others* as sources of self-esteem than participants from the RA group. In study 2, the amyloid participants reported significantly lower self-esteem scores and fewer qualitative references to *inner-self* as a source of self-esteem than RA-only participants. In this study self-esteem scores predicted just over 60 percent of the variance in depressive symptom scores, indicating that global self-esteem was an important aspect of depressed mood in RA and amyloidosis. In study 3, *illness*, *health*, and *others* were qualitative sources of self-esteem that significantly separated depressed from non-depressed participants at wave one. Non-depressed participants provided fewer references to *illness* and more references to *health* and *others* as sources of self-esteem. Secondly, wave one

self-esteem scores were one of four quantitative variables that significantly distinguished depressed from non-depressed participants at wave two. The third finding suggests that self-esteem scores were not independent predictors of subsequent reports of depressive symptoms, or pain perceptions, but they were direct antecedents of functional disability. Finally, the results of study 3 indicate that self-esteem scores were independently predicted by reports of functional disability, and ESR as a clinical measure of RA disease activity. It is interesting that ESR independently predicted self-esteem scores but that this measure of RA activity was not independently related to depressive symptom scores. Self-esteem is defined as the cognitive process in which an individual perceives characteristics of themselves as well as the affective and behaviourial reactions to those characteristics. The findings of this study demonstrate that the behaviourial aspects of self-esteem play an important role within RA.

9.2 Limitations of this Research

In addition to methodological problems previously discussed in the thesis, there are a number of general concerns that could be construed as limitations of this research. Firstly, there were several demographic parameters that were not included in the three studies. Socioeconomic factors were not measured and may play a role in the successful adaptation to RA. Level of formal education was measured in the three studies, but was not employed as a variable in any of

the analysis. A related variable not, however, measured in this research was the classification of the participants occupation.

Although marital status was measured in the three studies of this thesis, it too was not employed in the analyses of this research. The domestic living arrangements of the participants was not, however, measured. This demographic variable may have had an influence on the extent to which participants cited family and others as sources of self-esteem. Living alone may increase the need for home help support, which could reinforce an individual's inability to perform essential aspects of daily living, and therefore decrease their positive self-evaluations.

Due to the focus on psychological variables in the present research, only one clinical measure of RA disease activity (ESR) was measured and employed in the analyses of study 3. Other objective measures that may have been of interest to the present research include rheumatoid factor and C-reactive protein, which are clinical features similar to ESR in that they are associated with the pathology of RA. Current RA disease activity could have also been assessed by joint tenderness (Ritchie, Boyle & McInnes, 1968), and the extent of joint erosion (Lawrence, 1977). Although these are all important aspects of RA as an inflammatory disease, attention to these variables would have changed the focus of this research.

The absence of comprehensive measures of the behaviourial features of individuals affected by RA is another limitation of this research. Previous research has reported that reduced grip strength is associated with increased depressed mood in RA (Newman et al., 1989). In addition to the use of the Health Assessment Questionnaire (HAQ) as a self-report index of functional ability, other measures such as the Functional Limitation Profile (Patrick, Morgan & Charlton, 1986) may have facilitated in the understanding of the role played by behaviourial features in the evaluation of self-esteem and depressive symptoms associated with RA.

Due to the importance of pain perceptions in RA, other features of this subjective variable could have been considered. For example, the severity and frequency of morning stiffness was not assessed in this research, even though it is one of four items of the Arthritis Impact Measurement Pain Scale (Meenan et al., 1982). A visual analogue scale of pain intensity as used by other researchers (Brown & Nicassio, 1987) may have been an economical way of determining the construct validity of pain perceptions in this research.

Another possible limitation involves the measurement of depression within the present research. The Geriatric Depression Scale (GDS) and the Centre for Epidemiological Studies Depression Scale (CES-D) are commonly used self-report measures of depressive symptoms, but they are not diagnostic

measurement instruments that specifically reflect the DSM IV or ICD-10 definitions of clinical depression (DeVellis, 1993; Zimmerman & Coryell, 1994). Therefore, the classification of participants as "depressed" and "non-depressed" based on elevated GDS or CES-D scores in the three studies of this thesis could be viewed as problematic (Rose, 1992). Due to the lack of standardised measurement for symptoms of depression or sub-threshold depression, the limitations of evaluating depressive symptoms and recognising individuals as depressed cases with the GDS and CES-D could perhaps have been overcome with the use of criteria for the diagnosis of clinical depressive disorders.

The final major limitation of this research concerns the use of self-esteem as a unitary concept of personality. Global self-esteem as measured by the SSESS within this thesis may be helpful for examining the evaluative component of the self-concept, but can global self-esteem account for all affective, behaviourial and cognitive aspects of an individual's experiences? Albert Bandura (1986) states that judgements of self-esteem and self-capability have no uniform relationship, even though an individual's self-evaluation may affect their outlook towards life. Bandura (1986) argues that theories of global self-evaluation have limited power in explaining and predicting how people are likely to behave in particular situations. Global self-evaluation does not do justice the complexity of people's judgements of their capabilities to organise and execute actions to attain designated types of performances (self-efficacy), which varies across

different activities and circumstances (Bandura 1977; 1986). In short, Bandura asserts that global self-evaluations, including self-esteem, cannot specifically account for diverse types of behaviours. Bandura (1986) does, however, conclude that both self-esteem and self-efficacy contribute in their own way to the quality of human life.

9.3 Directions for Future Consideration

It is important that future research focus upon the psychological adjustment of more homogeneous groups of the diverse RA population. Although methodological issues, time constraints of participants involved in data collection and statistical procedures are important concerns of the research process, future studies should consider multiple measures of affective, behaviourial, cognitive and physiological factors in order to develop a more comprehensive understanding of the impact of RA.

In order to further understand research questions presented in this thesis, future studies should be directed towards the following issues: Do coping strategies, helpiessness beliefs, pain reports, functional ability, disease severity and self-esteem influence subsequent reports of depressive symptoms (over six-months) for elderly adults with RA, and individuals with amyloidosis as a consequence of RA? In light of the incomplete management of RA available from medical procedures, can cognitive-behaviourial treatments that focus on coping skills and

functional ability lead to improvements in positive self-evaluations and mood? An area worthy of consideration is the creation of an education programme for rheumatologists and other arthritis health-care professionals to increase their knowledge of psychological and social factors associated with RA. Research studies in future could employ the Chronic Pain Self-Efficacy Scale (Anderson, Dowds, Petletz, Edwards & Rieters-Asdourian, 1995) to further address the impact of specific behaviours and depressive symptoms in RA. Finally, additional research is required to determine the possible effects of changes in immunology associated with depression and RA.

9.4 General Implication of this Research

Based upon self-report information from the participants within the three studies presented in this thesis, symptoms of depression are prevalent in RA. One of the important implications, therefore is the need for increased psychological assessment in RA out-patient clinics. Acting in anticipation of elevated symptoms of depression may be more effective in the long run than referring depressed RA patients to liaison psychiatry. Also, for the prevention of depression-related disabilities in RA to be effective, attention must not solely be directed towards the *disease-distress* dichotomy of depression (Brown, Craig & Harris, 1985), but also towards the individuals within the community who report symptoms of depression (Rose, 1992). Moreover, adding anti-depressive medication to individuals with RA treatment regimes to help manage depressive

experiences is a debatable procedure. Especially in regards to the critical issue of non-compliance with medication for RA (Daltroy, 1993), and is also contrary to the idea that drug treatment for RA should be kept as simple as possible (Hickling & Golding, 1986). Self-management programmes that focus on education, active coping and positive self-evaluations must also be considered in the treatment of RA.

