STRESS AND LEISURE COPING FOR WOMEN WITH RHEUMATOID ARTHRITIS

BY

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To My Father

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Lei Guo

STRESS AND LEISURE COPING FOR WOMEN WITH RHEUMATOID ARTHRITIS
(Thesis Abstract)

The Problem

The problem of this study was to explore the interactive role of leisure activities in the process of coping with stress of adults with rheumatoid arthritis (RA).

Procedures

Under the framework of naturalistic paradigm, the interview method was used to collect the rich, descriptive data. Totally, 14 participants with RA were recruited. With the open-ended questions, participants were asked to describe their disease history as well as their corresponding leisure history. Data analysis was guided by using the constant comparative method proposed by Glaser and Strauss who developed grounded theory in 1967.

Findings

The findings of this study showed that RA had impacted the life of these participants in almost every aspect of their lives and caused a great level of illness-related stress. The findings showed that RA has both positive and negative impacts on leisure. Meanwhile, in the process of coping with stress from RA, leisure played an important role. The participants reported that the leisure activities they engaged in were fun and enjoyable, which helped them relax and release stress. The results showed that leisure could be used as a means to release stress through escaping, expressing negative emotions, relaxing, enhancing mood, mind-off, and being with friends and other people.

Conclusions

While the negative impact of RA on the participants is dramatic and stressful, the positive growth from fighting with RA has been identified. Although most of the participants with RA experienced a reduced leisure satisfaction and increased participation in passive leisure activities, leisure facilitates enjoyable and relaxing experiences that provide the opportunity for positive reappraisal of stressful circumstances to reduce the perceived stress from negative life events. Therefore, leisure buffers against stress through facilitating positive reappraisal of the higher level of stress.

Approved:

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INTRODUCTION

Since Hans Selye developed the term "stress" to indicate the response of the body to noxious agents in 1937, studies about stress have grown to be one of the dominant focuses in the fields of physiology, biology, psychology, and sociology for several decades. Currently, the word "stress" has been used most frequently as the direct or indirect cause of almost every disease, including the number one killer—heart disease—in the United States and the United Kingdom (Cassidy, 1999). With rapid social changes and more competitive working conditions, people are experiencing more and more stressful lives (Garhammer, 2002). Stress in many areas such as work (Linton, 2004; Peterson & Wilson, 2004; Philip, 2004), family (Schwarz & Dunphy, 2003), school (Soric, 1999), and travel (Westman, 2004), has been investigated and sources of stress (Dixon, Rumford, Heppner, & Lips, 1992) have been identified.

Life events, such as the loss of a loved one, unemployment, divorce, and illness have been examined as main sources of stress. Negative life events have significant, immediate and long term effects on health (Kleiber, Hutchinson, and Williams, 2002), in which individuals may become vulnerable to diseases. After experiencing a traumatic event, many people are likely to have short-term distress, going through stages such as shock, disorganization, denial, and depression, all of which impact both physical and psychological health as well as perceptions of quality of life (Steadman-Pare, Colantonio, Ratcliff, Chase, & Vernich, 2001). Many of them, however, are able to adapt to, recover from, and accept it by coping appropriately (Hutchinson, Loy, Kleiber, & Dattilo, 2003).

Then, they can reintegrate themselves and find new, positive meanings through the negative life events. Other than those dramatic life events, people may suffer from daily hassles, such as quarrels with friends, traffic, and being critiqued by others, which impose an accumulating effect that may surpass those of major negative life events (Iwasaki, Mannell, Smale, and Butcher, 2002).

While stress is significantly related to illness, illness itself is an influencing stressor. Illness has been observed to be associated with decreased life satisfaction, lowered self-esteem, negative moods, and depression (Schneider, 2004). If it happened at midlife, a period characterized as carrying more work and family responsibilities and challenges, the intrusiveness of illness may induce serious stress (Samuels, 1997; Wethington, 2000).

With the long duration of its negative effects, chronic illness has become a research focus in both stress and health areas (Leidy, 1989; Newby, 1996). Consequences related to chronic illness, including chronic pain, disability, and economic burdens, turn into stressors interrupting lifestyles, which, in turn, cause more serious physical and psychological distress "by reducing the availability of positive life experiences" and "by compromising feelings of personal control" (Devins et al. 1993, p. 401).

Rheumatoid arthritis (RA), a chronic illness, is a systemic inflammatory disease of unknown etiology. According to the 1990-1991 National Health Interview Survey, about 40 million persons, 20% of the U.S. population aged 18 and over, were estimated to suffer from arthritis and rheumatoid diseases; and this number was predicted to be 60 million in 2020 (LaPlante, M.P., 1997). Fifty-nine percent (59%) of RA patients lose the capability to earn a full salary. Over 60% report the illness's interference with social life

and undergo problems in family life (Parker et al., 1995). Pain, deformity, limited mobility, lowered self-esteem, and difficulty in carrying out daily activities are the most frequently reported factors causing stress, and in turn, this stress threatens the psychological and physical health of RA patients. The prevalence of major depression is approximately 17-27 percent among RA patients (Mahat, 1997).

One's perception of uncertainty has been found to be highly associated with stress in RA. While about one fifth of RA patients are fortunate to see the symptoms disappear in two years, and only one tenth suffer a progressive course toward disability, the majority experience unpredictable disease activity of exacerbations or remissions (Mahat, 1997). This uncertainty reinforces the perception of uncontrollability which contributes to the development of helplessness. The perception of loss of power to control the situation has been found to be related to stress and depression (Cassidy, 1999).

Traditionally, anti-inflammatory drugs and anti-rheumatic drugs are used to reduce the progress of the RA syndromes and improve the quality of life of RA patients (Blumenauer, Cranney, Clinch, and Tugwelh, 2003). Because of the strong toxicity of these kinds of drugs, long term use may cause more problems to body systems. Other than drug intervention, cognitive coping has been applied for pain and stress management of RA. For example, problem-focused coping was found to contribute to a reduced level of depression; in contrast, emotion-focused coping was found to relate to an increased level of depression and perception of pain (Brwon & Nicassio, 1987). Therefore, the way patients cope with their illness-related stress may impact their emotional, psychological, and behavioral outcomes.

Leisure as a potential coping resource begins to emerge in the mainstream stress and coping research areas. While several researchers from other fields (e.g., Cassidy, 1999; Folkman, Moskowitz, Ozer, & Park, 1997) have mentioned the probable coping functions of leisure in their research, further efforts to explore and explain the mechanism of leisure coping are upon the shoulders of researchers in leisure fields. More and more stress and coping researchers in the fields of psychology and sociology have begun to realize that leisure is an ignored area but one that potentially contributes to reducing the level of stress (Sale, Guppy, & El-Sayed, 2000), reconstructing of the meaning of life (Parry & Shaw, 1999), and enhancing mental wellness (Hoge, Dattilo, & Williams, 1999). For example, Folkman et al. (1997) pointed out that meaningful leisure activities have positive effects on individuals encountering stress, and the study of leisure coping contributes to the knowledge base of stress coping. Cassidy (1999) acknowledged leisure as a neglected life domain, comparing to work and home. She pointed out that leisure experience can be both positive and negative, in that a positive leisure experience can help cope with stress while a negative one may be a source of stress.

Although contributions of physical activities to psychological well-being, e.g., anxiety and tension reduction, and depression reduction, were discussed by Wankel and Berger in 1991, Colemen and Iso-Ahola (1993) were among the first to attempt to explore the mechanisms behind stress and leisure coping. They proposed that leisure-generated self-disposition and social support serve as buffers against stress. Consistent with this hypothesis, Dupuis and Pedlar (1995) argued that family leisure activities foster a sense of social support which may improve family member relationships and moderate psychological stress. In the study of community leisure, Dattilo, Caldwell, Lee, and

Kleiber (1998) found that leisure provides the contexts for increased social connections that integrate community.

While identifying leisure's contribution to people's psychological well-being, Iwasaki and Smale (1998) stated:

> Leisure may provide opportunities for enjoyment or pleasure; optimal balance between skill and challenge; perseverance, personal effort in the improvement of skill and knowledge, and the development of a career in an activity; or the establishment and affirmation of self- and social identity, all of which in turn may enhance psychological well-being" (p. 26).

In the study of the benefits of physical activity, Csikszentmihalyi (1982) proposed that sport activities have potential benefits in the following four areas: personal enjoyment, personal growth, social harmony, and social change. Herzog, Franks, Markus, and Holmberg (1998) suggested that the development of self-concept through leisure activities is related to the increase in physical health and the decrease in depression in a sample of retirees. Kleiber et al. (2002) concluded that positive leisure experience not only protects people from stress but also helps restore life, and even can transform an individual's outlook of world and facilitate personal growth.

From their extensive research on leisure coping, Iwasaki and colleagues demonstrated their efforts to develop and examine the leisure coping model they hypothesized. Leisure beliefs and leisure coping strategies were identified as different coping strategies because of the different characteristics reflected with the two types of coping function. Leisure coping beliefs are relatively constant, representing dispositional coping styles people use to cope with stress, while leisure coping strategies are those

applied in specific situations. Iwasaki (2003) found that leisure beliefs work primarily through guiding leisure coping strategies rather than directly impact immediate health outcomes. In comparison with general coping, leisure coping surpassed the effects generated from general coping (Iwasaki et al., 2002).

In the field of arthritis, researchers have reported on the role of leisure as an effective intervention. LaPlante (1997) reported that people with arthritis tend to spend less time on leisure activities than those without arthritis due to fatigue and pain. Arthritis, however, may influence participation only in vigorous exercise, and is not necessarily a constraint in mild leisure participations for people with arthritis. In a three-year longitudinal study, van Lankveld Naring, van't Pad Bosch, and van de Putte (2000) assessed the relationship among different coping styles, psychological distress, and disease impact. After controlling for disease status, they found that behavioral copings (e.g., decreasing the level of activity) contributed to increases in psychological distress and worse health, while cognitive copings (e.g., comforting cognitions and diverting attention) were not related to changes in psychological distress over time.

Although leisure has been recognized as an important coping source, there are significant limitations in previous stress and leisure coping literature and many questions are waiting for answers. While there is no doubt about the role of leisure as a coping function on stress, debates exist on leisure's role as a general effect or merely as a buffer. If leisure serves as a general effect, then, regardless of the existence of stress, leisure influences health and well-being, and it will also be true that the absence of leisure will cause stress; if leisure functions as a buffering effect, it suggests that leisure has an effect only when stress exists, that is, it does not matter whether people have leisure or not

when there is no stress. Evidence from previous research showed mixed results; for example, in Stoll and Alferman's (2002) study, it was found that leisure time activity did not reduce the level of anxiety and psychosomatic complaints on subjects with lower stress. This suggests that leisure may have a buffering effect. However, Iwasaki (2003) suggested that leisure coping is independent from stressors, implying that leisure has the general effect of improving the general health and well-being no matter if stress exists or not.

The Purpose of Research

The purpose of this study was to explore the interactive role of leisure activities in the process of coping with stress among adults with rheumatoid arthritis. The stress coping function of leisure has been confirmed by many researchers (Cassidy, 1999; Colemen & Iso-Ahola, 1993; Iwasaki & Smale, 1998; Lazarus, 1999); however, the mechanism of leisure stress coping was still not clear. Furthermore, the influence of stress on the pattern of leisure has been neglected while most of the leisure researchers focused entirely on the influence of leisure on stress. The study of the interacting relationship between leisure and stress through the process of stress coping could expend our understanding of the role of leisure in the specific context.

Under the framework of naturalistic paradigm, the interview method was used to collect the rich, descriptive data. The interview method served appropriately to accomplish the goal of this study by recalling of the history. Using open-ended questions, participants were asked to describe their disease history as well as their corresponding leisure history. From their past stories, a clear picture of the changing pattern of leisure activities and the role of leisure in coping with RA related stress was obtained.

Need for the Study

With the linking of stress to be a major factor for various health problems, how to cope with the damage of stress has been the center of stress coping studies. Although some researchers mentioned the potential functions of leisure in coping with stress, the role of leisure as a coping strategy had not received enough attentions. Especially, for people with rheumatoid arthritis who are suffering chronic and tremendous pain, leisure may play an important role in reducing the level of stress. From a qualitative perspective, this study served to increase the understanding of the role of leisure in the process of coping with stress. Therefore, this study was warranted because:

1. There was the absence of a clear conceptual understanding of leisure stress coping in literature.

2. There was the absence of qualitative research methods applied in measuring leisure stress coping.

3. There was the absence of the study on the relationships between leisure coping and rheumatoid arthritis.

4. There was the absence of the study on the impacts of stress on the changes of leisure behaviors.

Delimitations

The intention of this study was to understand the role of leisure in coping with rheumatoid arthritis. Following the framework of naturalistic paradigm, the theory generated from the data was the working hypothesis for samples in this study only. It was not the intention of this study to generate the theory to the population; however, it did not mean that the possibility of generalizability did not exist. For those who had similar

backgrounds with the subjects in this study, the working hypothesis generated from this study would be, at least partially, generalizable. The study was delimited to the following:

1. Women who experience rheumatoid arthritis.

2. Interviews conducted to collect data relating to leisure stress coping

3. The constant comparative method used for data analysis.

4. The generalization within the subjects interviewed.

Limitations

The limitations of the study were:

1. The accuracy of the data depended on the accuracy of the memory from the subjects. If the subjects did not remember clearly about what happened before, the credibility of the data would be threatened; however, "even if some of our evidence is not entirely accurate this will not be too troublesome; for in generating theory it is not the fact upon which we stand, but the conceptual category that was generated from it" (Glaser & Strauss, 1967, p. 23). Additionally, the reconstruction of the history by the subjects was still meaningful to them, representing their current understandings of the past.

2. The ability of the subjects to tell their stories and express their feelings clearly.

Terminology

Axial Coding. A set of procedures whereby data are put back together in new ways after open coding, by making connections between categories (Strauss & Corbin, 1990).

Coding. The process of analyzing data (Strauss & Corbin, 1990).

Coping. Constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus and Folkman's, 1984, p. 141).

Emotion-focused coping. Coping strategies that include such responses as self-preoccupation, daydreaming, or emotional regulation (Endler, & Parker, 1993).

Grounded theory. An inductive approach to generate theory from data collected (Glaser & Strauss, 1967).

Leisure coping. Using leisure as a way of coping with stress.

Leisure coping beliefs. General beliefs about leisure functions as a way to cope with stress (Iwasaki & Mannell, 2000).

Leisure coping strategies. Behaviors or cognitions in the process of applying leisure to deal with stress in a certain situation (Iwasaki & Mannell, 2000).

Naturalistic inquiry. A world view proposing that there are multiple constructed realities; knower and known are inseparable; it is impossible to distinguish causes from effects; and inquiry is not value free (Lincoln & Guba, 1985).

Open coding. The process of breaking down, examining, comparing, conceptualizing, and categorizing data (Strauss & Corbin, 1990).

Problem-focused coping. Coping strategies that aim at solving the problem directly through processes like defining the problem, finding alternative ways, evaluating the consequences, selecting, and then acting (Lazarus, 1984).

Purposive sampling. In naturalistic inquiry, the purpose of sampling is not for generalization, but for the purpose of understanding extreme or deviant cases, typical cases, or critical cases (Lincoln & Guba, 1985).

Rheumatoid Arthritis. A systemic inflammatory disease of unknown etiology.

Stress. Refers to "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his/her resources and endangering his/her well-being" (Lazarus & Folkman 1984, p. 19).

Transactional model. A holistic view of stress that emphasizes on the process of the interaction between individuals and environment (Cassidy, 1999).