At the pragmatic level, pain management programmes for individuals with RA that are the domain of clinical psychology may find the data generated by the SSESS helpful. Cognitive-behaviourial therapies used for the reduction of pain perceptions and the increase of active pain-coping strategies could employ the quantitative and qualitative findings of the SSESS as a point of departure for therapeutic goals. With reference to the evaluative dimension of the self-concept, clinicians and arthritis health-care professionals may further understand the personal patterns and tendencies that are characteristic of each individual. By understanding the interaction between physiological, affective, behaviourial, cognitive and social factors of RA, intervention programmes can then offer ways in which personal functioning can be accommodated, managed and improved (James & Minichiello, 1994).

A holistic approach to the treatment of RA is needed that focuses upon the psychological issues, including symptoms of depression as well as self-

evaluations that are affected by the pain and functional disability of the disease. In the absence of definitive aetiology and successful treatments, RA is less than adequately managed by the biomedical model. Incorporating the biopsychosocial model into the practice of rheumatology with regular evaluations of depressive symptoms, self-esteem and behaviourial factors can help arthritis health-care professional distinguish factors associated with adaptation to the illness from aspects of the physical disease (Shipley & Newman, 1993). There is a growing trend within rheumatology to recognise and acknowledge the biopsychosocial aspects of disability in RA. The first symposium on biopsychosocial models in RA was recently held at the 1995 National Scientific Meeting of the American College of Rheumatology (Schoenfled-Smith, Petroski, Hewet, Johnson, Wright, Smarr & Parker, 1995). Incorporating psychological and social dimensions with the biological factors of health and illness can help heath-care professionals more accurately understand the RA disease process, therefore leading to interventions that enhance patients adaptation to the illness and improve the quality of their lives.

REFERNECES

Affleck, G.A., Pfeiffer, C., Tennen, H., & Fifield, J. (1988). Social support and psychological adjustment to rheumatoid arthritis. *Arthritis Care and Research*, **1**, 71-77.

Affleck, G.A., Tennen, H., Urrows, S., & Higgins, P. (1992). Neuroticism and the pain-mood relation in rheumatoid arthritis: Insights from a prospective daily study. *Journal of Consulting and Clinical Psychology*, **60**, 119-126.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; 4th edition), Washington, DC: APA.

Anderson, K.O., Bradley, L.A., Turner, R.A., Agudelo, C.A., Pisko, E.J., Salley, A.N., & Fletcher, K.E. (1992). Observation of pain behaviour in rheumatoid arthritis patients during physical examination. *Arthritis Care and Research*, **5**, 49-56.

Anderson, K.O., Bradley, L.A., Young, L.D., & McDaniel, L.K. (1985). Rheumatoid arthritis: Review of the psychological factors related to etiology, effects and treatment. *Psychological Bulletin*, **98**, 358-387.

Anderson, K.O., Dowds, B.N., Petletz, R.E., Edwards, W.T. & Rieters-Asdourian, C. (1995). Development and initial validation of a scale to measure self-efficiay beliefs in chronic pain patients. *Pain*, **63**, 77-84.

Andrews, B. & Brown, G.W. (1993). Self-esteem and vulnerability to depression: The concurrent validity of interview and questionnaire measures. *Journal of Abnormal Psychology*, **102**, 565-572.

Arnett, F.C., Edworthy, S.M., & Bloch, D.A. (1988). The American Rheumatism Association 1987 classification of rheumatoid arthritis. *Arthritis and Rheumatism*, **31**, 315-323.

Arthritis Care (1995). *Information For People with Arthritis.* London: Arthritis Care.

Bandura, A. (1977). Self-efficay: Towards a unifying theory of behaviour change. *Psychological Review*, **84**, 191-215.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Barnett, P.A., & Gotlib, I.H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants and consequences. *Psychological Bulletin*, **104**, 97-126.

Beatty, J. (1995). *Principles of Behavioural Neuroscience*. London: Brown & Benchmark.

Beck, A.T. (1967). *Depression: Clinical, Experimental and Theoretical Aspects.* London: Staples.

Beck, A.T. (1972). *Depression: Causes and Treatment*. Philadelphia: University of Philadelphia Press.

Beckham, J.C., Keefe, F.J., Caldwell, D.S., & Roodman, A.A. (1991). Pain coping strategies in rheumatoid arthritis: Relationships to pain, disability, depression and daily hassles. *Behaviour Therapy*, **22**, 113-124.

Bishop, D. (1987). Depression, anxiety and rheumatoid arthritis activity. *Clinical Experimental Rheumatology*, **5**, 147-150.

Blalock, S.J., DeVellis, R.F., Brown, G.K., & Wallston, K.A. (1989). Validity of the Centre for Epidemiological Studies Depression Scale in arthritic populations. *Arthritis and Rheumatism*, **32**, 991-997.

Block, J.H., Gjerde, P.F., & Block, J.H. (1991). Personality antecedents of depressive tendencies in 18 year-olds: A prospective syudy. *Journal of Personality and Social Psychology*, **60**, 726-738.

Borstlap, M., van der Larr, M., Zant, J., & van der Korst, J. (1993). Components of health: An analysis in rheumatoid arthritis using quality of life questionnaires and clinical and laboratory variables. *Annals of Rheumatic Disease*, **52**, 650-654.

Brewin, C.R., & Furnham, A. (1986). Attributional versus preattributional variables in self-esteem and depression: A comparison and test of learned helplessness theory. *Journal of Personality and Social Psychology*, **50**, 1013-1020.

Brown, G.K. (1990). A causal analysis of chronic pain and depression. *Journal of Abnormal Psychology*, **99**, 127-137.

Brown, G.K., & Nicassio P.M. (1987). Development of a questionnaire for the assessment of active and passive coping strategies in chronic pain patients. *Pain*, **31**, 53-64.

Brown, G.K., Nicassio, P.M., & Wallston, K.A. (1989). Pain coping strategies and depression in rheumatoid arthritis. *Journal of Consulting and Clinical Psychology*, **57**, 652-657.

Brown G.K., Wallston, K.A., & Nicassio, P.M. (1989). Social support and depression in rheumatoid athritis: A one-year prospective study. *Journal of Applied Social Psychology*, **19**, 1164-1181.

Brown, G.W. (1989). Depression: A Radical Social Perspective. In K.R. Herbst & E.S. Paykel (eds), *Depression: An Integrative Approach*. London: Heinemann Medical Books.

Brown, G.W., Bifulco, A., Veiel, H.O., & Andrews, B. (1993). Self-esteem and depression: Social correlates of self-esteem. *Social Psychiatry and Psychiatric Epidemiology*, **25**, 225-234.

Brown, G.W., Craig, T.K.J., & Harris, T.O. (1985). Depression: Distress or disease? Some epidemiological considerations. *British Journal of Psychiatry*, **147**, 612-622.

Brown G.W., & Harris, T.O. (1978). *Social Origins of Depression: A Study of Psychiatric Disorder in Women*. London: Tavistock.