Chapter 2

LITERATURE REVIEW

The purpose of this study was to explore the interactive role of leisure activities in the process of coping with stress of adults with rheumatoid arthritis. Literature related to stress, stress coping, rheumatoid arthritis, and leisure coping are reviewed in this chapter. Different definitions of stress are discussed, along with descriptions of different stress models emerged from stress literature. Then, the relationships between stress and coping are included, following the section on the relationship between stress and coping with rheumatoid arthritis. In addition, the contribution of leisure coping to stress is introduced before a critique of literature.

Definition of Stress

That the term "stress" now has become a common word for almost everybody in everyday life has caused serious problems in conceptualization. Because of its broad boundary, stress may mean different things to different people. Therefore, it is very important to define "stress" in a scientific way in order to discuss it within the same scope and to create meaningful dialogues about stress research.

Although the term "stress" could be found as early as in the fourteenth century (Lazarus, 1993), it was Hans Selye who became the first person to use the word "stress" that he defined as "a nonspecific response of the body to any demand" in 1937 (Selye 1983, p. 2). Hans Selye, who also coined the term "stressor" to indicate the cause or source of stress, observed that although different diseases had different features, they all

had something in common which he called “The Syndrome of Just Being Sick.” Later, he adopted a term from physics—stress—to describe the force(s) that tends to strain a body.

As Selye’s work was primarily based on laboratory where stress was produced by researchers to examine the response from the body, some researchers questioned these “man-made” conditions and started to study stress in real life situations. Charmers (1981) viewed stress as the interaction of multiple relations between the individual and the environment. According to Charmers (1981), stress resulted from the inbalance of internal and external conditions. Internal conditions included individual needs, values, personal resources, and personal capabilities, while external conditions were environmental demands, environmental constraints, environmental supplies, and environmental supports. From a similar view, Trumbull and Appley (1986) noted that “stress results from a demand, real or perceived, beyond the real or perceived carrying capacity of the individual’s physiological, psychological, and/or social systems” (p. 34). Thus, stress is the discrepancy between the stressor and the coping ability of the person. This holistic view of stress provided a new way to define stress by integrating more factors that cause stress and putting people back into the real life situations; however, this life event approach tended to assign the life event with the same score for all people while ignoring the variations of different life events among different individuals in terms of the level of stress perceived.

Emphasizing the importance of cognitive function in stress process, Lazarus (1966) began to integrate psychological aspects into stress research. At the initiation of his research on stress, Lazarus preferred to view stress as a general term that included the perspectives of stress from physiology, sociology, and psychology rather than to define

stress based on any specific area. He stated that "stress is not any one of these things; nor is it stimulus, response, or intervening variable, but rather a collective term for an area of study" (Lazarus, 1966, p. 27). About 20 years later, however, from a relational perspective, he viewed stress as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his/her resources and endangering his/her well-being" (Lazarus & Folkman 1984, p. 19). For a long time**,** these different concepts of stress mixed in the stress literature. Gradually, most stress researchers accepted Lazarus's cognitive perspective of stress which provided a useful framework that empowered human beings actively interacting and coping with stress.

Stress Models

Different stress models have been developed in the stress literature according to the different perspectives through which stress was studied. Among them, three stress models—response model, stimulate model, and transactional model—have been identified as the most important representatives. Focusing on different perspectives, these models have greatly influenced the stress research by providing theoretical directions and supports.

Response Model

From a physiological perspective, Selye developed the response model of stress, which was called the general adaptation syndrome (GAS). He found that the body had very similar responses under stressful situations no matter what the stressors were. The responses from the body were the enlargement of the adrenal cortex, the reduction in size of the thymus and lymph glands, and the development of stomach ulcers. Three stages were identified in the GAS. First, in the alarm reaction stages, the body responds

immediately to the noxious agent, usually showing decreased temperature and decreased blood pressure, and then mobilizes the body defense system to fight back. If the body can survive from the first stage, it follows the resistance stage, in which the body becomes more adaptive to the demands and tries to go back to normal. However, if the body is experiencing continuous demands and cannot recover, the third stage, exhaustion, will be the results, where the situation becomes worse and worse and could end up with the complete loss of the capability of adaptation—death.

The response model focuses on the consequences of demands and attempts to measure the changes of behavioral, emotional, and physical symptoms as the index of stress. Behaviorally, some of us start smoking or drinking alcohol to release the stress; some may act aggressively; many people even commit suicide. Emotionally, stress may cause uneasiness, anxiety, depression, and feeling of frightened. Physiologically, under stressful pressure, the typical reactions are increased blood pressure, increased heart rate, and muscular tension. Frequently exposures of stress may lead to hypertension (Levi, 1996).

Research from the response perspective measured stress mainly in the laboratory and produced stress by using such methods as electronic shocks, heat, or cold on animals as well as on human beings. Critiques about the ethical issues and unrealistic stress conditions around their research methods (Appley & Trumbull, 1986) reminded stress researchers to study stress under the real life situation, which is the emphasis of the stimulus model.

Stimulus Model

According to the stimulus model, everyone is facing demands from the external world. For example, a student is facing the demand from school, a worker from his/her job, and a father or wife from the family. These demands, or stressors, stimulate individuals, continue to impose pressure on the body and the mind, and consequently cause damage to one's health (Derogatis, 1986). The stimulus model considers stress as a stimulus from the demands of environments on the person. Stressors an individual may encounter during one's life in terms of classification of the sources, frequency, and intensity of stress are identified and assigned with different scores indicating the magnitude of the influence of that life event (Perkins, 1986).

These life events, positive or negative, will cause changes and require the person to readjust in order to reach a new balance. Holmes and Rahe (1967) developed a list of 43 events that were believed to be able to cause different levels of stress on those who encountered one or several of these events recently. These events include death of spouse, marriage and divorce, vacation, and minor violations. Rahe (1968) found that those Navy officers who took part in the high risk duties experienced significantly more illness than whose duties were relatively less demanding.

Criticism about this approach has been around the self-report measures of life events and ignorance of individual differences. Cassidy (1999) identified three major criticisms toward this approach. First, there may be bias in life events report because those who report high levels of life events may be those who likely to report illnesses. Second, this self-report technique may collect high levels of life events just because some people have a negative worldview and tend to report that they encounter more stressful

events than those who are more optimistic. Third, some items in the life events scales measure life events and illnesses simultaneously. The overlap between the two terms is a bias when there are findings of relationship.

Transactional Model

The transactional model, or process model, provides a holistic view of stress that addresses the issues such as the interaction between individuals and environment, appraisal and reappraisal, and coping. The cognitive process is viewed as important and influential to the impact of stress on health and well-being (Andrykowski, Boerner, Salsman, & Pavlik, 2004). Fit between the person and environment represents a balance between the person's capability to cope and the demands from the environment imposed upon the person. When demands exceed the person's ability to manage, stress occurs (Kaminoff & Proshansky, 1986).

This process can be illustrated by Lazarus and Folkman's (1985) stress appraisal model (Figure 1). When there is a stressor, people begin to think if it is a threat (primary appraisal) and if it can be coped with (secondary appraisal). With more information available, people will reappraise the situation. When people evaluate that the stressor has no relevance, is benign, or positive to them, there will be no stress on them. People will experience stress only when they evaluate the stressor as a threat, harm, loss, or challenge. According to Lazarus and Folkman (1985), primary appraisal and secondary appraisal happen simultaneously, rather than primary appraisal comes first, and secondary appraisal follows. The process of reappraisal could take place many times while the situation changes, such as gaining more coping resources, knowing more about the stressor, or possessing more experience about how to deal with that kind of stress

condition. For example, if the person keeps encountering a certain kind of stressor, s/he may then learn more about it and have stronger resistance to that kind of stressful situation.

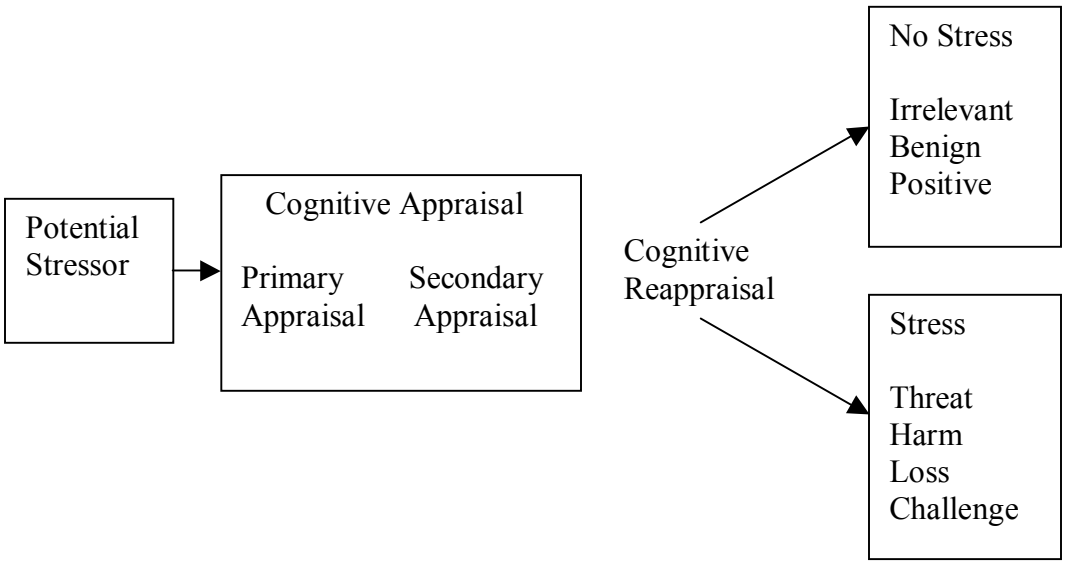

FIGURE 1. Lazarus and Folkman's (1984) Stress Appraisal Model

This approach, according to Casidy (1999), puts the person at the center with an emphasis on meaning from the constructivist perspective and its foundation is on the "phenomenological and existential strands in philosophy" and focuses on "the world inside the mind, the phenomic world" (p. 101). It is through this cognitive appraisal process that the information becomes meaningful and then directs reactions to stimulus.

Therefore, the main difference between the stimulus model and the transactional model is that theorists supporting the stimulus model believe that when demands exist, there is stress, while theorists of transactional model hold that it is through the interaction between person and environment that a person experiences stress, through which the

appraisal of threat must be perceived by the person. Moreover, both the response model and the stimulus model neglect the psychological function of coping in reaction to stress.

Stress and Coping

Although stress may cause damage to the body, it may not affect everyone. That is because the body and mind have developed established systems to cope with stress automatically. Coping has been the focus of stress research and the relationship between coping and health has become the interest of researchers from different disciplines. Meanwhile, different coping styles as well as factors, such as social support, personality, and belief that have impacts on coping process, have been identified.

Definitions of Coping

Coping is "the multi-dimensional process that refers to the ways in which people deal with stress" (Thompson, Gil, Abrams, & Philips, 1992, p. 434). Specifically, it is "an individual's cognitive, affective, and behavioral attempts to reconcile a perceived discrepancy between situational demands and personal capacity or competence" (Endler & Parker, 1993, p. 386). According to Lazarus's (1984) appraisal theory, the primary appraisal is to recognize if threat or stress exists and if it is irrelevant, benign-positive, or stressful while the second appraisal is to evaluate if it is controllable or not and to choose the appropriate coping strategies to deal with it. Therefore, coping implies efforts inputted into managing stress (Holroyd & Lazarus, 1986).

Krohne (1986) identified several characteristics of coping. He thought that coping is a process that includes both behavioral and cognitive acts, which aim to remove the imbalance between the capacities and demands that are perceived as taxing or even

exceeding his/her capacities. People differ in the coping ability and even differ in the ability to recognize the most effective strategies serviceable to reduce stress.

Krohne's idea was well reflected in Lazarus and Folkman's (1984) definition of coping to which was referred "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141). This definition implies that coping needs efforts and is part of the secondary appraisal, where appraisal of the person's coping resources is involved. They further proposed two forms of coping: emotion-focused coping and problem-focused coping.

Emotion-focused Coping

When the appraisal of the situation is that it is impossible to change the environment to reduce stress, people are more likely to choose emotion-focused coping strategies in order to regulate the emotional response to the problem (Lazarus & Folkman 1984). Lazarus (1991) argued that emotions play a central role in our lives. He defined emotions as "organized psychophysiological reactions to news about ongoing relationships with the environment" and they change with "changes in the person-environment relationship" (p. 38). By regulating their emotions, such as avoidance, distancing, denial, or looking on the bright side of things, individuals reduce the level of stress perceived (Healy & McKay, 2000).

Some forms of emotion-focused coping attempt to change the way the situation or problem is constructed without changing the reality. This can be treated as reappraisal of the stressor. Notice that by changing the cognitive appraisal of the threat (e.g., it is not as important as I thought) stress is successfully coped with. Other emotion-focused coping

strategies may not involve changing of the cognitive appraisal of the situation, such as selective attention, avoidance. Emotion-focused coping may lead to certain behavior changing, e.g., engaging in leisure activity, drinking, or smoking to get one's mind off a stressful situation.

Applying the emotion-focused coping theory, Hayes (1987) developed an acceptance-based form of psychotherapy, called Acceptance and Commitment Therapy to treat depression. This emotion-focused approach emphasizes commitment to goals and acceptance of undesirable work circumstances. By treatment of this therapy, Bond and Bunce (2000) found that employees in a media organization significantly improved their mental health after three months of treatment.

Problem-focused Coping

On the other hand, problem-focused coping strategies are more preferred when situations are appraised to be able to change. Problem-focused coping strategies aim at solving the problem directly through processes like defining the problem, finding alternative ways, evaluating the consequences, selecting, and then acting. Problem-focused coping strategies can direct at environment as well as at self, such as cognitive and motivational changes, that is, reappraisal of the situation.

Nezu et al. (1989) define problem-solving style as "the cognitive-behavioral process by which individuals identify or discover effective strategies for coping with problematic situations encountered in daily living" (121). He identified five stages in this process (Nezu, 1987):

1. Problem orientation
2. Problem definition and formulation

3. Generation of alternative solutions
4. Decision-making, and
5. Solution implementation and verification

Clearly, this five stage process combined Lazarus' idea of primary appraisal and secondary appraisal and developed a practical way to apply the cognitive appraisal theory to situations when person encountered stress. The effective application of this five state process will provide the person resistant to external stressors and protect from depression.

Folkman and Lazarus (1980) suggested that women are more likely than men to use emotion-focused rather than problem-focused coping. Women tended to use more avoidance and symptom focused coping (Stone & Neale, 1984) and showed significantly more psychological and physical symptoms of stress than men (Jick & Mitz, 1985). Women with stressful jobs scored significantly worse than men on physiological health variables (Lundberg, 1986). Doyle and Hind (1999) suggested that women academics might be more likely to report their experienced job strain to others which might be a significant coping factor, would help to explain why more women than men report excessive pressure from all sources. However, there are findings showing that no difference in coping between genders. For example, Martocchio and O'Leary (1989), in a meta-analytic study found that men and women were equal in term of the experience of stress level. Further research on gender differences is still needed to clarify the confusing findings in this area.

Social Support and Stress Coping

Social support has been studied as an important factor in coping with stress for decades (Gerhardt, 1979; Cutrona, Russell, & Rose, 1986; Thoits, 1995). Cohen and

McKay (1984) suggested that social support is a multidimensional construct that include emotional support, material support, informational support, companionship, and esteem support. Social support serves as a buffer against stress. Langford, Bowsher, Maloney, and Lillis (1997) proposed that social support provides positive health status such as personal competence, health maintenance behaviors, effective coping behaviors, perceived control, sense of stability, recognition of self-worth, positive affect, psychological well-being, decreased anxiety, and decreased depression.

A wide range of literature has showed clear evidence that social support is positively linked to stress mediating. Krohne and Slangen (2005) found that social support is associated with the level of stress perceived by patients undergoing surgery. Both subjective and objective stress indicators were assessed before, during and after surgery. Patients who perceived higher social support demonstrated less anxiety and stay shorter in the hospital than those with low support. In the work environment, Shirey (2004) suggested that social support empowers employees, reduces job strain, and enhances motivation and job satisfaction.

While appropriate amount of social support is positive to psychological well-being, excessive social support may cause stress. Although usually social support provides a sense of personal control, Krause (1987) argued that the relationship between support and perceived control is nonlinear. Feelings of personal control decreases after social support increased to a certain level.

Regarding the mechanism of social support in buffering against stress, no one can give a clear explanation. Blonna (1996) pointed out that those who are able to obtain more social supports know how to take advantage of resources better than others and

have better social skills. Therefore, it is the person's ability to acquire what they need from the social resources, rather than the social resources itself, that determines its function. Additionally, research shows that perceived social support, not objective support better predicts individual difference in stress levels and health (Cassidy, 1999).

Personality and Stress Coping

A significant amount of effort has been devoted to studies of the relationships between personality and stress coping styles. Researchers wonder if individuals with different personality choose different coping strategies under the same stressful situation. Mainly three types of personality, that is, neuroticism, hardiness, and Type A personality, have been identified and reported to be associated with stress.

Neuroticism is trait anxiety. Individuals with neuroticism personality are prone to anxiety. Uehara, Sakado, Sakado, Sato, and Someya (1999) examined 60 outpatients who were in remission from major depressive disorder and the relationships between coping strategies and personality traits. The results from this study revealed that patients with neuroticism personality are more likely to use emotion-focused coping strategies. A wide range of disorders has been suggested to be associated with neuroticism and its coping style.

Hardiness is used to describe individuals who are dedicated to their work or anything they engaged in, have a strong sense of self-control, and are willing to face the challenges. Three components are distinguished in this personality trait: commitment, control, and challenge. Commitment means the level of involvement in the events. Control measures the level of control a person perceived. It may be that the perceived control is not objectively true, but this false perception of in control still has positive

effect in dealing with stress. Challenge manifests the tendency to see problems as challenges rather than threats. Evidence has shown that one with hardiness personality helps resist stress. For example, Simoni and Paterson (1997) reported that nurses with greater hardiness had lower rate of burnout. Novack (1989)'s study supported that cognitive hardiness was significantly associated with psychological well-being. Persons with hardiness have been found to be more likely to use problem-focused coping (Williams, Wiebe, & Smith), which is one of the reasons that hardiness personality contributes to stress reduction.

Among research in personality and stress coping, Type A personality has received the most attention. People with Type A personality have been described as being "extremely competitive, high-achieving, aggressive, hasty, impatient and restless, and in addition exhibiting explosive speech patterns, tenseness of facial muscles and the appearance of being under pressure from time and responsibility"(Cassidy 1999, p.90). Evidence of the significant relationship between Type A personality and coronary heart disease has become one of the major reasons that Type A personality has been extensively studied (Contrada, 1989; Dua, 1993).

Although there is evidence supporting the personality approach, many studies have reported that there is no relationship between personality and stress. Furthermore, the assumption that personality is stable over time and situation has been questioned by many psychologists (Cassidy 1999). Obviously, one's personality can be relatively stable over period of time. If, however, personality is treated as a fixed factor and individuals are stereotyped, it will cause the studies to be oversimplified and not realistic.

Belief and Stress Coping

Lazarus and Folkman (1984) pointed out that belief is one of the most important person factors in the process of cognitive appraisal and stress coping. Especially, beliefs about personal control and religious beliefs have significant impact on cognitive appraisal. Those who feel possessing more control over the environment tend to appraise problem as challenge. In contrast, those who feel powerless tend to appraise problem as threat.

Beliefs about control are mainly based on the feelings of mastery and confidence. Confident people are more likely to believe that they have the control of the situation by themselves. People may believe that events are determined by luck, chance, fate, or others if they are not confident on their capability in dealing with the stressful person-environment relationship. For example, women who believe that powerful others have control of their lives are more likely to feel depressed (Milgrom & Beatrice, 2003). Therefore, one's beliefs can significantly influence one' coping style and health outcomes.

Similar to personality factors, one's belief system is relatively stable as well as changeable over time and situations. Correlations between beliefs and coping styles must be treated as situation specific. Additionally, although beliefs are factors affecting coping decisions, beliefs themselves are not coping in which efforts must be made to manage stress perceived (Lazarus & Folkman, 1984).

Stress and Coping with Rheumatoid Arthritis

Stress associated with RA has been found to be influential to patients' psychological well-being, physical health, as well as their life satisfaction (Caroline et al., 2001; Melanson & Downe-Wamboldt, 2003). While many researchers attempted to identify the stressors for RA patients, a tremendous amount of studies, searching the

ways to alleviate the affiliation of stress experienced by RA individuals (Williams & Fye, 2003), have suggested that coping strategies used by RA individuals are related to the level of stress they perceived. However, the stress experience, coping decisions, and the meaning of the experience can be very individually different.

Stressors for RA individuals such as pain, disability associated limitations, and the uncertainty about the disease, have been identified in many studies. For example, with a convenience sample of 53 RA patients, Mahat (1997) identified that pain was the most frequently perceived stressor, followed by limitation in mobility, difficulties in carrying out activities of daily living, and helplessness. Through a one-year longitudinal study, Melanson and Downe-Wamboldt (2003) reported the relatively similar results, but with different order in terms of the level of stressors. Three interviews of participants were conducted to examine the perceived stressors and coping strategies by older adults with RA. Physical limitations, such as limitations on mobility, hobbies, and home workplace, were reported by the majority of respondents as their main illness-related stressor over the three time periods, while lack of control over their life and pain were identified as the second and third stressors.

A feeling of helplessness reported in many studies is a common experience for individuals with RA. RA individuals often feel that they have no control over this chronic, unpredictable disease with no known cause or cure. Such a feeling increases the level of stress and leads to depression. Chaney et al. (1996) found that the attributional style of RA individuals was a determinant variable in the process of depression because different attributional styles could change people's perception of control. Those who attributed negative outcomes internally were more likely to feel that they had less power of control.

On the other hand, those who tended to attribute negative outcomes externally were more likely to think that they have more control over their life and illness.

While stress damages RA patients' psychological well-being and physical condition, the quality of life may be ruined at the same time. In a study comparing the differences between people who had arthritis and those who did not, Husaini and Moore (1990) found that black older people with RA experienced lower levels of life satisfaction than those who did not have arthritis. They also reported that the severity of the arthritic conditions was associated with decreased life satisfaction because higher levels of disability were associated with higher levels of depression.

While different coping strategies have been employed to reduce the level of stress in RA, each coping strategy may have different effects on stress. In Mahat's (1997) study, optimistic strategy was reported as the most frequently used and the most effective coping strategy, followed by confrontive, self-reliant, and supportant coping strategies. Both problem-focused (confrontive) and emotion-focused (optimistic) coping strategies were used by RA patients to manage this stressful condition. The descriptive data collected from Melanson and Downe-Wamboldt's (2003) study revealed that confrontive coping was used most frequently by the respondents, followed by palliative, supportant, fatalistic, and self-reliant coping strategies, while changes could be found across the three time periods. Emotion-focused coping has been found to be associated with negative affect over time (Griffin, Friend, Kaell, & Bennett, 2001).

Researchers, however, have paid little attention to the individual differences in stress and coping. Evidence shows that the demographic variables are associated with the level of stress and the selection of coping strategies. For example, in a study of the

relationship between age and depression in RA, Wright et al. (1998) reported that among those who were diagnosed with RA, middle-aged or younger group (people who are 45 or below) showed significantly higher level of depressive symptoms than their older counterparts. They found that younger persons with RA also reported higher levels of stress which could explain why they experienced more depressive conditions. Social economic conditions have been found to be a significant factor affecting RA patients' selection of coping strategies. Downe-Wamboldt and Melanson (1998) indicated that social economic conditions of people with RA had a direct impact on coping strategies selections and had an indirect impact on psychological well-being in a sample of the elderly with arthritis. In their study, patients with arthritis with better social economic conditions tended to use confrontive coping strategies while those with lower social economic conditions tended to use evasive coping. Additional empirical studies with more individual variables will help further understand the interactive relationship between different individuals and stress and coping.

Stress and Leisure Coping

Leisure has been recognized to be an important coping resource for a long time in the field of stress research. However, it was until when some leisure researchers who found the value of leisure coping with stress that the mechanisms of leisure coping functions are revealed and the effectiveness of leisure coping strategies are examined. Certainly, leisure stress coping is still in its infancy. Evidences from both theoretical and experimental studies are needed to support or revise the leisure coping models proposed in the literature.

Leisure Coping versus General Coping

The relationship between leisure coping and general coping without leisure elements has been measured. Applying the leisure coping model developed by Iwasaki and Mannell (2000), Iwasaki (2001) examined the effects of leisure coping and general coping on daily hassles among 85 university students. Daily hassles, such as conflicts with friends, frustrations from exams, and deadline pressures, were believed to be able to cause a tremendous amount of stress to the students. Immediate coping outcomes, mental health, and psychological well-being were measured according to the coping reports of most stressful events these students encountered in two weeks. Results showed that leisure coping is significantly correlated to these indicators and is more effective than general coping.

To further examine the differences between general coping and leisure coping, Iwasaki et al. (2002) conducted three stages questionnaires measurement on samples randomly selected in Canada. At stage one, researchers collected data of respondents' initial health status and leisure coping beliefs as well as demographic information. At stage two, conducted one month later after stage one, respondents were asked to report stressors encountered, coping strategies (general coping strategies and leisure coping strategies) applied, and immediate coping outcomes generated during the past month. One month after stage two, stage three was conducted at which researchers measured respondents' health status again to see if any changes occurred. Results showed that leisure coping generates better stress coping outcomes than general coping. The effect that coping is positively related to mental health was only demonstrated by leisure coping, not by general coping. Specifically, they found that leisure palliative coping and leisure

companionship were positively associated with mental health, whereas leisure empowerment with physical health.

Leisure Coping Models

In discussing the relationship between leisure benefits and stress reduction, Ulrich, Dimberg, and Drivers (1991) stated that temporary escape in leisure activity, both passively (e.g., mediation, and daydreaming) and positively (e.g., traveling to a recreation site), makes the individual gain a sense of control over the stressor. They predicted that this should not be the only stress-mediating function of leisure. In the field of leisure stress coping studies, two models have been proposed by Coleman and Iso-Ahola (1993) and Iwasaki and Mannell (2000).

Leisure Buffering Model. Coleman and Iso-Ahola (1993) proposed a buffering model (Figure 2) linking leisure coping and health, in which leisure-generated social support and leisure-generated self-determination dispositions are identified as two most important buffers against life stress. Socialization has been found to be one essential reason for people involving in leisure activities (e. g., making new friends and establishing a sense of belonging to a group). Through the process of socialization, people might obtain social support. Even it was just the perception of the availability of social support, not the actual one, could buffer the impact of stress. Furthermore, Wethington and Kessler (1986) argued that the former was even more important than the latter.

Coleman and Iso-Ahola (1993) suggested that friendships and companionship through leisure could provide social support. Another buffer, self-determination, was discussed in two ways. One was associated with personality; the other with leisure.

Certain types of personalities, such as locus of control and hardiness, were characterized as consistent with self-determination. People who were categorized under these types of personality showed better resistance to stress. In terms of leisure, it provided the channel for people to experience and to develop the sense of self-determination. In addition, they pointed out that social support and self-determination were interconnected. For example, a person who lacked of social competence would be more likely to present isolation from the outside of the world. Although admitted the buffer effect of leisure, they argued that leisure coping, like the other coping strategies, only has effects on health when stress presents. It has little effects if the person is healthy and in low stress.

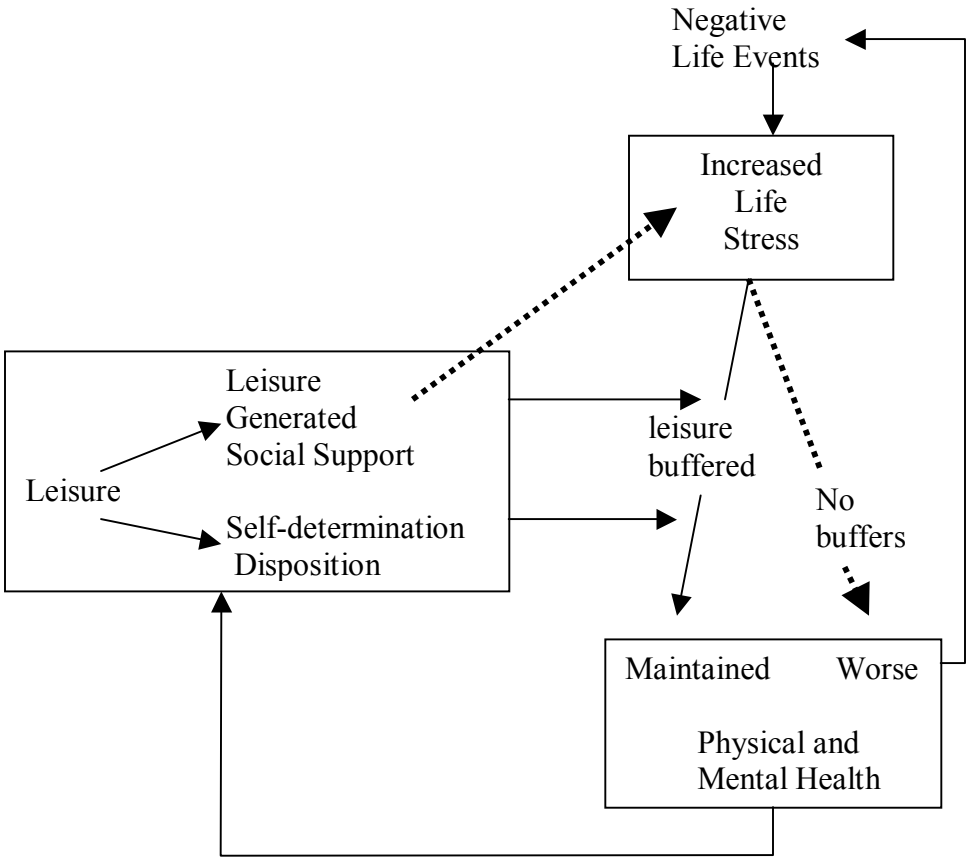

FIGURE 2. Coleman and Iso-Ahola's (1993) Leisure Buffering Model

Colemen's (1993) study supported the conclusion that leisure self-determination dispositions, particularly perceived leisure freedom, buffer against life stress to help people maintain good health when life stress was high. Surveyed 51 women and 51 men, ages ranging from 20 to 81 years, he found that higher levels of life stress were significantly correlated with more serious illness. Those with lower perceived leisure freedom and higher level of life stress were more likely to experience more serious illnesses. In contrast, those with higher perceived leisure freedom showed more resistance to life stress. According to Colemen (1993), however, leisure factors (e.g., leisure based social support, perceived freedom, and intrinsic motivation) did not have an overall effect on health when stress was not accounted. In contrary to previous research, Colemen (1993) failed to find evidence that leisure generated social support was a buffer against negative life events. This might imply there was a complex relationship between social support and health. There may be other factor(s), existing between social support and health, which has a direct impact on health. For example, Spitzer, Bar-Tal, and Golander (1995) argued that it was through the mediating effect of control that social support has a significant effect on stress. Their study rejected the commonly accepted research conclusion that social support functions as a buffer against stress. They also found that both socio-economical status and perception of the adequacy of information positively and significantly influenced the mediating effect of control.