Callahan, F.L., Kaplan, M.R., & Pincus, T. (1991). The Beck Depression Inventory, Centre for Epidemiological Depression Scale and General Well-Being Schedule depression subscale in rheumatoid arthritis. *Arthritis Care Research*, **4**, 3-11.

Chandarana, P.C. (1987). The detection of psychiatric morbidity and associated factors in patients with rheumatoid arthritis. *Canadian Journal of Psychiatry*, **32**, 356-361.

Checkley, S. (1989). Neuroendocrine studies of the aetiology of depression. In K.R. Herbst & E.S. Paykel (eds), *Depression: An Integrative Approach*. London: Heinemann Medical Books.

Coleman, P.G. (1984). Assessing self-esteem and its sources in elderly people. *Ageing and Society*, **4**, 117-135.

Coleman, P.G. (1993). Self-esteem and its sources: Stability and change in later life. *Ageing and Society*, **13**, 171-192.

Coleman, P.G., Aubin, A., Robinson, M., Ivani-Chalian, C., & Briggs, R. (1993). Predictors of depressives symptoms and low self-esteem in a follow-up study of elderly people over 10 years. *International Journal of Geriatric Psychiatry*, **8**, 343-349.

Cooley, C.H. (1902). *Human nature and the Social Order*. New York: Scribner's Press.

Coopersmith, S. (1967). *The Antecedents of Self-Esteem*. San Francisco, CA: W.H. Freeman.

Couverchel, I., Maugars, Y., & Prost, A. (1995). Outcomes of thirty-four rheumatoid arthritis patients with renal amyloidosis, including twelve given alkylating agents. *Review of Rheumatology (English Edition)*, **62**, 79-85.

Creed, F. (1990). Psychological disorders in rheumatoid arthritis: A growing consensus? *Annals of Rheumatic Diseases*, **49**, 808-812.

Daltroy. L.H. (1993). Doctor-patient communications in rheumatological disorders. In S. Newman & M. Shipley (eds), *Bailliere's Clinical Rheumatology: Psychological Aspects of Rheumatic Disease*. London: Bailliere Tindall.

David, J., Vouyiouka, O., Ansell, B.M., Hall, A., & Woo, P. (1993). Amyloidosis in juvenile chronic arthritis: A morbidty and mortality study. *Clinical and Experimental Rheumatology*, **11**, 85-90.

Davison, G.C., & Neale, J.M. (1994). *Abnormal Psychology* (6th edition). New York: John Wiley and Sons.

DeVellis, B.M. (1993). Depression in rheumatological diseases. In S. Newman & M. Shipley (eds), *Bailliere's Clinical Rheumatology: Psychological Aspects of Rheumatic Disease*. London: Bailliere Tindall.

Devins, D., Edworthy, S.M., Guthrie, N.G., & Martin, L. (1992). Illness intrusiveness in rheumatoid arthritis: Differential impact on depressive symptoms over the adult lifespan. *Journal of Rheumatology*, **19**, 709-715.

Dhillon, V.D., Woo, P., & Isenberg, D. (1989). Amyloidosis in the rheumatic diseases. *Annals of the Rheumatic Diseases*, **48**, 696-701.

Dubos, R. (1995). Mirage of health. In B. Davey, A. Gray & C. Seale (eds), *Health and Disease: A Reader* (second edition). Buckingham: Open University Press.

Earle, J.R., Perricone, P.J., Maultsby, D.M., Perricone, N., Turner, R.A., & Davis, J. (1979). Psychosocial adjustment of rheumatoid arthritis patients from two alternative treatment settings. *Journal of Rheumatology*, **6**, 80-87.

Engler, B. (1995). *Personality Theories: An Introduction* (4th edition). Boston, Mass: Houghton Mifflin.

Forsell, Y., Jorm, A.F., & Wimblad, B. (1994). Association of age, sex, cognitive dysfunction, and disability with major depressive symptoms in an elderly sample. *American Journal of Psychiatry*, **151**, 1600-1604.

Frank, R.G., Beck, N., Parker, J.C., Kashani, J.H., Elliott, T.R., Haut, A.E., Smith, E., Atwood, C., Brownlee-Duffeck, M., & Kay, D.R. (1988). Depression in rheumatoid arthritis. *Journal of Rheumatology*, **15**, 920-925.

Fulop, G., Reinhardt, J., Strain, J.J., Paris, B., Miller, M., & Fillit, H. (1993). Identification of alcholism and depression in a geriatric medicine outpatient clinic. *Journal of the American Geriatric Society*, **41**, 737-741.

Garber, J., & Seligman, M.E.P. (1980). *Human Helplessness*. New York: Acadmeic Press.

Gatchel, R.J. & Baum, B. (1983). *An Introduction to Health Psychology*. New York: Random House.

Haas, G.L., & Fitzgibbon, M.L. (1989). Cognitive Models. In J.J. Mann (ed), *Models of Depressive Disorders: Psychological, Biological and Genetic Perspectives*. New York: Plenum Press.

Harrison, K.L., Alpers, C.E., & Davis, C.L. (1993). De novo amyloidosis in a renal allograft: A case report and review of the literature. *American Journal of Kidney Diseases*, **22**, 468-476.

Hawley, D.J., & Wolfe, F. (1988). Anxiety and depression in patients with rheumatoid arthritis: A prospective study of 400 patients. *Journal of Rheumatology*, **15**, 923-941.

Heatherton, T.F., & Polivy, J. (1991). Development and validation of a scale for measuring self-esteem. *Journal of Personality and Social Psychology*, **60**, 895-910.

Herbert, T.B. & Cohen, S. (1993). Depression and immunity: A meta-analytic review. *Psychological Bulletin*, **113**, 472-486.

Hickling, P., & Golding, J.R. (1984). *An Outline of Rheumatology*. Bristol: John Wright & Sons.

Hirschfeld, R.M. (1994). Major depression, dysthymia and depressive personality disorder. *British Journal of Psychiatry*, **165**, 23-30.

Hirschfeld, R.M., Klerman, G., Chodoff, P., Korchin, S., & Barrett, J. (1976). Dependency - self-esteem - clinical depression. *Journal of the American Academy of Psychoanalysis*, **4**, 373-388.

Horwath, E., Johnson, J, Klerman, G., & Weissman, M. (1992). Depressive symptoms as relative and attributable risk factors for first-onset major depression. *Archives of General Psychiatry*, **49**, 817-823.

James, J.E. & Minichiello, V. (1994). Disability and rehabilitation in older persons: Biopsychosocial foundations. *Disability and Rehabilitation*, **16**, 95-97.

James, W. (1890). *The Principles of Psychology*. Boston, Mass: Henry Holt & Co. (Reprinted in 1950), New York: Dover.

Johnson, J., Weissman, M.M., & Klerman, G.L. (1992). Service utilization and social morbibity associated with depressive symptoms in the community. *Journal of American Medical Association*, **267**, 1478-1483.

Keefe, J.A., Brown, G.K., Wallston, K.A., & Caldwell, D.S. (1989). Coping with rheumatoid arthritis pain: Catastrophizing as a maladaptive strategy. *Pain*, **37**, 51-56.

Kelly, K., & Cooper, A.M. (1989). Intrapsychic Models. In J.J. Mann (ed), Models of Depressive Disorders: *Psychological, Biological and Genetic Perspectives*. New York: Plenum Press.