Although Coleman and Iso-Ahola (1993) identified two of the most important leisure characteristics on stress coping, many other important aspects of leisure which have the potential to contributing the stress coping have been neglected until Iwasaki and

Mannell (2000) provided a comprehensive analysis of leisure coping mechanism, suggesting a multiple dimensional model.

Hierarchical Dimensions Model of Leisure Stress Coping. Expended from Coleman and Iso-Ahola's (1993) two leisure coping dimensions (self-determination disposition and social support), Iwasaki and Mannell (2000) proposed the hierarchical dimensions model of leisure stress coping, in which three levels were identified (Figure 3). The first coping level included two dimensions, that is, leisure coping beliefs (general beliefs about leisure functions as a way to stress coping) and leisure coping strategies (behaviors or cognitions in the process of applying leisure to deal with stress in a certain situation). At the second level, leisure autonomy and leisure friendships were under leisure coping beliefs, while leisure companionship, leisure palliative coping, and leisure mood enhancement under leisure coping strategies. Leisure companionship was distinguished from leisure friendships based on if it was a perception or an actual act, though both of them were a form of social support. Leisure palliative coping provided people with a time-off from stressful states or events. Some types of leisure activities, if not all of them, served as mood enhancement function, which was demonstrated to be able to reduce negative mood while enhancing positive mood. A third level was only available for leisure coping beliefs, where leisure autonomy consisted of self-determination disposition and empowerment, and leisure friendships were specified as emotional support, esteem support, tangible aid, and informational support. Supported by Coleman & Iso-Ahola (1993), leisure's self-determination disposition buffered against stress. Leisure empowerment was the belief that people have the power and control of their rights and choices in leisure which provides the contexts to express themselves

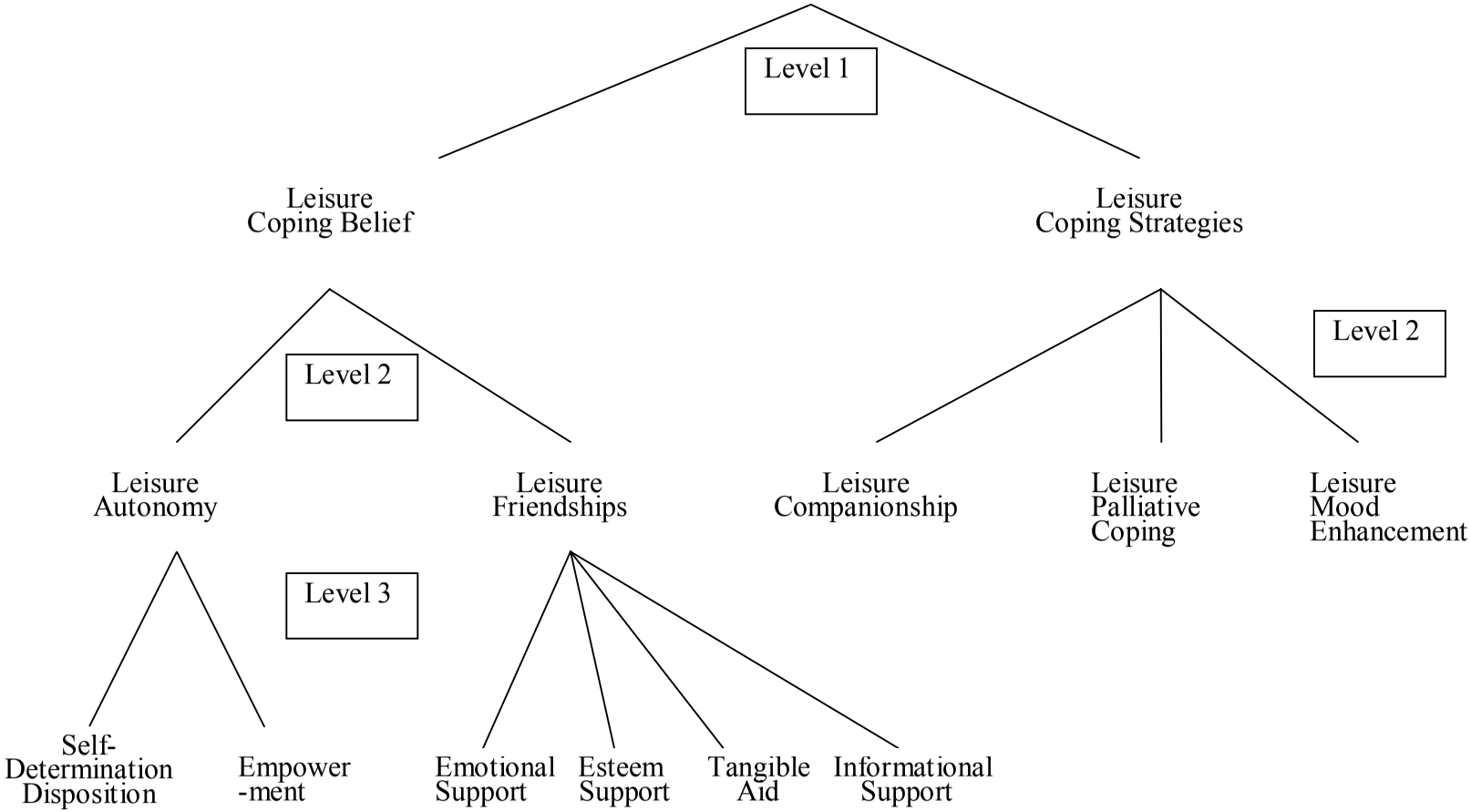

FIGURE 3. Iwasaki and Mannel's (2000) Hierarchical Dimensions of Leisure Stress-coping

freely and develop self. Furthermore, leisure is social. Through leisure friendships, people with stress could receive emotional support, esteem support, tangible aid, and informational support to help them moderate stressful events.

Iwasaki (2003) compared different models of leisure coping to explore the mechanisms of leisure coping in relation with stress and health outcomes. After the examination of 132 police and emergency response services employees who completed the three stages study, one model best predicted leisure coping strategies, immediate adaptational outcomes, and health. In this model, leisure coping beliefs and strategies are independent from stressors, that is, they promote positive immediate adaptational outcomes and health regardless of the fact that if stressors are present or not. Results also supported the distinctions between leisure coping beliefs and strategies. Leisure coping beliefs did not impact on immediate adaptational outcomes. It was more likely to serve as an antecedent for the use of leisure coping strategies. In other words, leisure coping beliefs help shape or guide the operation of leisure coping strategies. However, the author warned the limitation of generalization of this study because the subjects used in this study worked under beyond normal stress conditions.

Leisure Participation and Health

A large body of research has focused on the benefits of leisure participation in health promotion. Engaging in leisure activities has been found to be positively associated with improved health, although different types of leisure activities may have different effects on human being's physical body, mental health, or both. Moreover, mechanisms of the function of leisure participation in improving health have become an interested research area for the last two decades.

Participation in physical activities helps maintain health and prevent serious diseases. Drawn from the data of a 12 years study, Tanasescu et al. (1994) found that men who ran for an hour or more per week had a 42% risk reduction of coronary heart disease(CHD) compared with men who did not run. Men who trained with weights fir 30 minutes or more per week had a 23% risk reduction compared with men who did not train with weights. Rowing for 1 hour or more per week was associated with an 18% risk reduction. However, non-vigorous activities might not have the same benefit for CHD and men engaging in regular aerobic exercise—such as cycling, swimming, fast walking, badminton, and jogging, showed stronger and more consistently lower CHD incidence than comparable men reporting equally energetic and frequent heavy work in the garden or house (Paffenbarger, Blair, & Lee, 2001). In older adults, an active lifestyle has been found to attenuate the age-related loss of bone and muscle mass, as well as improve functional capacity and quality of life (Andersen et al., 1997). In addition, Martinez et al. (1997) reported that the time spending in physical activity was related to the risk of colon cancer. In their study, women who participated more in leisure-time physical activity hade a significant lower chance of incidence of colon cancer.

For the unemployed, leisure activities provide important role in reducing functional deprivation along with the experience of losing a job. Deprivation associated with unemployment, including losses of shared experiences, personal identity, collective purpose, enforced activity, and time structure, has been found to produce low self-esteem, poor psychological health, and reduced life satisfaction (Evans & Haworth, 1991). However, meaningful leisure activities provide time structure, promote self-identity,

enhance self-esteem, and therefore, reduce the perception of latent deprivation (Waters & Moore, 2002).

For older people, leisure participation facilitates to establish self-identity, enhance physical health, protect cognition, and increase life satisfaction (Richards, Hardy, & Wadsworth, 2003). Involvement in physical activity provides older people with an enjoyable environment where they are less likely to feel useless and nonfunctional than those who disengaged from activity (Guinn, 1990). Searle, Mahon, Iso-Ahola, Sdrolias, and van Dyck (1998) reported that leisure participation enhanced the sense of independence and improved psychological well-being among the elderly. This can be explained from the theory about the effect of perceived control on health. That people feel that they are in control of their lives in leisure activity helps maintain both psychological and physical health. In the contrary, giving up control may lead to feelings of helpless and meaningless of live.

Additionally, studies support that older people who engaged in different types of leisure activities may obtain different benefits. Maintenance of high-demand leisure is more likely to be associated with greater physical health, while maintenance of low-demand leisure activities is more likely to be associated with lower physical health. However, maintenance of low-demand leisure activities even benefits more on mental health than high-demand leisure activities (Everard, Lach, Fisher, & Baum, 2000). For instance, Li et al. (2001) found that Tai Chi, an exercise with lower-impacted and slow movements, increased psychological well-being for the elderly. Psychological indexes were measured at three points: base-line, 3 months, and 6 months. Significant improvements in psychological well-being were reported after the 6-month Tai Chi

exercise. The Tai Chi group showed significant reductions in depression, negative affect, and psychological distress and increases in perceptions of life satisfaction, positive affect, and overall health.

Iwasaki and Smale (1998) studied the relationships between changes in level of leisure participation/the importance of leisure goal and change in positive/negative psychological well-being. Data were obtained from Canada Fitness Survey in 1981 and 1988 (Campbell's Survey on Well-Being), based on randomly selected samples. Change in level of leisure participation was indicated by measuring change in diversity, change in frequency, and change in intensity of leisure participation. Change in the importance of leisure goals was indicated by measuring change in relaxation, change in socializing, change in enjoyment, change in feel better, change in challenge, and change in appearance regarding their leisure goals. Differing effects caused by chronic health problems and life transitions were examined by classifying the respondents into different groups based on different health and life status (e.g., those who reported neither chronic health problems nor life transitions, those who married, those who had become widowed). Gender differences were also considered in the analysis. They found that men and women responded differently after they lost their spouses, where men showed a significant reduction in negative psychological well-being when compared to women. Married men reported a significantly reduced frequency of leisure participation, while retired men showed a significantly increased frequency of leisure participation. Retired women reflected a significant need of socializing in leisure, while women who were in widowhood reduced the importance of socializing in leisure. Compared with the other

groups, only men who lost their wives reported the significantly increased importance on the goal of enjoyment or fun in leisure.

Leisure Coping and Negative Life Events

Obviously, negative life events are among the most dangerous sources of stress imposed on the victims; however, if dealt with appropriately, positive outcomes may be yielded from these negative experiences. Growing recognition of the positive outcomes of stress, such as stress-related growth, positive personal changes, benefit-finding, and meaning-based coping has been explored as a new look on stress (Somerfield & McCrae, 2000). Due to its unique characteristics, leisure has been found to be useful in reducing and recovering from the negative effects of destructive life events.

In their study of negative life events, following the idea of positively-toned emotions presented by Lazarus, Kanner, and Folkman in 1980, Kleiber et al. (2002) proposed four functions that leisure can help transcend negative life events. First, involvements in any kind of leisure activities can distract people from the traumatic event they just encountered. By keeping their minds off the negative event, they reduced the level of stress which may cause severe damage to mental and physical health. The diversion of their minds could provide opportunities for them to reinterpret the negative event and foster positive experiences and thoughts. Second, leisure activities can create optimistic view of future. Features commonly characterized in leisure, such as humor, amusement, and excitement, have been found to be linked with optimism. Leisure generated positively-toned experiences, not only serving as a temporarily place to escape, but also contributing to the reappraisal of the negative life events and openness for a new life with hope and meaning. Next, leisure can help people restore from the negative life

event. The seeking for continuity through leisure helps adjust the changes of life after a trauma. Furthermore, in leisure, a person experienced a negative life event has the chance to regain the feelings of control, freedom, and competence which are essential to the feeling of reconnection with past, the feeling of backing to be normal, and the reconstruction of self. Finally, engagements in leisure activities can help people transform from past. After the changes caused by an unexpected event, people may search for new ways of living. Engaging in new leisure activities to make new friends and learn new skills helps them establish a new lifestyle.

In addition, leisure has been found to be useful in coping with substance misuse. For example, Hood (2003) studied the functions of leisure on the recovery of women who are addictive to alcohol. From a qualitative perspective by using a focus group of three women, Hood (2003) found that the meaning of leisure for these women is different before and after sobriety. Before sobriety, leisure is just the time to drink. After abstinence, leisure becomes a tool to overcome the addiction by keeping themselves busy and providing a structure of time. Leisure, more importantly, not only helps them recover from alcohol, but also brings them a new life, where they start to learn, accept, and respect themselves. Thus, involvements in leisure display to be a critical momentum in the process of healing and moving beyond it.

For people with RA, exercise intervention has been found to be essential to maintain and increase their physical capacity. Rall and Roubenoff (2000) found that, after 3 months of resistance strength training, RA patients demonstrated improvement in strength, reported less pain and fatigue, and achieved better performance in walking and keeping balance. Lundgren and Stenstrom (1999) reported that muscle relaxation training

increased muscle function and therefore improved their quality of life in a study with people with RA. It should be noticed that most of them have to alter leisure time activities and experience a reduced level of leisure satisfaction (Lasson, Nived, & Eberhardt, 1998). For instance, in a study of the effect of RA on socio-economic consequences, Albers (1999) reported that due to RA, 57% of the patients had changed leisure time activities to activities with a lower demand on functional capability and about half of them were not satisfied with their recreation. Therefore, adaptation should be considered for RA patients in their leisure activities.

Critical Analysis of Past Research

Although stress research has evolved from stimulus/response perspective to process perspective, which reflects a more realistic situation, problems with the measurements of stress and individual differences are still producing contradictory results and impeding a clear understanding of stress and coping. Regarding the research done in the field of leisure stress coping, further studies on the role and mechanism of leisure as a stress coping strategy are needed to clarify the contradiction existing in the current literature.

For example, when studying specific health problems, application of general coping scales (e.g., the Ways of Coping Checklist, Folkman & Lazarus, 1980), representing the general population, becomes inappropriate. To overcome this problem, modifications have been made by changing some of the items when examining a special population; however, these modifications may lead to new kinds of problems, such as questionable reliability and validity, and limited generalization and comparison because of differences in instruments applied (Endler & Parker, 1993).

Another problem with these stress and coping scales is the self-report approach, which is mostly applied in this field of study (Endler & Parker, 1993). Subjects were asked to report their stress conditions in different scales based on their own perceptions. The poor validation and inconsistency of the self-report scales caused by its subjectivity feature compel to interpret the data collected cautiously. Furthermore, most self-report scales failed to consider individual differences in terms of socialeconomic status and capabilities.

As a relatively new direction for leisure researchers, stress research in leisure field is still limited. Also, controversial findings from the limited number of research relating to stress and leisure make any final conclusions difficult. The following two reasons are among the others that instigate the controversy among leisure and stress coping literature. One is because of the differences on definitions of concepts related, such as health and leisure. For example, based on the narrow way to define health in their study, Colemen and Iso-ahola (1993) viewed health as the absence of illnesses, while most of the other researchers defined health from a broader sense. Sometimes people report they are not healthy when they just feel chronic fatigue but without any diagnosed diseases. Others who have certain forms of disease may perceive that they are in good health because they are still physically active and energetic. Other than physical health, the way to deal with psychological well-being might generate significant differences in the results. Mental health is more subjective to be influenced by stress than physical health. The narrow way to define health, deliberately precluding psychological well-being as one indicator of health, will consequently diminish the power of the effects of leisure on stress coping and maintaining health. Other than these, the initial health status

may also influence the effect of leisure stress coping. How to define leisure, especially how to deal with the inclusion or exclusion of physical exercise and sports, can produce different research results (Iwasaki et. al., 2002; Zuzanek, et al., 1998). Obviously physical exercises and sports have more positive effect on physical health than social leisure activities which reveal more influences on a person's psychological well-being.

The other way that may cause this controversy is because of the controlling of demographic factors (e.g., age, gender, education, income). For instance, Zuzanek et al. (1998) reported that "the moderating effects of physically active leisure may be age and life-cycle specific. Physical active leisure seems to contribute to lower stress levels among the elderly, but not in the lives of busy life-cycle groups such as married employed parents" (p. 269). In addition, they found that higher education and income correlate positively with lowered stress level indicates those who have higher education and income are more likely to have better health.

Although Iwasaki and Mannell's (2000) hierarchical leisure stress coping model identified more leisure coping mechanisms and strategies, the way to treat leisure belief as one leisure coping strategy is inconsistent with other stress theories. It is no doubt that people's beliefs influence their selection of coping strategies. However, coping is defined as an effort to deal with perceived threat (Lazarus, 1993), while belief is a system built up through experiences and functions without efforts. Another concern is that the lack of connection between this hierarchical leisure stress coping model and other general stress coping models will make it difficult to identify the role of leisure and its relationship between leisure coping strategies and other general coping strategies.

In addition, more attention should be paid to the complexity of the role of leisure stress coping (Trenberth, & Dewe, 2002) before conclusions can be made that leisure has the effect to reduce stress. For example, is it because involvement in leisure activities helps reduce stress or because those who have properly dealt with stress through other coping strategies are being able to enjoy their leisure again? Also, the nature of leisure as a coping strategy may change as the nature of stress changes.

Moreover, the situation of quantitative research methodology dominating in the field of leisure field has not been changed although many leisure researchers have posited this question for decades. For example, Hemingway (1990) indicated his concerns on the over-reliance of questionnaires and survey methods. Some leisure scientists have expressed a belief that qualitative research will better reveal the processes and meanings associated with leisure that are difficult to capture in traditional empirical design (Howe, 1985; Kelly, 1991). A qualitative research on leisure stress coping assists in the understanding of the role of leisure in the process of coping with stress.

Chapter 3

METHODOLOGY

In this chapter, the methodological framework on which this research was based is introduced. Naturalistic inquiry is presented as a general world view of the real world as well as the ways to do research. After the decision to apply the qualitative research methods, the rationale to use interview method is discussed. A purposive sampling technique was applied for subject recruiting. Data collection is described, along with data analysis techniques, which was guided by grounded theory. Finally, the techniques used for enhancing methodological trustworthiness and credibility of the data are discussed.

Naturalistic Inquiry

According to Lincoln and Guba (1985), a naturalist view of the nature of reality is that realities are multiple, constructed, and holistic. There is no such a single reality that is tangible and can be broke into parts for studying. The reality constructed by one person is different from that constructed by another one because both the different personal experience and social environment are influencing the way by which the person sees the world. The implication is that researchers have to study the individual to know what the reality is for him/her. To do this, researchers have to interact with the individual studied in order to obtain meaningful interpretations of data collected.

This is different from the positivist notion that researchers should be independent and objective without intrusions of the subjects they observe. To the naturalist, however, the presence of the investigators is not an intrusion; rather it is an opportunity to explore

the truth. Lincoln and Guba (1985, pp.101-105) pointed out five reasons to support the importance of interaction between the researchers and the subjects:

1. Theories and facts are not independent;

2. Purposeful sampling and emergent design are impossible to achieve without interaction;

3. To move beyond "mere" objectivity requires a level of mature judgment that can be achieved only by continuous interaction;

4. Human research is inherently dialectical; and

5. Meaningful human research is impossible without the full understanding and cooperation of the respondents.

The classic concept of generalizability has many problems from the naturalistic point of view. The purpose of a qualitative study is for understanding, not for generalization. The assumption of generalizability is determinism, which believes that there is cause-and-effect in all the cases. If there is an effect, there must be a cause. This assumption, however, is not suitable when the situations and relationships are complicated. Moreover, generalizability depends on inductive logic. Instead of including all the members of a population studied, the conclusions are based on the data collected from a limited number of the population and they are assumed to be true for all other similar particulars without considerations of differences of time and situations.

Respecting the individual differences, a naturalistic, or qualitative, designed study focuses on the deep understanding of the cases, investigation of the meanings, and consideration of processes and contexts. Although from other persons' stories, readers may generate similar experiences, reflections, and reactions for themselves, Cronbach

(1975) argued that it is almost impossible to generalize anything because there are always something unique from each other. Cronbach (1975) proposed to replace "hypothesis" with what he called the "working hypothesis", which is a tentative theory, not a conclusion. The idea here is that the researcher should always be conscious that the conclusion he obtained now is just a temporary hypothesis for him to keep work on it. It is not an end of the theory, but a starting point to further refine this theory, even finally reject this theory and discover another theory (Strauss, 1967).

Rationale for Using Interview Method

The purpose of the study was to understand the role of leisure as a stress coping strategy for women with RA. It was the aim of this study to examine the dynamic interaction between leisure and stress through the process of dealing with RA. Both Kelly (1982) and Samdahl (2000) suggested that qualitative research methodology serves better in the study of the leisure experience which involves complex influencing factors. Since generalization was not the concern of this study, a qualitative research method should serve better to achieve the goal of this study.

Another concern of this study was to echo the call for qualitative methods in leisure research, which over-depends on quantitative methods (Samdahl, 2000). As the increasing understanding of the complexity of leisure, research on leisure should consider the context within which leisure activity takes place and the relationship between leisure and various other factors may impact leisure behaviors. Quantitative methods may be limited in understanding leisure from this context perspective (Henderson, 1991) while qualitative methods are suitable for this purpose.

Among many qualitative research methods, participant observation and interview are the two primary ways to collect the descriptive data. By observing the activities of the research subjects, investigators immerse themselves in the lives of the subjects and collect data unobtrusively and systematically (Bogdan & Taylor 1975). Investigators even can live with the subjects for a long time to further understand the situation and environment. Participant observation may require an enormous amount of time and energy to observe in the field. Another disadvantage of participant observation is that it is impossible to observe the past, which is not a problem to interview method. By interviewing the subjects, the investigators are able to collect data about what happened in the past, what they feel now, and what their future plans are. In the interview, the investigators can inquire the questions in deep and find new information. Certainly, the recall of the past from the subjects may be not exactly the same as the fact that really happened because the subjects may not be able to remember accurately, or because they change the way they view the event.

For this study, the interview method is more suitable than the participant observation method. To employ the participant observation method, the researcher needs to find out the subjects who just have RA, and then has to follow the patients for a long time to go through their disease development and treatment in order to understand the whole process. This can be done easily by interviewing those who have had RA for a period of time and asking them to recall the whole process. To those who have RA, it is a dramatic life change that can never be forgotten. The subjects should be able to remember the details about what happened in every moment after they have RA. Therefore, the interview method is suitable for this study.

Sampling

From a qualitative perspective, interview method was used in this study. Most of the participants were recruited from a local rheumatologic clinic, YMCA, and a swimming program for arthritis in a university. The others were referred by a colleague. The original idea was to recruit both male and female participants; however, only 14 women with RA finally voluntarily participated in this study. The criteria for the participants were 25 years or older, being diagnosed with rheumatoid arthritis by physicians, and being able to clearly express themselves and remember their disease history.

According to Lincoln and Guba (1985), qualitative inquiry depends on purposeful rather than representative sampling. Based on different purposes of studies, different purposeful sampling techniques are suggested. Other than random sampling, Michael Quinn Patton (1980, cited by Lincoln & Guba, 1985, pp. 200, 201) suggested another six types of purposeful sampling techniques:

1. Sampling extreme or deviant cases to obtain information about unusual cases that may be particularly troublesome or enlightening.
2. Sampling typical cases to avoid rejection of information on the grounds that it is known to arise from special or deviant cases.
3. Maximum variation sampling to document unique variations that have emerged in adapting to different conditions.
4. Sampling critical cases to permit maximum application of information to other cases because, if the information is valid for critical cases, it is also likely to be true of all other cases.

5. Sampling politically important or sensitive cases to attract attention to the study (or, sometimes, to deflect attention).

6. Convenience sampling to save time, money, or effort.

Among these six sampling techniques, Lincoln and Guba (1985) suggested that maximum variation sampling be the most suitable one since the goal of a naturalistic investigation was not to find the similarities for generalizations but to describe the unique aspects of each case. Further, they argued that purposive sampling had four characteristics (Lincoln & Guba, 1985, pp. 201, 202). They were:

1. Emergent sampling design. There can be no a priori specification of the sample; it cannot be "drawn" in advance.

2. Serial selection of sampling units. The purpose of maximum variation is best achieved by selecting each unit of the sample only after the previous unit has been tapped and analyzed. Each successive unit can be chosen to extend information already obtained, to obtain other information that contrasts with it, or to fill in gaps in the information obtained so far.

3. Continuous adjustment or "focusing" of the sample. The sample may be refined to focus more particularly on those units that seem most relevant.

4. Selection to the point of redundancy.

Since the purpose of naturalistic sampling is to maximize information, not to generalize results, in this study, people with different age, marital status, education levels, living situations and disease conditions were recruited to represent a diverse group of people with rheumatoid arthritis (See Table 1 & Table 2). The names in the tables were

TABLE 1. Characteristics of Participants

Coding Name	Gender	Age	Education	Marriage	Occupation	Living With	Race
Ann	Female	72	High School	Married	Retired Receptionist	Spouse	Caucasian
Candice	Female	70	Lower than High school	Widowed	Retired cook	Parent	African-American
Cindy	Female	55	High school	Married	Retired Social worker	Spouse	Caucasian
Diane	Female	54	College	Married	Manager	Spouse	Caucasian
Emma	Female	72	Master degree	Divorced	Retired Teacher	Alone	Caucasian
Jen	Female	64	High school	Married	Retired Bus driver	Spouse	Caucasian
Katie	Female	80	College	Married	Retired Art teacher	Spouse	Caucasian
Kelly	Female	54	College	Single	Retired Administrator	Alone	Caucasian
Laura	Female	57	College	Single	Retired Office manager	Alone	Caucasian
Linda	Female	61	Doctor degree	Single	Professor	Alone	Caucasian
Liz	Female	46	Doctor degree	Married	Professor	Spouse Children	Caucasian
Mary	Female	37	Master degree	Divorced	Computer Consultant	Child	Asian
Sophia	Female	77	College	Widowed	Retired Teacher	Alone	Caucasian
Vicki	Female	57	College	Married	Retired nurse	Spouse	Caucasian

TABLE 2. Illness Information of Participants

Coding Name	Length of Illness	Duration of Morning Stiffness	Degree of Pain	Degree of Deformity	Ability to ADL	Other disease
Ann	40 years	30-60 minutes	Discomforting/ Excruciating	None	With difficulty but Without assistance	Osteoarthritis
Candice	20 years	15-30 minutes	Excruciating	Moderate	With difficulty but Without assistance	None
Cindy	30 years	>60 minutes	Discomforting/ Excruciating	Mild	With some assistance From others	Lupus, Hypertension, Hypothyroidism
Diane	28 years	15-30 minutes	Mild	Moderate	With some assistance From others	Myelodysplastic syndrome
Emma	25 years	15-30 minutes	Discomforting	None	With difficulty but Without assistance	Osteoarthritis, osteoporosis, Spinal stenosis, Diabetes
Jen	52 years	>60 minutes	Discomforting/ Excruciating	Marked	With some assistance From others	Lupus, diabetes
Katie	15 years	None	Mild	Mild	Without difficulty	Cancer, Strep, Asthma
Kelly	10 years	>60 minutes	Discomforting	Mild	With some assistance From others	Osteoarthritis, bursitis, Diabetes, hypertension
Laura	35 years	15-30 minutes	Discomforting/ Excruciating	Mild	With some assistance From others	Fibromyalgia, migraine
Linda	3 years	None	Mild	Mild	Without difficulty	None
Liz	4.5 years	30-60 minutes	Discomforting	None	With difficulty but Without assistance	Fibromyalgia
Mary	7 years	>60 minutes	Discomforting	Moderate	With difficulty but Without assistance	None
Sophia	8 years	15-30 minutes	Mild	Moderate	With difficulty but Without assistance	None
Vicki	32 years	30-60 minutes	Mild	Marked	With some assistance From others	Hypertension

all pseudonyms. The age of the participants ranged from 37 to 80 years of age. Three of them were single, seven married, two widowed, and two divorced. Most of them (10) retired, and the others were still working. Seven participants were living with spouse, four alone, two with children, and one with parent. Only one of them was Asian, one African-American, and all the others Caucasians. The range of the length of illness history ranged from 3 to 52 years. Eleven of them had mild to marked level of deformation. Six persons needed assistance in activities of daily living (ADL). Some of them (n=10) had other diseases other than RA.

Data Collection

Data were collected from the interview. Those who agreed to conduct the interviews were contacted and those who were qualified for the study were recruited as the participants. Time and place for interviewing were decided based on the agreements of the participants. At the beginning of the interview, the purpose and the procedure of the study were explained again. Every participant was asked to read and sign on the Informed Consent Statement (Appendix A) prior to the beginning of the interview. Then, the participants were asked to fill out a survey (Appendix B) containing their demographic information and disease conditions, following by an in-depth semi-structured interview. The length of the interviews ranged from 45 minutes to 90 minutes.

Before the formal interview, the participants were provided with the following definition of leisure (Hutchinson et al., 2003): Something you do in your free time; Things you enjoy doing not related to work and obligations. Finally, the formal interview began. The interviews were guided by an interview protocol (Appendix C) that included

key research questions. All interviews were tape recorded and transcribed, with each of the participants being assigned a randomly chosen pseudonym.

These questions just served as a guideline for the interview. A good interview is that the interviewees will talk more than the interviewer and the interviewees are allowed to talk about anything they think are important. When there was new information that emerged from the talking of the interviewee, the researcher would not stick to the questions prepared, rather to follow the new direction. When the researcher noticed that all the questions had been asked and the participants did not have anything more to talk about, the researcher would close the interview.

In the process of data collection, the researcher wrote the reflective journals that reflected the whole process of the research, including the researchers' mind processes, any thoughts about the data or the research at a moment, and reasons for any decision-makings. Because the data collection period for qualitative research lasted longer, the journal would help the researcher to review the thoughts stimulated from the data long time ago.

Moreover, in the procedure of naturalistic inquiry, data collection and data analysis were processed simultaneously. When new data contributed little to the construction of new categories, it reached data saturation, which meant that the process of data collection could be terminated at this point. Then the researcher began to concentrate on data analysis completely.