Kessler, R.C., Kendler, K.S., Heath, A., Neale, M.C., & Eaves, L.J. (1992). Social support, depressed mood, and adjustment to stress: A genetic epidemiological investigation. *Journal of Personality and Social Psychology*, **62**, 257-272.

Kirwan, J.R., & Reeback, J.S. (1986). Stanford health assessment questionnaire modified to assess disability in British patients with rheumatoid arthritis. *British Journal of Rheumatology*, **25**, 206-209.

Klerman. G.L. (1989). Depressive disorders: Further evidence for increased medical morbidity and impairment of social functioning. *Archives of General Psychiatry*, **46**, 856-858.

Kohout, F.J., Berkman, L.F., Evans, D.A., & Cornoni-Huntley, J. (1993). Two shorter forms of the CES-D Depression Symptoms Index. *Journal of Aging and Health*, **5**, 179-193.

Krol, B., Sanderman, R., Suurmeijer, T.H., Doeglas, D., van Rijswijk, M., & van Leeuwen, M. (1994). Disease characteristics, level of self-esteem and psychological well-being in rheumatoid arthritis patients. *Scandinavian Journal of Rheumatology*, **23**, 8-12.

Laakso, M., Mutru, O., Isomaki, H., Koota, K. (1986). Mortality from amyloidosis and renal diseases in patients with rheumatoid arthritis. *Annals of the Rheumatic Diseases*, **45**, 663-667.

Lawrence, J.S. (1977). *Rheumatism in Populations*. London: Heinmann Press.

Lawson, K., Reesor, K.A., Keefe, F.J., & Turner, J.A. (1990). Dimensions of pain-related cognitive coping: Cross-validation of the factor structure of the Coping Strategies Questionnaire. *Pain*, **45**, 195-204.

Lazarus, R.S., & Folkman, S. (1984). Coping and adaptation. In W. Gentry (ed.), *Handbook of Behavioural Medicine*. London: Guilford.

Lewinsohn, P.M., Steinmetz, J.L., Larson, D.W., & Franklin, J. (1981). Depression-related cognitions: Antecedent or consequences? *Journal of Abnormal Psychology*, **90**, 213-219.

Lorish, C.D., Abraham, N., Austin, J.S., Bradley, L.A., & Alarcon, G.S. (1991). A comparison of the full and short versions of the Arthritis Impact Measurement Scales. *Arthritis Care and Research*, **4**, 169-173.

Magni, G., Moreschi, C., Rigatti-Luchini, S., & Merskey, H. (1994). Prospective study on the relationship bwteen depressive symptoms and chronic musculoskeletal pain. *Pain*, **56**, 289-297.

Manne, S.L., & Zautra, A.J. (1989). Spouce criticism and support: Their association with coping and psychological adjustment among women with rheumatoid arthritis. *Journal of Personality and Social Psychology*, **56**, 608-617.

Marsh, H.W. (1986). Global self-esteem: Its relation to specific facets of self-concept and their importance. *Journal of Personality and Social Psychology*, **51**, 1224-1236.

McClelland, D.C. (1985). The social mandate of health psychology. *American Behavioural Science*, **28**, 451-467.

Mead, G.H. (1934). *Mind, Self and Society*. Chicago: University of Chicago Press.

Meenan, R.F., Gertman, P.M., Mason, J.H. & Dunaif, R. (1982). The Arthritis Impact Measuremenr Scales: Further investigations of a health status measure. *Arthritis and Rheumatism*, **25**, 1048-1053.

Metalsky, G.I., Halberstadt, L.J., & Abramson, L.Y. (1987). Vulnerability to depressive mood reactions: Towards a more powerful test of the diathesis-stress and causal mediation components of the reformulated theory of depression. *Journal of Personality and Social Psychology*, **52**, 386-393.

Metalsky, G.I., Joiner, T.E., Hardin, T.S., & Abramson, L.Y. (1993). Depressive reactions to failure in a naturalistic setting: A test of the hopelessness and self-esteem theories of depression. *Journal of Abnormal Psychology*, **102**, 101-109.

Murphy, E. (1989). Depression in the Elderly. In K.R. Herbert & E.S. Paykel (eds), *Depression: An Integrated Approach*. London: Heinemann Press.

Murphy S., & Creed F. (1988). Psychiatric disorders and illness behaviours in rheumatoid arthritis. *British Journal of Rheumatology*, **27**, 357-363.

Murray, D.J. (1988). *A History of Western Psychology* (second edition). New Jersey: Prentice Hall.

Newman, S.P., Fitzpatrick, R., Lamb, R., & Shipley, M, (1989). The origins of depressed mood in rheumatoid arthritis. *Journal of Rheumatology*, **16**, 740-744.

Newman, S.P., & Revenson, T.A. (1993). Coping with rheumatoid arthritis. In S. Newman & M. Shipley (eds), *Bailliere's Clinical Rheumatology: Psychological Aspects of Rheumatic Disease*. London: Bailliere Tindall.

Nicassio, P.M., & Wallston, K.A. (1992). Longitudinal relationships among pain, sleep problems, and depression in rheumatoid arthritis. *Journal of Abnormal Psychology*, **101**, 514-520.

Nicassio, P.M., Wallston, K.A., Callahan, L.F., Herbert, M., & Pincus, T. (1985). The measurement of helplessness in rheumatoid arthritis: The development of the athritis helplessness index. *Journal of Rheumatology*, **12**, 462-467.

Nolen-Hoeksema, S. (1991). Response to depression and there effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, **100**, 569-582.

Nolla, J.M., & Lience, E. (1993). Rheumatoid Arthritis. In M.A. Khamashta, J. Font & G. Hughes (eds), *Autoimmune Connective Tissue Diseases*. Barcelona: Doyma.

Nunnally, J., & Bernstein, I.H. (1994). *Psychometric Theory* (third edition). New York: McGraw-Hill.

Olin, J.T., Schneider, L.S., Eaton, E.M., Zemansky, M.F., & Pollock, V.E. (1992). The Geriatric Depresson Scale and the Beck Depression Inventory as screening instruments in an older outpatient population. *Psychological Assessment*, **4**, 190-192.

Parker, J., Frank, R., & Beck, N. (1988). Pain in rheumatoid arthritis: Relationship to demographic, medical and psychological variables. *Journal of Rheumatology*, **15**, 433.

Patrick, D., Morgan, M., & Charlton, J. (1986). Psychosocial support and change in the health status of physically disabled people. *Social Science Medicine*, **22**, 1347-1354.

Peck, J.P., Smith, T.W., Ward, J.R., & Milano, R. (1989). Disability and depression in rheumatoid arthritis. *Arthritis and Rheumatism*, **32**, 1100-1106.

Powell, D.H. (1994). *Profiles in Cognitive Aging*. Cambridge, Massachusetts: Harvard University Press.

Prichard, M.L. (1989). *Psychological Aspects of Rheumatoid Arthritis*. New York: Springer-Verlag.

Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, **1**, 385-401.

Revenson, T.A. (1993). The role of social support with rheumatic disease. In S. Newman & M. Shipley (eds), *Bailliere's Clinical Rheumatology: Psychological Aspects of Rheumatic Disease*. London: Bailliere Tindall.

Rimon, D. (1978). Depression in arthritis. *Aktuelle Rheumatology*, **3**, 143-147.

Rimon, D. & Laakso, R. (1984). Overt psychopathology in rheumatoid arthritis: A fifteen year follow-up study. *Scandinavian Journal of Rheumatology*, **13**, 324-328.

Ritchie, D.M., Boyle, J.A., & McInnes, J.M. (1968). Clinical studies with an articular index for the assessment of joint tenderness in patients with rheumatoid arthritis. *Quarterly Journal of Medicine*, **147**, 393-406.

Robins, C. (1988). Psychosocial functioning and depression. *Psychological Bulletin*, **104**, 97-105.

Rogers, C.R. (1951). *Client Centered Therapy: Its Current Practise, Implications and Theory*. Boston, Mass: Houghton Mifflin.

Rose, G. (1992). *The Strategy of Preventive Medicine*. Oxford: Oxford University Press

Rosentiel, A.K., & Keefe, F.J. (1983). The use of coping strategies in chronic lower back pain patients: Relationship to patient characteristics and current adjustment. *Pain*, **17**, 33-44.

Rosenberg. M. (1965). *Society and the Self-Image*. Priceton, NJ: Princeton University Press.

Schoenfled-Smith, K., Petroski, G, Hewett, J., Johnson, J., Wright, G., Smarr, K. & Parker, J. (1995). Biopsychosocial contributors to disability in RA. Presentation at the 1995 *National Scientific Meeting of the American College of Rheumatology*, San Fransico, California. *Arthritis and Rheumatism*, **38 (9)**, S405.

Schwartz, A.N. (1975). An observation on self-esteem as the linchpin of quality of life for the aged. *Gerentologist*, **15**, 6-15.

Serbo, B., & Jajic, I. (1991). Relationship of the functional status, duration of the disease and pain intensity and some psychological variables in patients with rheumatoid arthrits. *Clinical Rheumatology*, **10**, 419-422.

Sherbourne, C.D., Wells, K.B., Hays, R.D., Rogers, W., Burnam, M.A., & Judd, L.L. (1994). Subthreshold depression and depressive disorders: Clinical characteristics of general medical and mental health specialty outpatients. *American Journal of Psychiatry*, **151**, 1777-1784.

Sheridan, C.L., & Radmacher, S.A. (1992). *Health Psychology: Challenging the Biomedical Model*. New York: John Wiley & Sons.

Shipley, M., & Newman, S.P. (1993). Psychological aspects of rheumatic diseases. In S. Newman and M. Shipley (eds), *Bailliere's Clinical Rheumatology: Psychological Aspects of Rheumatic Disease*. London: Bailliere Tindal.

Skevington, S.M. (1993). The experience and management of pain in rheumatological disorders. In S. Newman & M. Shipley (eds), *Bailliere's Clinical Rheumatology: Psychological Aspects of Rheumatic Disease*. London: Bailliere Tindall.

Skevington, S.M. (1993b). Depression and causal attributions in the early stages of a chronic painful disease: A lognitudinal study of early synovitis. *Psychology and Health*, **8**, 51-64.

Skevington, S.M., Blackwell, F., Britton, N.F. (1987). Self-esteem and perceptions of attractiveness: an investigation of early rheumatoid arthritis. *British Journal of Medical Psychology*, **60**, 45-52.

Smith T.W., Christensen, A.J., Peck, J.P., & Ward, J.R. (1994). Cognitive distortion, helplessness and depressed mood in rheumatoid arthritis: A four-year longitudinal analysis. *Health Psychology*, **13**, 213-217.

Smith, C.A., & Wallston, K.A. (1992). Adaptation in patients with chronic rheumatoid arthritis: Application of a general model. *Health Psychology*, **11**, 151-162.

Sobel, D.S. (1995). Rethinking medicine: Improving health outcomes with cost-effective psychosocial interventions. *Psychosomatic Medicine*, **57**, 234-244.

Stein, M.J., Wallston, K.A., Nicassio, P.M., & Castner, N.M. (1988). Correlates of a clinical classification schema for the arhtritis helplessness subscale. *Arhtritis and Rheumatism*, **31**, 876-881.

Stokes, G. (1992). *On Being Old: The Psychology of Later Life*. London: The Falmer Press.

Stuart-Hamilton, I. (1992). *The Psychology of Ageing: An Introduction*. London: Jessica Kingsley Publishers.

Tan, S.Y., Pepys, M.B., & Hawkins, P.N. (1995). Treatment of amyloidosis. *American Journal of Disease*, **26**, 267-285.

Tiitinen, S., Kaarela, K., Helin, H., & Isomaki, H. (1993). Amyloidosis: Incidence and early risk factors in patients with rheumatoid arthritis. *Rheumatology*, **22**, 158-161.

Wallace, J., & O'Hara, M.W. (1992). Increases in depressive symptomology in the rural elderly: Results from a cross-sectional and longitudinal study. *Journal of Abnormal Psychology*, **101**, 398-404.

Wallston, K.A., Brown, G.K., Stein, M.J., & Dobbins, C.J. (1989). Comparing the short and long versions of the Arhtritis Impact Measurement Scales. *Journal of Rheumatology*, **16**, 1105-1109.

Wells, L.E., & Marwell, G. (1976). *Self-Esteem: Its Conceptualization and Measurement*. London: Sage Publications.

Wittchen, H.U., Knauper, B., & Kessler, R.C. (1994). Lifetime risk of depression. *British Journal of Psychiatry*, **165**, 16-22.

World Health Organization (1992). *The ICD-10 Classification of Mental and Behavioural Disorders*. Geneva: WHO.

Wright, S. (1995). Health psychologists make an important contribution to care. *British Medical Journal*, **311**, 948.

Wright, V. (1984). The Forward. In P. Hickling & J.R. Golding (eds.), *An Outline of Rheumatology*. Bristol: John Wright & Sons.

Wyles, M. (1992). *Arthritis*. London: Office of Health Economics.

Yesavage, J.A., Brink, T.L., Rose, T.L., Lum, O., Huang, V., Adey, M., & Leirer, V.O. (1983). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research*, **17**, 37-49.

Young, L.D. (1992). Psychological factors in rheumatoid arthritis. *Journal of Consulting and Clinical Psychology*, **60**, 619-627.

Zaphiropoulos, G., & Burry, H. (1974). Depression in rheumatic disease. *Annals of Rheumatic Disease*, **33**, 132-135.

Zautra, A.J., Burleson, M.H., Matt, K.S., Roth, S. & Burrows, L. (1994). Interpersonal stress, depression, and disease activity in rheumatoid arthritis and osteoarthritis patients. *Health Psychology*, **13**, 139-148.

Ziebland, S., Fitzpatrick, R., Jenkinson, C., Mowat, A., & Mowat, A. (1992). Comparison of two approaches to measuring change in health status in rheumatoid arthritis: The Health Assessment Questionnaire (HAQ) and the modified HAQ. *Annals of Rheumatic Diseases*, **51**, 1202-1205.

Ziller, R., Hagey, J., Smith, M., & Long, B. (1969). Self-esteem: A self-social construct. *Journal of Consulting and Clinical Psychology*, **33**, 84-95.

Zimmerman, M., & Coryell, W. (1994). Screening for major depreesive disorder in the community: A comparison of measures. *Psychological Assessment*, **6**, 71-74.

A R T H R I T I S C A R E

Action for people with Arthritis.