Data Analysis

Data analysis proceeded simultaneously with the beginning of the first interview. As such data were analyzed via a constant comparative method, if there was any new

information or questions emerged from the previous interview(s), adjustments would be reflected in the next interview. Data analysis was guided by using the constant comparative method proposed by Glaser and Strauss who developed grounded theory in 1967.

Grounded Theory

Lincoln and Guba (1985) suggested that grounded theory was "a necessary consequence of the naturalistic paradigm that posits multiple realities and makes transferability dependent on local contextual factors" (p. 205). Grounded theory posited that theory should come from data. It was an inductive rather than deductive data analysis which was used by quantitative research. It was open-ended in nature so that the theory was always modifying and expending with the further process of additional data collection and analysis. Since the theory was linked to data directly, it was difficult to be rejected.

The purpose of grounded theory is to understand the research situation and discover new theory implicit in the data, rather than to test a hypothesis. Most of the other research has been focused more on hypothesis-testing, that is, the researchers already have some theories in their minds and the aim of their research is to test if their studies match the theories. However, for the ground theory researchers they base on the information emerged from the data and try to find new theories within the situation specific. In fact, Glaser and Strauss (1967) suggest two main criteria for judging the rigor of grounded theory: 1) if it fits the situation; and 2) if it works.

To generate theory from data, comparative analysis was introduced. First, comparing with other comparative groups to determine whether the evidence collected

was true. If the comparative evidence was consistent with the initial evidence collected, it meant that facts were replicated. Second, by comparing the different groups, the generality of a fact could be increased.

Coding

This method was called the constant comparative method. The first thing to do was open coding. Coding was the process of analyzing data. Open coding was the process of breaking down, examining, comparing, conceptualizing, and categorizing data. Each interview will be listened and transcripts will be read several times carefully to get further familiar with the data. In this stage, the focus was on comparing incidents applicable to each category. While reading the transcripts, any concepts or categories, no matter if they are related to the purpose of this study or not, will be written down. The purpose of open coding was to create as many categories of analysis as possible based on the concepts emerged from data. The emerged concepts and categories could be noted on margins.

When coding a phenomenon for a category, compared it first with the previous categories to check out if it was something new or belonged to the category existed. That was the process of categorizing by which the similar concepts were grouped to reduce the number of units of analysis. For example, the subjects may talk about the development of disease history; then the unit could be “disease development.” Later, anything related to their disease development will be marked and labeled as “disease development.” Then, it was the time to give a conceptual name to the phenomenon represented by a category. This name should be more abstract than that of concepts within the category. The names of the categories could be constructed by the researcher or abstracted from the language of the interviewees. After all the units have been identified, there may be several units

could be categorized into one group. For example, suppose that units of "disease development", "disease symptoms", "disease treatment" have been identified; then "disease history" could be the conceptual name representing these different units.

Next, axial coding was employed to make connections between categories by reorganizing the themes that emerged from open coding (Strauss & Corbin, 1990). At this stage, the constant comparisons changed from comparison of phenomenon with phenomenon to comparison of category with category. The focus was on specifying the conditions and context of the phenomenon, and the action, interaction, strategies and consequences that involved in the phenomenon. Theoretically consistent categories were integrated based on their properties. For example, after open coding, categories, such as "the impact of RA on life", "The impact of RA on leisure", and "the role of leisure as coping strategies" may be identified. Then, in axial coding, it was time to compare these categories. The theory might be developed from the analysis of the relationships between different categories.

Trustworthiness

From a naturalistic point of view, criteria that have been used to judge the quantitatively designed studies are not appropriate for the qualitatively designed studies. Actually, the criteria used in the quantitative studies, such as internal validity, external validity, reliability, and objectivity has been challenged by the naturalists. To the naturalists, however, the world consists of multiple realities, constructed differently by different people, at different time, under different situations. The different constructions of an event from the subjective perspectives are meaningful and important to the individual. The interaction between the researcher and the subjects is essential to

understand the truth defined by the subjects, rather than by the researcher. Therefore, new criteria, appropriate to the naturalistic paradigm, are required in order to judge the trustworthiness of the qualitatively designed studies.

Internal validity refers to the extent to which variations in a dependent variable can be attributed to variations in an independent variable. External validity refers to the extent to which the relationship can be generalized. Both internal and external validity require random sampling to achieve higher validity, assuming that there is causal relationship between dependent and independent variables. However, there is a dilemma that to achieve higher internal validity (like more control of the independent variables) will reduce the possibility to generalize the results to the population. Reliability refers to consistency and accuracy of the measurement and the data. If the study is repeatable by the other researchers, yielding the same results, it means this study is reliable. Any inappropriate measurement or instrument may threaten reliability. Objectivity usually refers to the contrast of subjectivity, the absence of subjective judgments. Traditionally, "objective" equals to "quantitative", or numbers. Any intrusion of the observer to the observed threatens objectivity. The study should be value-free.

In naturalistic paradigm, the four terms "credibility," "transferability," "dependability," and "confirmability" are used to replace the traditional terms "internal validity,", "external validity," "reliability," and "objectivity." Some unique techniques can increase the trustworthiness of the qualitatively designed research. Techniques, such as prolonged engagement, persistent observation, triangulation, peer debriefing, and member checking provided the possibility to improve the credibility.

In this study, the member checking technique was used to increase the trustworthiness. Five members were called to discuss the findings from this study to see if they agreed with the researcher's interpretations of their own stories. All of them agreed with the role of leisure stress coping proposed by the author. Regarding the leisure positive reappraisal, all of them gave further examples to support this model. For example, one participant said that leisure traveling helped her release stress because she built up confidence by realizing that she could walk longer than she thought before. Thus, the increased confidence promoted positive reappraisal of her physical condition and helped reduce stress.

Another technique used for improving the trustworthiness was peer debriefing. Peer debriefing refers to the "process of exposing oneself to a disinterested peer in a manner paralleling an analytic session and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer's mind" (Lincoln & Guba, 1985, p. 308). Peer debriefing helps reduce the bias from the researchers and provide suggestions that help the researchers clear their interpretations. In this study, a professor of a Midwest university was asked to serve as a debriefer. The author explained the coding process of this study to the debriefer and gave her all the open coding and axial coding materials. The debriefer was asked to read all of the interview transcripts and coding materials to see if there was anything that she might code differently. After carefully reviewing of the coding, the debreifer agreed with the author's analysis.

To Lincoln and Guba (1985), transferability is almost impossible for a qualitatively designed study. Because the constantly changing of the time and context, the findings from one case are not applicable to a similar case or even the same case but at

different time. The intention of this study was not to generalize but to understand the cases collected. However, by maximizing the variation of the cases, Corbin and Strauss (1990) argued that the transferability of the findings to the population is still possible.

In regard to increase the dependability, triangulation is one of the techniques suggested by Lincoln and Guba (1985). Triangulation refers to the application of multiple sources, methods, and investigators in one study. When the findings from different research, with different methods, and/or by different investigators appear to be identical, the probability of dependability of the research is improved. Certainly, to make it happen, more time and energy should be involved. Because of this constraint, few studies have applied triangulation methodology in their research designs.

The technique to establish confirmability is the confirmability audit. The concept of audit here is similar to the one of fiscal audit. An external auditor is asked to examine the research design and the process of data collection and analysis in order to ensure a sound professional study. The external auditor may find problems that could not be noticed by the researchers themselves or something the researchers take for granted. Thus, it is the researcher's responsibility to keep an intact research document so that an external auditor can help go through the whole research process and point out anything s/he thinks that is not appropriate or questionable. In this study, another professor from a Midwest university was asked to serve as an independent auditor to evaluate the accountability of the whole research process. The author explained the research procedure and showed the auditor the research journal, interview transcripts, coding and other materials relating to this study. The auditor approved the accountability of this study.

In summary, this study used the interview methodology guided under the naturalistic world of view to explore the role of leisure as a coping strategy for women with RA. Participants were recruited according to the principle of the purposive sampling technique. The qualitative data collected through the interviews were analyzed by using coding technique provided by Glasser and Strauss (1967) in their grounded theory. To increase the trustworthiness of this study, member checking, peer debriefing, reflective journal writing, and external auditing were employed.

Chapter 4

RESULTS

RA is a sentence, not a sentence to death, I'm not going to die from this, but it's a life sentence. (Laura, a participant of this study)

The purpose of this study was to understand the interactive role of leisure activities in the process of coping with stress among women with rheumatoid arthritis. Through the interviews with 14 women who had RA, a better understanding about their experiences of RA and leisure was achieved. After careful analysis of the interview transcripts by using constant comparative method, three primary themes emerged from the data: (a) impact of RA on life, (b) impact of RA on leisure, and (c) the role of leisure in coping with stress from RA. Within each of the three primary themes, sub-themes, which represent the properties of the theme, are identified and discussed as well. Figure 4 represents the themes and sub-themes that emerged from the data in this study.

Impact of RA on Life	Impact of RA on Leisure	The Role of Leisure in Coping with Stress from RA
Negative Impact of RA on Life	Impact of RA on the Pattern of Leisure Activity	Escaping to Release Stress
Stress of RA	Positive impact of RA on Leisure	Expressing Negative Emotions to Release Stress
Positive Impact of RA on Life	Negative Impact of RA on Leisure	Relaxing to Release Stress
		Enhancing Mood to Release Stress
		Mind-off to Release Stress
		Being with Friends and Others to Release Stress

FIGURE 4. Themes and sub-themes emerged in this study

Impact of RA on Life

Negative Impact of RA on Life

RA had a dramatic impact on the lives of the participants. Most were suffering a great deal of pain, and some had deformations in their joints. Among the 14 participants, two were using wheelchairs, two had to use a cane while walking, and all the others, although being able to walk by themselves, were experiencing pain in different levels, and many had problems walking stairs. Because of the pain and joints deformities, most of them were having problems in carrying out daily living activities, such as cooking, house cleaning, and grocery shopping. Jen, one retired school bus driver with the worst condition among the participants, even had difficulties in dressing herself up and taking showers by herself. Linda, a professor, talked about her condition when she was knocked down by RA and said "I was suffering a great deal. I didn't realize how bad it will be. It was very difficult. I had difficulty to get up in the morning, and get myself dressed up. I was in great fatigue." Cindy, a retired social worker, at one period also had a similar experience, "I got to the point that I couldn't dress myself and couldn't peel potatoes and work in the kitchen." Therefore, RA impacted the participants almost on every aspect of life. Liz, a 46-year old assistant professor, described the change of herself like this:

> Before I was very vibrant, energetic, very positive, and had an optimistic view about things, and I accomplished many things in a short amount of years, I had my Ph. D, I have been teaching, I ran an agency, you know, had all of the career things, and had my children. But since the disease, I'm less optimistic, I'm less energetic, I'm more negative, and I can't accomplish as much.

Sophia, a retired teacher, moved to a nursing home after she had RA because she was afraid that she was not able to take care of the house. She stated:

> I had a big house, I raised four children. So [after I had RA] I couldn't handle the house, couldn't take care of the garden, and even couldn't do a lot of cleanings

> and upkeep of the house, that's why I decided to sell the house to move here. That changed my life. I may have stayed there if I didn't have RA.

The changes in their lives after they had RA, the tremendous amount of pain they had dealt with almost everyday, and the limitations in their daily life, adversely impacted not only on their physical bodies, but also on their psychological well-being. For example, Mary, a 37-year old computer consultant, described this as the mental pain:

> Not just the physical pain, but the mental pain was terrible too. You have to deal with that kind of things, to deal with the fact that you are still young, that fact that I like sports so much, I had to stop that, not being active, so just mentally painful.

Stress of RA

Consequently, all these physical and mental demands appeared to contribute to the increasing level of stress experienced by the participants. Through the analysis of data, four areas emerged as the main sources of stress identified by the participants in this interview study. They are: pain, limitations in daily living, feeling of loss, and fear of the future.

Pain. In the interviews, pain had been identified most frequently by every participant in this study as a main factor that caused them to suffer and confined their mobility. "I had much pain…it hurts to walk." The symptoms of RA were the inflammation in joints which would make the joints swollen and even deformed, and might result in the loss of the basic function. Without proper medication, individuals might suffer excruciating pain. Vicki recalled when she just got RA: "I had severe swelling in my knees, and very hard time walking, and running. When I ran, I would fall, because I just couldn't keep up." Actually, some participants suggested that pain medication might not work all the time and they did not want to rely on medication. For most of the participants, the life with RA is a life living with pain.

> I'm still in tremendous amount of pain when I move. If I'm sitting, my feet up, it's not that bad. ……it really doesn't let me to do a lot of physical things. I can go to the movies, which I'd like to do for my leisure fun, but it's hard for me, I can't put my feet up…..I can't walk for a long distances. (Laura)

> when I sleep I couldn't turn my body, I could feel the pain, the pain is all over my body, my shoulders, my back, and my legs, I feel like I was cripple when I walked steps, so mentally really upset that I was in such a bad condition. (Mary)

Sometimes, if the pain was too severe and the medications did not work, the surgery or replacement of joints might be necessary. After she had both her hips replaced and had surgeries on both of her ankles, Vicki reported that she was experiencing "much less pain" and much increased mobility. Jen also had surgeries on her ankles. She had to take pain medication in the night if the pain was too bad. From time to time, she said she had to take shots to stop the pain in her knees.

Some participants expressed that they felt annoyed, depressed, and being fatigued because of stress from RA. For Liz, she felt helpless, even useless when she was in a great deal of pain:

> Sometimes when I'm hurting real bad, and I'm very tired. Sometimes I start hurting so bad and I get so tired that I can't think, and I can't do anything, and I have to sit down or lie down, and then I feel kind of helpless. I feel more than helpless, I feel useless, like I'm no good, because I can't do, which I know in my heart that is not what makes me a valuable person, but I feel useless at the moment, and I feel the only option I have is to lie down.

Stress from RA might stop participants from doing many basic living activities such as walking and lifting grocery bags. However, many participants mentioned that after a long period of living with pain, they developed the ability to endure more pain and learned how to ignore the pain. Therefore, sometimes it was not the pain itself but the stress associated with the limitations and feelings of loss due to pain and disability from

RA that should be considered as the primary attributes to the decreased quality of life of the participants.

Limitations in Daily Living. The direct impacts of pain and deformity of joints because of RA were limited mobility and difficulties in carrying out daily living activities. Some of the participants had to use aid devices, such as cane and wheelchair. The others, although could walk without aid, they might not be able to walk too long, too fast, and many had difficulties walking steps. Cindy, Jen, Vicki, and Diane all had significant deformation in their hands and the activities requiring using of hands were limited. For example, Diane, an administrator, explained that she would have problem to open a jar or lift things over 20 pounds with her hands. When they felt painful, they might try to avoid doing things, and that would cause other problems.

> When there is pain in my hand, and I think "well, I shouldn't be lifting these grocery, I shouldn't be using this knife, I shouldn't be slicing, I shouldn't be using this scissors". And then you get old…and you get boring, because I want to do things. (Vicki)

With the pain and disability, their life circle had been greatly shrunk. For individuals with chronic illness, Charmaz (1991) proposed that illness experience confines their social life and reduces their range of social activity. For example, Emma, a retired school teacher, noted that:

> There are a lot of things that I can't do. It went to the point that I couldn't walk across the room. So it did get impact on me. I just got the minimal things done in my house. I got to the points that I could no longer do yard work, could no longer mow the lawn, couldn't go up and down the steps to the basement. I alternatively had the washing machine and dryer put in the bathroom in the first floor.