APPENDIX A

April 12, 1995

James Murray
Rm s601
Adam Smith Building
Psychology
University of Glasgow
Glasgow
G12 8RT

Dear Mr Murray,

Thank you for your letter dated 7 April regarding your wish to use three diagrams from one of our publications in your Ph.D. thesis. I have no objections to this provided full credit is given. 'Printed with the kind permission of Arthritis Care, 18 Stephenson Way, London, NW1 2HD' should be included.

Good luck.

Yours sincerely

Jim Pollard
Director of Communications

GREATER GLASGOW HEALTH BOARD
WESTERN INFIRMARY/GARTNAVEL GENERAL HOSPITAL UNIT

APPENDIX B

JKF/CD 93/43

Western Infirmary
Dumbarton Road
Glasgow G11 6NT
Tel No 041 339 8822

Mr Flood

21 April 1993

Dr James Murray
Department of Psychology
Adam Smith Building
University of Glasgow
GLASGOW

Dear Dr Murray

COPING, DEPRESSING AND PAIN IN RHEUMATOID ARTHRITIS

Thank you for your letter of 19 April enclosing a modified patient consent for this study.

At the meeting of the West Ethics Committee held on 20 April, 1993, the Committee approved the content of the modified consent and I am pleased to confirm that the study now has full and unqualified ethics approval.

With kind regards.

Yours sincerely

JOHN K FLOOD
Secretary
Ethical Committee

APPENDIX C

UNIVERSITY
of
GLASGOW

Dear Participant:

Re: The psychological aspects of Rheumatoid Arthritis

The Department of Psychology at the University of Glasgow is presently conducting a graduate research project that is looking at the physical effects and the psychological effects of rheumatoid arthritis. This is an invitation for you to be included as a participant in this study, which is being conducted by James Murray.

Participation in this study includes answering questions about rheumatoid arthritis and the impact it has on your daily life. Please note that this research may not be of direct benefit to you, but it could help in the development of treatment and a better understanding of rheumatoid arthritis for future patients. Participation in this interview will take no more than 20 minutes after you have signed the consent sheet, which gives me your permission to participate in this study. All information obtain will be kept strictly confidential and if you withdraw from the study at any time, your care will in no way be affected.

This study has received the approval of the local hospital research and ethics committee. If you have any questions about this research project please contact me, James Murray (339-8855, ext. 5085), or Patrick O'Donnell (339-8855, ext. 4688), Head of the Department of Psychology, University of Glasgow.

Yours sincerely,

James Murray

Department of Psychology
Adam Smith Building
University of Glasgow
Glasgow, G12 8RT

DEPARTMENT OF PSYCHOLOGY
n Smith Building, Glasgow G12 8RT
Telephone 0141-339 8855 *Fax* 0141-339 8889

APPENDIX D

GREATER GLASGOW HEALTH BOARD

THE WEST ETHICAL COMMITTEE

FORM OF CONSENT FOR PATIENTS/VOLUNTEERS IN CLINICAL RESEARCH PROJECT

Brief Title of Project

The psychological aspects associated with rheumatoid arthritis

Patient's Summary

The University of Glasgow is presently conducting a graduate research project that is looking at the physical effects and the psychological effects of rheumatoid arthritis. This is an invitation for you to be included as a participant in this study, which is being conducted by James Murray, who is a Ph.D., candidate in the Department of Psychology.

Participation in this study is voluntary and includes simply answering questions about your arthritis and the impact it has upon your daily life. Please note that this research may not be of direct benefit to you, but it could help in development of treatment and a better understanding of arthritis for future patients. Answering the questionnaire package will take about 30 minutes to complete after you have signed and dated this consent sheet. Please ensure that this consent sheet is returned with the completed questionnaire in the stamped addressed return envelope provided.

This research project has received ethical approval from the Greater Glagow Health Board and is being conducted with the assistance of Dr. John Hunter, Consultant Rheumatologist at the Gartnavel General Hospital and Professor R.D. Sturrock at the Centre For Rhuematic Diseases within the Royal Infirmary.

All information obtained will be kept strictly confidential and if you withdraw from this study at any time, your current or future mediacl care will in no way be affected. This research will also review and use information from your hospital case book. Some participants will be mailed a second questionnaire in six months time if they returned the current package, this is why you have been asked to provide your home address. Thank you very much for you time and co-operation.

Consent

I,.....
give my consent to the research procedures described above, the nature, purpose and possible consequences of which have been described to me in the enclosed information letter, sent by James Murray.

SIGNATURE.....

DATE.....

APPENDIX E

UNIVERSITY
of
GLASGOW

Dear Participant:

Re: The psychological aspects aging and health

The Department of Psychology at the University of Glasgow is presently conducting a graduate research project that is looking at the physical and psychological aspects of rheumatoid arthritis, and issues associated with aging and health. This is an invitation for you to be included as a participant in this study, which is being conducted by James Murray.

Participation in this study includes answering questions about aging and health, such as self-esteem and happiness. Answering the questions will take no more than 20 minutes after you have signed the consent sheet, which gives us your permission to participate in this study. All information obtained will be kept strictly confidential and if you withdraw from the study at any time.

This study has received the approval of the local hospital research and ethics committee. The information that you and others provide will be compared to similar information provided by persons with rheumatoid arthritis. If you have any questions about this research project please contact James Murray (339-8855, ext. 5085), or Patrick O'Donnell (339-8855, ext. 4688), Head of the Department of Psychology, University of Glasgow.

Yours sincerely,

James Murray

Department of Psychology
Adam Smith Building
University of Glasgow
Glasgow, G12 8RT

DEPARTMENT OF PSYCHOLOGY
m Smith Building, Glasgow G12 8RT
39 8855 *Fax*: 0141–339 8889

Participant Consent Form

I, _____, have read the information sheet and give my permission to be included as a participant in this research project being conducted by James Murray and Patrick O'Donnell of the Department of Psychology at the University of Glasgow.

I understand that I will be asked a series of questions about the physical and psychological aspects of health and aging (self-esteem and happiness) that will take approximately 20 minutes. I understand that this study has the cooperation of the Greater Glasgow Old Persons Welfare Association and that participation is voluntary and that I may withdraw at anytime. I am also aware that all the information obtained will be kept strictly confidential and that answers to the questions are anonymous.

Signature: _____

Date: _____

APPENDIX G

Geriatric Depression Scale

1. Are you basically satisfied with your life?
2. Have you dropped many of your activities and interests?
3. Do you feel that your life is empty?
4. Do you often get bored?
5. Are you hopeful about the future?
6. Are you bothered by thoughts you can't get out of your head?
7. Are you in good spirits most of the time?
8. Are you afraid that something bad is going to happen to you?
9. Do you feel happy most of the time?
10. Do you often feel helpless?

11. Do you often get restless and fidgety?
12. Do you prefer to stay at home, rather than going out and doing new things?
13. Do you frequently worry about the future?
14. Do you feel that you have more problems with memory than most?
15. Do you think it is wonderful to be alive now?
16. Do you often feel downhearted and blue?
17. Do you feel pretty worthless the way you are now?
18. Do you worry a lot about the past?
19. Do you find life very exciting?
20. Is it hard for you to get started on new projects?