Emma further explained that for a period of time she couldn't do anything: "I didn't go anywhere except for the doctors, somebody had to take me, I didn't go to the

meetings, didn't go to the church, I was really confined at that point". Kelly expressed that "I hate being in a wheelchair". Jen also described a similar feeling:

> It makes you depressed because of the fact that there are so many things that you can't do and so many things you want to do. And when you see many people walk by, they are your age, and they can still do all these things and you can't.

From the words they used to describe their situations, like "hate", "depressed", and "confined", one could easily sense the tremendous amount of stress they were experiencing because of limitations in life due to RA and its significant impact on their quality of life. Similarly, Melanson and Downe-Wamboldt (2003) reported that physical limitations was the most frequently reported stressor for individuals with RA and could be the trigger of the experience of the stress emotion of harm. Therefore, the words the participants used expressed their stress emotions, indicating how they were appraising the stressful situation. Ryan (1996) also reported that frustration was clearly evident in older adults with RA.

According to Melanson and Downe-Wamboldt (2003), physical limitations can be any of the following: limitations specific to the home or the workplace, physical limitations related to hobbies, mobility within the home or within the community, fatigue, and sleep. Westhoff, Listing, and Zink (2000) reported that of all RA patients in their study, about 16% need assistance with shopping or cleaning, and about 9% are completely unable to prepare their meals or even to do the dishes, almost 5% are unable to leave the apartment, and about 2% rely on assistance for personal care. In this study, the participants reported limitations related to all of these categories, indicating a comprehensive impact of RA on their life.

Feeling of loss. The fact that they could not do many things that they could do before produced the feeling of loss. Specifically, some of the participants expressed the loss of independence and the loss of self-identity because of RA. For example, Cindy explained that the most stressful thing for her was the loss of independence:

> I always feel I can do anything if I want to. I'm a person with a vision. If I can see it in my mind I can do it. I have to adjust that a lot, because I need more help now. It hurts me to have to ask him to do things that I could do. I know he doesn't mind. But I would rather be able to do it myself.

Diane explained that she would feel hurt if others who wanted to help her treated her as a person with RA. She thought that individuals with RA should be treated as everybody else in order to maintain the feeling of independence. The loss of physical independence may impact a person's psychological well-being and quality of life, employment opportunities and income, and social life (Gignac & Cott, 1998). Diane explained that sometimes she received assistance that she thought was not necessary for her. Gignac and Cott (1998) proposed that this type of "imposed dependency" may lead to reduced independence.

The other feeling of loss expressed by the participants was the loss of self-identity due to work disability. Work disability, relatively common among people with arthritis, is defined as "the inability to perform work as a result of a physical, mental, or other health condition" (Milidonis & Greene, 2005, p71). About 39%-54% of the individuals with arthritis report a limitation or inability to work (Milidonis & Greene, 2005). Five of the participants interviewed in this study had to quit their jobs because of RA, which caused a great deal of stress. Cindy, after quitting her job, felt her identity lost and felt it was very stressful to even visit the nursing facility where she used to work or to see her

former co-workers. Kelly was very emotional when she was talking about her feelings about having to quit her job:

> Our identity is what we do for a living. It's not who we are, it's what we do. If you meet someone and you're chitchatting, you know, you're just making small talk, often early in that conversation along with "What is your name", "What do you do?" So, "What do you do for a living?" And, there you know they're a farmer, or they're whatever they are. And then often you'll talk about their work. "Do you like it over there cook?" You know...and I don't have that. You know, you're like, "What's your occupation?" What do I say? My occupation is to stay alive.

Fear of the future. Some participants expressed their concerns about their future. Linda mentioned that she worried about her physical condition in the future because she did not know if it would be getting better or worse. Liz had similar fear of the loss of independence in the future and stated that she did not want to become a burden for her children:

> But the future is very frightening, because I don't know if I'm going to end up with a walker, a wheelchair, or will always be able to walk by myself. I don't know. So there is some worry about that. I have children. I want to be able to raise my children, and I don't want my children to take care of me. I want them to be able to be independent, not to worry about their mother.

For Laura, a retired office manager, who just received Medicaid, she worried about if she could still be able to have the medicine in the future. Diane summarized her fear about the future:

> What will happen to me that tomorrow they say we were taking these drugs out of the market….what if I became crippled, what if I ended up in the wheelchair, what if I couldn't do any other leisure activities than watch TV, for a person as active as I am, that will be very emotionally challenging. Then you have to deal with depression at that point.

In summary, living with RA had to deal with many stresses. Some of the stresses were directly associated with the disease itself, like pain and limitations of living, and simultaneously the participants might be experiencing stresses that were not directly

related to RA, such as feelings of loss. The findings of sources of stress identified from this study were consistent with the other studies in the literature (Griffin et al, 2001; Mahat, 1997; Melanson & Downe-Wamboldt, 2003).

Because of the negative impact of RA on life, most of the individuals with RA experience the emotion of harm, such as being sad, annoyed, ashamed, miserable, angry, helpless, and disappointed (Melanson & Downe-Wamboldt, 2003). Harm is an emotion expressed when the individuals appraise the stressor as "some damage to the person has already been sustained" (Lazarus & Folkman, 1984). Obviously, RA causes damages to the individuals not only to their bodies, but also to their family and social lives, work, and mental health.

From the interview data, the majority of the participants identified pain to be the most influencing stressor. Similarly, in a study of 1,024 patients with RA, Heiburg and Krien (2002) found that pain (70%) is the most preferred area that the patients want to improve and preference of improvement in pain is associated with higher level of pain, lower self-efficacy, and lower age. They further reported that the other areas that the patients prefer to improve are hand/finger functions (45%), walking/bending (33%), and mobility (24%). Therefore, pain is the leading stressor to most of the individuals with RA and it is greatly associated with limitations in mobility, fatigue, walking, and the other activities.

Other than the stresses that emerged in this study, individuals with RA may experience other stresses, such as feelings of helplessness and uncertainty, which were reported from the other studies (Mahat, 1997). Meanwhile, some stresses, if mentioned by only one participant, were not reported in this study. For example, one participant

mentioned fear of falling to be one of the things that she worried about. Because no other participant reported it as a stressor, fear of falling was not included in the final report.

Positive Impact of RA on Life

While the data were full of descriptions of negative impacts of RA on the participants' life, positive things were also experienced by most of the participants through the processes of fighting with RA. The change of life forced them to adjust their views about themselves and others. For instance, Sophia, a retired teacher, said she learned that she "needed to take better care of myself with more exercises and with healthy food." Another participant, Kelly, mentioned that she learned to accept an imperfect self:

> I'm not a terribly visual person. I'm not very talented in drawing things. While I was so depressed, I couldn't do anything else, I couldn't take a word, [so] I, coloring books, that are the coloring books for adults…I confirmed to myself that I'm really not very good at that sort of thing, I think I have thought it at the start. But it could also be fun, a relaxing thing to do, I do that kind of thing, that's ok.

Most of the participants expressed difficulties accepting help from others, including their family members, especially in their early stage of having RA. For example, Cindy defined herself as a very independent person before and it took her a long time to really feel comfortable to accept help from even her husband: "You have to learn that 'ask for help', that wouldn't have before". Therefore, it was a learning process for most of them which might involve some changes of their views of relationship with others:

> I'm much better than I used to be, to value the relationship, even if I'm the receiver; it's a good thing to learn. (Kelly)

> But I'm learning how to do that more. I'm just learning how to appreciate help from others, because I know that probably that there are things that I can do for them but they can't do for themselves. I guess help is relative. Sometimes I think I

> need physical help, maybe somebody else just needs somebody to sit listening to them. So it's not that I'm not doing something physical, but I am present, and giving them a chance to express themselves, explain what's going on with them. (Vicki)

As the life of living with RA was slowed down, the pace of life had to be adjusted. Consequently, some of the participants noted that they learned to be more patient. Linda suggested that "anyone who has been weakened by RA and frustrated and not been able to do exercises and do things start where you are and just find things that you can do, and just do them very consistently".

> I have more patience. It takes longer to do things. Mostly it takes a lot longer, I can still do a lot of things, it just takes longer, I have to stop and take a break and rest, so I think I have more patience now. It's positive. (Liz)

Some participants expressed that they learned to enjoy life more after they had RA:

> Since I have limited amount of energy every day, I have learnt to do what I enjoy and not to put it off much, because you can always say, I have to do my job, I have to clean my house, and I have to do this, have to do that, and you don't enjoy yourself, or your children, or your spouse. Now I spend more time enjoying, and less time worrying and doing the other things. Because I want to spend quality time while I have that, 'cause now I can lose that, 'cause I have less of that than I used to have. (Liz)

> While you were in such a bad health problem and you get out of it, you realized that what the most important thing in life is, and what the happiness is. While you try to find it, you really feel good about yourself...people who never have any health problems probably are not aware of this, but for me I already feel joyful, like getting up in the morning and feeling no pain, I'm already feeling joyful…I'm so happy, I feel so good today. (Mary)

Through the processes of fighting with RA, many participants experienced some kinds of personal growth. Kelly, who used to be in a position of "power", said she became more humbling. After RA, Mary realized that her personality changed. She became more open to other people's opinions and was more obedient. Liz stated that she

was more empathetic: “I think I’ve had growth in that way: I can sense other people’s needs more”. Liz further explained:

> The good thing is you get inner growth that you only get through trial. I might be heavier, less energetic, and not as happy, but I probably give better things to people now, because I have to grow.

In summary, the experience of RA was not all negative feelings. The participants identified many positive lessons of living with RA, such as learned to accept help, learned to accept imperfect self, learned to enjoy life more, and learned to be more patient. Some experienced personal growth, such as learned to be empathetic to others and being more open minded. These were the positive factors that contributed to coping with stress from RA.

Most of the research in RA, however, has focused on the losses of physical functions and the increases of negative emotions, while neglected positive aspects produced along with the fighting with RA (Curtis, Groarke, Coughlan, & Gsel, 2004). Certainly, it is necessary to fully understand the negative impacts of RA in order to establish effective treatment plans, manage the symptoms, and adjust lifestyles. Given the fact, however, that not all the individuals with RA developed depression, positive aspects from RA could have been the important coping resources which balance the stress (Folkman & Moscovwitz, 2000) and help rebuild a sense of normal life.

Therefore, illness sometimes is not all about negative things. It could become a turning point for a person to grow when one is able to face it and view it as challenge rather than threat. Using personal life stories as an approach to understand the life of persons with RA, Neil (2002) interviewed three women with RA and revealed their life patterns. She found that they all shared experiences of self-transcendence and personal

transformation through process of fighting with their illness although each of them had very different life stories. After changing the ways to view what life was, they could enjoy simple pleasures and try to be positive to everything.

The findings in this study were also consistent with Mahat's (1997) study, which revealed that individuals with RA utilized most frequently optimistic strategy which had been found to be the most effective coping strategy as well. By keeping optimistic, the individuals with RA were still able to enjoy and appreciate life, contain hope for the future, and discover the new meaning of life.

Impact of RA on Leisure

Leisure is defined in this study as any activity done at free time for fun and enjoyment. The data showed that RA impacted these participants' leisure activities in many ways. Impact of RA on the pattern of their leisure activities are discussed in the following section, along with the negative and positive impacts of RA on their leisure activities.

Impact of RA on the Pattern of Leisure Activity

During the interviews, participants were asked to recall what kinds of leisure activities they did before and after RA in order to find the continuity and change in their leisure behaviors. Three patterns of their leisure activities are identified after they had RA. They may quit some leisure activities because of RA, continue some old activities, and/or develop some new activities. Although the patterns are not different from those of other population groups, they might represent different meanings or reasons.

Quitting. Since some dramatic changes might have happened in their body because of RA, especially the pain, deformation, and fatigue associated with RA, all the

participants reported they had to quit some activities that they could no longer do. For example, Sophia used to like playing piano, which she had to give up due to deformation in her hands, consequently she sold her piano. Another participant, Cindy played a lot of tennis at high school. After the RA got worse, she said, “I don’t have the balance to play it anymore”.

The data showed that physical conditions of the participants after RA and leisure lifestyle before RA had significant impacts on the changes of leisure activities, that is, the worse their physical conditions were after RA, and the more active they were before RA, the more activities they might have to quit. For example, Jen and Kelly were the two participants with the worst physical conditions in this study. Both of them had to use wheelchairs while Kelly could walk a short distance still and Jen had lost her walking ability completely. They had to quit almost all the physical activities they used to do. For example, Jen recalled that she used to ride a bicycle all around, play basketball, run all the time in track, participate in gym, and walk a mile to school. After she was 40 years old, the RA was getting worse and worse, and she had to give them up. She then went to the water exercise at the YMCA, and after a while she could not continue doing it because she could not keep her balance in the pool. Meanwhile, Jen used to enjoy traveling very much, but she had to quit traveling recently because her physical condition would not allow her to travel too far away. Among those things, the quitting of traveling bothered her the most because that was something she loved to do through her whole life:

> We have gone to Florida for 35 years, almost the same spot. I can’t get into the pool up there because they are not warm enough. You got have at least 85 degree temperature for somebody with arthritis to even feel comfortable. I always love to go down there, just floating around in the pool. That’s my thing for going for Florida. Last year I couldn’t get into the pool because I can no longer walk. I can probably fall in the pool, but I couldn’t get out of it. So, that one really bothers me.

> That bothers a lot, for that takes away something I look forward to. [very emotional]… I can't do it anymore.

Mary and Liz were very active before they had RA. Both of them described that RA forced them to quit most of the activities they participated intensively before.

> I gave up everything. I couldn't run. I still remember a picture of me, playing sport, with a bunch of people, I was there, all sweating, just finished playing the sport, I believe that was the last time I ever, ever [played sports]. (Mary)

> Before, I was very, very active. I hiked, strenuous hiking, I run, I bicycled, I swam, I did a miniature triathlon when I was 30, I'm 46 now. You know, I was very, very active. I also would ride horses, and did farm work with my husband. These ones just stopped. I did very active things… I water-skied. I used to love water-skiing…(Liz)

When further probed about the meaning of quitting of her leisure activities, Liz expressed her feelings in this way:

> It's been a huge grieving process. Because I have gained weight and lost muscle strength, and that's a very sad thing, so I have to say I grieved a lot. And I have depression because of the loss in my life.

Similarly, data showed that for most of the other participants, to quit their favorite leisure activities meant a sense of loss, a source of negative feelings. The following dialogue between the interviewer and Laura illustrated that not being able to dance for her meant the loss of a sense of freedom:

> Interviewer: What's the meaning of the loss of the activities you can't do?
> Laura: I used to go out and dance with my friend at bars. I love dancing, I love moving my body around. I can't do that. I can stand my legs long enough. I can stand, and just dance my arms.
> Interviewer: What does it mean to you of the loss?
> Laura: It's a loss, it's a tremendous loss. Last time when we went out to a bar, I'd sit there while my friend was up on the floor, dancing with somebody else, and that really hurt. That is the only main thing I can't do anymore that I'm really sad about. [sobbing] There is nothing I can do instead of that.
> Interviewer: Why? Dancing must have some significant meaning to you.
> Laura: It means giving me freedom. I love music, I love moving my body to music. If I could do it again, I would do it now.
> Interviewer: It's very important to you. What's the meaning behind it?

> Laura: What's behind that deeply is that my body wouldn't let me do what I want to do…so, I'm mad at my body, I'm angry. ….

Continuing. Although the participants had to quit many leisure activities they engaged in before, they made their best trying to continue those leisure activities that they were still able to do. For example, Kelly continued to play music. About a half year later after she had RA, Linda returned to water exercise and bicycling. Sometimes they had to reduce the duration and/or intensity of the activities in order for them to be able to continue doing those same activities that they did before. Liz still hiked but not as strenuous as before. Sue liked to travel to other countries for long trips before, but she said that "I still travel. Now my traveling is mainly visiting my children living in different states". For Cindy, fishing was always her favorite leisure activity; however, she had to change the place where she used to go fishing because there were too many hills for her to walk over there because of RA.