21. Do you feel full of energy?
22. Do you feel that your situation is hopeless?
23. Do you think that most people are better off then you are?
24. Do you frequently get upset about little things?
25. Do you frequently feel like crying?
26. Do you have troubles concentrating?
27. Do you enjoy getting up in the morning?
28. Do you prefer to avoid social gatherings?
29. Is it easy foe you to make decisions?
30. Is your mind as clear as it used to be?

APPENDIX H

J.L Murray, SSESS

INSTRUCTIONS

The 10 questions listed below are each composed of two statements that are opposites, with a neutral or no response choice in between. Please circle ONE of the three possible choices from each question. Following your response for each question, give a brief example of WHY you thought that about yourself. An example of this is if your choice on question 5 was "I am important to others", state why like "I love my grandchildren" or "my sister needs me".

1. I feel useful ---------- No Response ---------- I feel useless

Example:

2. I get little enjoyment from life ---- No Response ---- I get much enjoyment from life

Example:

3. I am capable of doing a lot ----- No Response ----- I am quite helpless

Example:

4. I have no goals left in life ----- No Response ----- I have a clear goal in life

Example:

5. I am important to others ----- No Response ----- I feel that I no longer count

Example:

6. I am unsure of myself -------- No Response -------- I have confidence in myself

Example:

7. I think that my life has meaning ----- No ----- My life no longer has any meaning
Response

Example:

8. I have little hope for the future ----- No ----- I have confidence about the future
Response

Example:

9. I am in control of my life -------- No Response -------- I feel powerless

Example:

10. I often feel depressed ---------- No Response ---------- I am usually in good sprits

Example

APPENDIX I

UNIVERSITY
of
GLASGOW

Dear Participant:

Re: The Psychological Aspects of Amyloidosis and Arthritis

The Department of Psychology at the University of Glasgow is presently conducting a graduate research project that is looking at the physical and the psychological aspects of amyloidosis and arthritis. This is an invitation for you to be included as a participant in this study, which is being conducted by James Murray. Dr. John Hunter has also included a letter to demonstrate his cooperation and interest in this research.

Participation in this study includes answering questions about arthritis and the impact it has on your daily life. Please note that this research may not be of direct benefit to you, but it could help in the development of treatment and a better understanding of amyloidosis and arthritis for future patients. Participation in this study should take no more than 30 minutes after you have signed the consent sheet, which gives me your permission to participate in this study. Have a friend or family member help you to complete the enclosed questionnaire packages. Please return the signed consent form and the completed questionnaire package in the stamped addressed envelope to James Murray. All information obtain will be kept strictly confidential and if you withdraw from the study at any time, your care will in no way be affected.

This study has received the approval of the local hospital research and ethics committee. If you have any questions about this research project please contact me, James Murray (339-8855, ext. 5085), or Patrick O'Donnell (339-8855, ext. 4688), Head of the Department of Psychology, University of Glasgow.

Thank you for your time and cooperation. I will look forward to your reply with great interest.

Yours sincerely,

James Murray

Department of Psychology
Adam Smith Building
University of Glasgow
Glasgow, G12 8RT

DEPARTMENT OF PSYCHOLOGY
[illegible]m Smith Building, Glasgow G12 8RT
[illegible]39 8855 *Fax* 0141-339 8889

Hospitals University NHS Trust
ary, Gartnavel General Hospital,
Drumchapel Hospital, Glasgow Eye Infirmary & The Glasgow Homoeopathic Hospital

APPENDIX J

Our ref

Your ref

Please reply to

Gartnavel General Hospital
1053 Great Western Road
Glasgow G12 0YN
Direct Line
Fax No.

Dear

I hope you will feel able to participate in the study outlined in the enclosed letter. There are differences in the problems faced by patients with amyloidosis and we felt this would be an important group to include. If the number of returned questionaires proves adequate, I think we might be able to guide patients and their families better in future.

Thanks for your help.

Yours sincerely

JOHN A HUNTER
Consultant Physician and Rheumatologist

APPENDIX K

UNIVERSITY
of
GLASGOW

Dear Participant:

This is an invitation for you to participate in a research study, entitled **the psychological aspects associated with rheumatoid arthritis**, being conducted by James Murray of the Psychology Department at the University of Glasgow, with the assistance of Dr. John Hunter at the Gartnavel General Hospital and Professor R. D. Sturrock at the Centre for Rheumatic Diseases within the Royal Infirmary. This research is basically a survey asking you to complete a six page questionnaire assessing characteristics of yourself, how you cope with your arthritis and the impact that arthritis has had on your life.

Participation in this study simply involves signing the enclosed consent form and answering the six pages of questions. Each of the six pages of questions concern different areas, but they all have to do with the impact that arthritis has had on your daily life. At the top of each of the six pages there is a set of instructions that will tell you how to respond to the questions. Being a participant in this study is voluntary and will take about 30 minutes to complete after you have signed the consent form. All the information obtained from you will be kept strictly confidential and if you do not participate your medical care will in no way be affected.

Once you have signed the consent form and answered all of the questions simply fold them both into the stamped addressed envelope and post this to James Murray. Have a friend or a family member help if you need assistance and call James Murray at 041-339-8855 extension 5085 if you have any problems or questions. Some participants will be mailed a second questionnaire in six months time if they have completed and returned this package, this is why you have been asked to provide your home address. Please note that the results of this study may not be of direct benefit to you, but it could help in the development of a better understanding of arthritis for future patients. A summary of the survey results will be available to you if you are interested.

Thank you for your time and co-operation. I will look forward to your reply with great interest.

Yours sincerely,

James Murray

DEPARTMENT OF PSYCHOLOGY
University of Glasgow, Adam Smith Building, Glasgow G12 8RT
39 8855 *Fax*: 041-339 8889

APPENDIX L

INSTRUCTIONS

The following nine questions are largely personal and will provide the researchers with basic information about you. Simply write in your name, address, age in years and how long you have had arthritis. Please circle *ONE* response from the options for the questions about your sex (or gender), marital status, level of education and also for questions 8 and 9 which ask about your arthritis pain.

1. *NAME:* .....

2. *ADDRESS:* .....

3. *AGE:* .....

4. *HOW LONG HAVE YOU HAD ARTHRITIS:* .....

5. *SEX:* Female / Male

6. *MARITAL STATUS:* Single / Married / Divorced / Widow-er

7. *WHAT LEVEL OF FORMAL EDUCATION HAVE YOU REACHED?* (please circle *ONE* of the following):

   A. Some Primary School
   B. Completed Primary School
   C. Some Secondary School
   D. Completed Secondary School
   E. Trade School
   F. College / University

8. *CHOOSE ONE OF THE FOLLOWING STATEMENTS TO DESCRIBE THE ARTHRITIS PAIN THAT YOU HAVE EXPERIENCED OVER THE PAST SEVEN DAYS?* (Please circle *ONE* of the following):

   A. No pain during the past seven days
   B. Mild pain during the past seven days
   C. Moderate levels of pain during the past seven days
   D. Severe pain during the past seven days

9. *DURING THE PAST MONTH (or 30 DAYS), HOW OFTEN HAVE YOU HAD SEVERE PAIN FROM YOUR ARTHRITIS?* (Please circle only *ONE*)

   A. No severe pain in the past 30 days
   B. Some severe pain. 1-10 days of the past 30 days
   C. Severe pain most of the time. 11-25 days of the past 30 days
   D. Severe pain all of the time, during the past 30 days

APPENDIX M

J L Murray, CES-D

INSTRUCTIONS

Please tick the ONE response which best describes your feelings over the past week for the 20 questions listed below, using the following scale:

1 = Never, or none of the time

2 = Sometimes (1 or 2 days in the last week)

3 = Most of the time (3 or 4 days in the last week)

4 = All of the time (5-7 days in the past week)

	1	2	3	4
1. I was bothered by things that don't usually bother me.				
2. I did not feel like eating, my appetite was poor.				
3. I felt I could not shake off the blues.				
4. I felt as good as other people.				
5. I had trouble keeping my mind on what I was doing.				
6. I felt depressed.				
7. I felt everything I did was an effort.				
8. I felt hopeful about the future.				
9. I thought my life had been a failure.				
10. I felt fearful.				
11. My sleep was restless.				
12. I was happy.				
13. I talked less than usual.				
14. I felt lonely.				
15. People were unfriendly.				
16. I enjoyed life.				
17. I had crying spells.				
18. I felt sad.				
19. I felt that people disliked me.				
20. I could not get "going".				

APPENDIX N

J L Murray, VPMI

INSTRUCTIONS:

Please rate how often you use the 18 strategies listed below, when your pain reaches a moderate or greater level of intensity. After each of the statements tick just ONE box from the five responses possible.

1 = NEVER : I never do when in pain

2 = RARELY : I rarely do when in pain

3 = SOMETIMES : I sometimes do when in pain

4 = MOST TIMES : I do most times when in pain

5 = ALL TIMES : I do all the time when in pain

	1	2	3	4	5
1. Wish that your doctor would prescribe better pain medication.					
2. Think that the pain is wearing you down.					
3. tell others how much the pain hurts.					
4. Pray for relief.					
5. Restrict your social activities.					
6. Depend upon others for help with daily tasks.					
7. Think that you cannot do anything to cope with the pain.					
8. Take medication for the purpose of instant pain relief.					
9. Cali a doctor or nurse for help.					
10. Focus on the intensity and location of the pain.					
11. Suppress angry depressed or frustrated feelings.					
12. Engage in physical therapy or physical exercise.					
13. Ignore your pain.					
14. Keep yourself active and busy.					
15. Clear your mind of bothersome thoughts.					
16. Read.					
17. Participate in leisure activities.					
18. Distract your attention from your pain.					

APPENDIX O

J.L Murray, MHAQ

INSTRUCTIONS: Please tick the ONE response which best describes your abilities over the past week for the following eight questions, using the following scale:

1 = Without any difficulty

2 = With some difficulty

3 = With much difficulty

4 = Unable to do

	1	2	3	4
Dress yourself including tying shoes and doing buttons?				
Get in and out of bed?				
Lift a full cup or glass to your mouth?				
Walk out of doors on flat ground?				
Wash and dry your entire body?				
Bend down and pick up clothing from the floor?				
Turn taps on and off?				
Get in and out of a car?				

APPENDIX P

J.L. Murray, AHI

INSTRUCTIONS

For the five statements listed below please circle ONE response that most accurately expresses how you feel and think about your arthritis, from the following six response options:

SD = Strongly Disagree

MD = Moderately Disagree

D = Disagree

A = Agree

MA = Moderately Agree

SA = Strongly Agree

1. Arthritis is controlling my life. SD MD D A MA SA

2. I would feel helpless if I couldn't rely on other people for help with my arthritis. SD MD D A MA SA

3. No matter what I do, or how hard I try, I just can't seem to get relief from my pain. SD MD D A MA SA

4. I am coping effectively with my arthritis. SD MD D A MA SA

5. It seems as though fate and others factors beyond my control affect my arthritis. SD MD D A MA SA

APPENDIX Q

UNIVERSITY
of
GLASGOW

Thank you for participating in the research study entitled the psychological aspects associated with rheumatoid arthritis, being conducted by James Murray of the Psychology Department at the University of Glasgow.

In approximately six months time, I will be mailing out a similar questionnaire, as a follow up to the original that you have just completed.

Thank you once again for your time and co-operation. I will look forward to corresponding with you in six months time.

Yours sincerely,

James Murray

339-8855 (x 5085)

DEPARTMENT OF PSYCHOLOGY
University of Glasgow, Adam Smith Building, Glasgow G12 8RT
Tel: 041-339 8855 *Fax:* 041-339 8889

APPENDIX R

UNIVERSITY
of
GLASGOW

Approximately six months ago you completed a six page questionnaire for a research study entitled the psychological aspects of rheumatoid arthritis, being conducted by James Murray at the Psychology Department of the University of Glasgow.

The enclosed questionnaire that you are being asked to fill in is a follow-up to the original one.

I will look forward to receiving your completed follow-up questionnaire in the stamped addressed envelope provided as soon as you have some time (30 minutes or so) to attend to it. Have a family member or a friend help if you need assistance and call me at 041-339-8855 extension 5085 if you have any concerns or questions. As with the original questionnaire, all of the information obtained from you will be kept strictly confidential.

Thank you once again for your co-operation and time. I will look forward to your reply with great interest.

Sincerely,

James Murray

DEPARTMENT OF PSYCHOLOGY
University of Glasgow, Adam Smith Building, Glasgow G12 8RT
Tel: 041-339 8855 *Fax*: 041-339 8889

APPENDIX S

GENERAL INSTRUCTIONS

The six pages of this questionnaire contain questions that are associated with the psychological aspects of rheumatoid arthritis. Please refer to the instructions at the top of each page for specific information about answering the questions. Could you please try to answer all of the questions. Thank you.

1. When was your most recent visit to the Rheumatology Out-Patient Clinic that you regularly attend?

.....

2. Have you spent time in the hospital, on a rheumatology ward, for problems associated with your arthritis?

   NO / YES (if so, for how long? .....)

3. What type of medication do you regularly take for your arthritis?

.....

.....

4. Choose one of the following statements to describe the arthritis PAIN that you have experienced over the past SEVEN DAYS? (Please circle ONE of the following):

   A. No pain during the past seven days
   B. Mild pain during the past seven days
   C. Moderate levels of pain during the past seven days
   D. Severe pain during the past seven days

5. During the past MONTH (or 30 days), how often have you had severe pain from your arthritis? (Please circle only ONE):

   A. No severe pain in the past 30 days
   B. Some severe pain (1-10 days of the past 30 days)
   C. Severe pain most of the time (11-25 days of the past 30 days)
   D. Severe pain all of the time during the past 30 days

APPENDIX T

UNIVERSITY
of
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Dear

Two weeks ago I posted to you a questionnaire package as a follow-up to survey questions that you answered six months ago.

I have not yet received this completed questionnaire, so have enclosed another in an attempt to encourage you to answer theses questions. Keep in mind that your participation is voluntary and that your answers will be confidential.

The follow-up questions are an important aspect of the research on **the psychological aspects of rheumatoid arthritis over time**, and your answers would be of value. With your co-operation and the information provided by others with arthritis, this particular study will soon be complete.

Thank you again for your help and I will look forward to receiving your completed follow-up questionnaire.

Sincerely,

James Murray
(x 5085)

DEPARTMENT OF PSYCHOLOGY
University of Glasgow, Adam Smith Building, Glasgow G12 8RT
9 8855 *Fax:* 0141-339 8889