Being able to continue doing the previous activities could mean different things for different participants. Linda went back to her water exercise to see if she still had the ability to perform the same activity, and that discovery generated a sense of normalcy for her. Another participant, Liz, believed that these activities were important to meet certain needs:

> It means I have got to continue to fulfill that need or interest. So I used to hike before, I can do very short hike, that means I can still get to be outdoors, and enjoy being outdoors; I used to plant some flowers and now I plant more flowers, so those are things it's nice to be able to continue.

She further recognized that the needs were not the same ones as before because of the changes after RA:

> I probably appreciate them more now even I can't do them the same. But the things are new, have replaced or filled new needs, 'cause your needs changed when your body changed.

Sometimes the same activity could have different meanings for different people. For example, both Cindy and Diane loved go fishing. For Cindy, fishing connected her with childhood experiences, while for Diane it was a family time with her son.

> I think fishing is absolutely the only thing that takes my mind completely off, any problem that I might have. And one of the reasons for that is fishing takes me back to my childhood. (Cindy)

> I fish before and after I have RA…I'm glad that I can continue because I fish with my son, that's something he and I do together…that's a special time for me to be with my son. (Diane)

Developing New Leisure Activities. Other than quitting and continuing old activities, most of the participants developed new leisure activities after they had RA. For example, Linda, Mary, and Sophia started doing Tai Chi, Cindy played computer games, and Kelly, Liz, and Vicki mentioned that they read more. Many of the participants were doing water exercises, designed by the Arthritis Foundation for people with arthritis.

After their lives and bodies were affected by RA, many participants chose new activities that were suitable to their current conditions. For instance, Tai Chi was a good exercise for people with RA because it was slow and soft movement that did not require good physical conditions. The water exercise program also provided a wonderful and safe opportunity for them to increase the range of body movement and enhance physical health. Therefore, the participants not only found new enjoyment, but also they purposely chose the new activities to improve or maintain their physical condition, even served as treatments in a certain sense. For example, Cindy said "I played a lot of video games that I didn't do before. It was good for concentration…and for my hands". For some

participants, they needed to find new activities to replace the one they quit. For instance, Diane said that she started golf to replace tennis.

In addition to gaining physical benefits, some participants mentioned that they had learned new things and developed new perspectives from these new leisure activities:

> It [Tai Chi] was just something different. I want to try something different. It was interesting to learn it and learn something about it. I enjoy it. (Sophia)

> The new activity, like the books on tape, gives me a perspective of wanting to do more to contribute to the society…like I would like to do some type of volunteer work someday somewhere…I don't think I wouldn't have done that if I haven't had RA, had to slow down, focusing on meditation and books on tapes, things like that, like new opportunity. (Liz)

One participant mentioned that the new activity she developed after RA gave her an opportunity to recall her childhood living experience. Kelly indicated that the reason she went to read in the forest after she had RA was because that was where she grew up:

> I grew up in Jackson county. We were in the edge of the forest, which is important to my life. It is almost mystical relationship. I mean I don't know how to put words into it, and if I put the words into it, it will change the meaning. It is deeply meaningful to me. (Kelly)

In summary, it was inevitable that the participants had to quit some of their leisure activities because of the physical limitations due to RA. The significance of the impact of "quitting" depended on the severity of RA and their leisure lifestyles before RA. Those with worse physical conditions and/or those who were more active before were more likely to quit more leisure activities they used to engage in. A sense of loss was expressed as the meaning of quitting one's favorite leisure activities. Some of them expressed that they felt "sad", "depressed", "mad", and "angry" about the fact that they might no longer be able to participate in those leisure activities. The finding of this study is consistent with Smith and Yoshioka's (1992) study. Smith and Yoshioka (1992) reported that over

76% of the participants with RA had changed their favorite recreation activities because of RA and most of them quitted relatively physically tenuous activities, such as bowling, running, or dancing, replaced by more sedentary activities, such as reading and crafting.

Continuity in leisure activities helped the participants feel that they still had the ability to perform certain kinds of activities although sometimes they had to modify their ways of doing these activities. For some of the participants, being able to do the same activities meant that they still could enjoy doing activities with their families. Furthermore, Lee, Dattilo, Kleiber, & Caldwell (1996) suggested that the experience of continuity in leisure activities, providing feelings of encouragement, buffers against the negative life events changes.

According to the data from this study, new activities were developed to accommodate the current physical conditions. The participants started searching for new leisure activities to replace those they quit to fulfill certain needs. The new activities also could help them learn new things and develop new perspectives of life, in which they might discover a new self, as well as opportunities to recall their old memories, where they might find their past self.

The process of the adaptation to the leisure activity for individuals with RA can be explained by using selective optimization with compensation theory developed by Baltes and Baltes (1990). Baltes and Baltes (1990) proposed that people tend to adapt to their activities during aging through the following three processes: selection, optimization, and compensation. Selection refers to quitting or reducing one's activities due to the loss in functioning. Optimization refers to the efforts that one makes in order to achieve optimal experience. Compensation refers to the use of a new or alternative way to

maintain functioning. After people have RA, many are forced to quit some of their leisure activities due to physical limitations. This refers to the selection process and facilitates a sense of loss. However, they may try to focus on continuing the leisure activities that they still are able to do by carefully planning ahead or spending more time on these activities so that optimization becomes possible and a sense of continuity is enhanced. Finally, developing new leisure activities to substitute those activities they quit compensates for the enjoyment and functions of the leisure activities in which they can no longer participate. At the same time, they are provided new opportunities for personal growth through the engagement of new leisure activities. It has to be noticed that there is no clear cut among these three processes (Gignac, Cott, & Badley, 2000).

Sometimes, the same action can be explained by more than one way of adaptation. For example, continuing one's leisure activity may mean any of these three processes: if one reduces time on this activity, then it is selection; if one increases time on this activity, it will be optimization; and if one used adaptive devices in order to continue this activity, it is compensation. However, in this study, most of the participants expressed the idea that being able to continue their favorite leisure activities made them feel more enjoyable and served as a bridge between the past and present experience. Therefore, continuing leisure activity is considered to be an adaptive process to achieve optimal experience in this study.

Negative Impact of RA on Leisure

RA had significant negative impacts on the participants' daily activities, including leisure activities. Every participant mentioned that their leisure activity patterns had changed in some ways, such as the discontinuity of certain activities, adaptation to

current activities, and discovery of new activities. Specifically, through the analysis of their descriptive data, it showed that being more passive, having reduced satisfaction in leisure activity, and experiencing negative feelings in leisure activity have occurred because of the negative impact of RA.

Being More Passive. Pain, fatigue, and/or loss of some physical functions due to RA prohibited the participants from doing many strenuous activities. Laura said "I've been so inactive." Most of the participants indicated that they chose reading as one of their major leisure activities after RA. Cindy and Laura watched TV a lot every day. Although passive does not necessarily mean negative, the fact that they were forced to become more passive than before had negative impacts both physically and psychologically. For example, Liz felt "grieving" and "not very happy" that she had to rest so much and was not able to "go outdoors as much as" she used to:

> I have to do passive things. I have to rest to be able to go back to work. I used to go home, and change clothes and then go for a run, or ride a horse, or go out in a boat. Now I go home, and I get a glass of water or tea and sit down, and I have to rest.

Reduced Satisfaction in Leisure Activity. Some participants mentioned that they were not enjoying their leisure activities as much as before. Sue said, "Sometimes it hurts so much. For example, when you are walking, when your ankles hurt, your knees hurt, even your shoulders sometimes, you don't enjoy it that much". Kelly expressed she could only go walking and swimming, and that "wasn't nearly as much fun as playing team sports". Because of the pain during walking, Sue could not enjoy traveling as she did before:

> Before I did a lot of traveling. I travel to Europe a couple of times. I did go once afterwards. I went to Italy for a week in year 2000 after I had RA. I got along alright although it wasn't as pleasant as before when I didn't have RA.

Negative Feelings about Leisure Activity. Most of the participants expressed some types of negative feelings about their leisure activities, such as feeling sad, mad, or depressed. Someone even mentioned that she felt ashamed. Many of them illustrated that they missed the activities that they had to quit due to RA. For example, when talking about the selling of her piano, Sue said, "I was sad to see it go" and "I missed it". Kelly felt depressed because of the fact that she could not play a musical instrument anymore:

> So that was very hard and that was very hard not to get depressed…making music in that way and only being able to sing and no longer being able to play, because it [RA] had moved into my fingers, and my elbow…I just couldn't play the instrument anymore. And that was hard.

Mary mentioned that she felt "frustrated" because she had to quit every exercise she used to love to do:

> It's definitely frustrating. It's the way for me to release stress. Even my parents wouldn't understand why I had to do so many exercises. They didn't know that I was stressful and I had to do them. So when I lost that kind of capability, at beginning it made me feel very bad, actually feel mad, too. The feeling inside me, I felt ashamed… I was strong before. I would never stop.

In conclusion, although they were still enjoying participating in many leisure activities, most of the participants expressed some negative feelings about their leisure activities due to RA. Kleiber, Brock, Lee, Dattilo, and Caldwell (1995) stated that:

> Even as individuals proceeded through rehabilitation and gained a new sense of being able to continue with familiar activities, albeit often in a modified form, there was still a sense of loss. Perceived constraints often served to undermine the full level of satisfaction and enjoyment to be derived from an activity. (p. 292)

The changes of their leisure activities after RA had made them feel sad, frustrated, mad, depressed, and ashamed. These negative emotions could cause stress that affected their experiences of leisure participations (Folkman & Moscovwitz, 2000; Kleiber, et al., 2002).

Positive Impact of RA on Leisure Activity

While the data were full of negative impacts of RA on living and leisure activities, some of the participants expressed positive elements about their leisure activities because of RA. For example, other than traveling, Sue said she had not engaged in many leisure activities before. After she had RA, she recognized that "I probably didn't do as much before as I do now". She became more active than before and was doing more exercises to maintain health and fight RA.

As mentioned before, most of them developed new activities due to RA. These new activities could show them something different, which they might never have been able to touch if they did not have RA. Mary started practicing Tai Chi after RA, and now she was so involved in Tai Chi that it became part of her life. She was so active before and used to love every kind of sport activities. Until she had RA and had to quit all the vigorous activities, she could not have had the chance to learn Tai Chi, a totally different type of exercise. Similarly, Liz became able to recognize more spiritual experiences because of the change of life due to RA:

> I always think that there is spiritual being wiser than me, who work through me in my life, and show me now some other things that I have not seen if I had stayed active and became less introspective. So now I do more meditation, more yoga, and I read a lot of books about spirituality.

Therefore, while negative impacts could be dominant in their leisure engagements, most of the participants reported that positive impacts existed. Some of the participants became even more active than before, and some were able to be more introspective after their lives became more passive. The new activities they developed after they had RA endowed them new perspectives of life and opportunities to learn different things.

It should be noticed that passive activities do not automatically mean negative. Many participants enjoyed passive activities such as reading and crafting. Some of the participants reported that watching TVs or movies helped them forget pain. Similarly, Smith and Yoshioka (1992) suggested that individuals who engaged more in sedentary recreation activities after having RA experience positive feelings. Therefore, passive activities may not lead to negative or depressed feelings. Certainly, individuals with RA who are physically inactive are more likely to feel stiff and experience inferior physical conditions.

For the general population, researchers suggested that people in aging tend to increase in continuing their old leisure activities and decline in developing new leisure activities (Iso-Ahola, Jackson, & Dunn, 1994). Iso-Ahola, Jackson, and Dunn (1994) proposed that everyone is seeking continuity and novelty through one's life span. Therefore, most of the individuals keep replacing old leisure activities with new ones, quitting old leisure activities due to difference reasons, or continuing in old and familiar leisure activities. It is basically the same pattern for individuals with RA. The reasons and meanings behind the changes in leisure patterns, however, may be different. For people with RA, other than factors such as aging, RA and adaptation to RA have become the most significant factors accounting for the changes of leisure patterns.

Research suggested that RA leads to changes in the patterns of leisure activities, including quitting or decreasing the participations of leisure activities. Lack of involvement in physical activities may worsen the physical conditions of individuals with RA. Hakkinen, Hannonen, Nyman, & Hakkinen (2002) reported that RA patients had demonstrated decreased muscle strength, lowered explosive force production, and

lowered cardio-respiratory fitness. Therefore, the maintenance of a physically active lifestyle is essential and beneficial to increase the functional capacity and improve the quality of life for individuals with RA.

The Role of Leisure in Coping with Stress from RA

The data showed that stress was part of the life of living with RA for the participants. Pain, limitations of living, and fear of the future were identified to be the sources of stress that were directly related to the RA. Additionally, many of the participants expressed that they were experiencing the feeling of loss in many ways, which could be another source of stress. Denvis et al. (1993) suggested that stress from chronic illness may lead to reduced positive experiences and perceptions of personal control. Therefore, how to deal with stress became one of the important issues in order to maintain health and have a quality of life (Lazarus, 1999). Other than relying on medical treatments, such as taking medications and surgery, all the participants testified that leisure helped them release stress from RA. When talking about why she was doing the exercises, Mary said, “I enjoy doing those kinds of exercises, ‘cause they made me feel good, made me forget everything, made me stress free. When I was feeling bad, feeling low, stressful, I always picked up physical activities to help me release stress”. Liz also mentioned that all the leisure activities were “stress reducing”. Through the analysis of the descriptive data, the roles of leisure in coping with stress from RA are identified as a means of escaping to release stress, a means of expressing negative emotions to release stress, a means of relaxing, a means of enhancing mood to release stress, a means of “mind off” to release stress, and a means of being with friends and others to release stress.

Leisure as a Means of Escaping to Release Stress

Some of the participants expressed that some leisure activities they participated in provided the opportunities for them to escape from their daily living environment so that they might forget their current stressful situation. For example, Jen described that leisure to her was to "get out of the environment and the house", and "that helps release a lot of stress". The ways to escape used by Jen were to be out of her house, sometimes just going out around the neighborhood, and the other times traveling out of town:

> And sometimes my strategy [to release stress] is just going out and riding around the neighborhood. I like to do that. Or for a vacation in Florida. I love to take off of this chair and just going, all around the area.

While traveling and going out of house were the common ways to escape to release stress, Liz described another way to escape from the reality:

> Books on tape, are purely, sort of escape, or fantasy, for a while I can forget all about everything in my life and just be someone else.

Therefore, although escaping through various forms of activities, all the participants considered leisure as an effective venue to reduce pain or stress from RA for a while. This coping method is similar to what is called leisure palliative coping in Iwasaki and Mannell's (2000) hierarchical dimensions of leisure stress-coping model, where leisure palliative coping is defined as "an escape-oriented coping strategy" in which people "temporarily escape from stressful events through leisure." (p. 168) Although this break could be short, it provided the participants an important opportunity to refresh and restore energy, gain positive experiences, and find meaning of life, which are resistant elements against stress (Folkman & Moscovwitz, 2000).

In Iso-Ahola's (1984) model of leisure behavior, escape is proposed as one of important leisure motivation dimensions. In escaping experiences, participants may be

able to totally immerse into the activities they are enjoying and forget the problems they are enduring. In a sample of aboriginal women and men with diabetes, Iwasaki, Bartlett, and O'Neil (2005) reported that leisure activities such as fishing and traveling served as a "time-out" from stress and allowed the participants under stress to "feel refreshed and gain renewed energy and perspective, and to help them regroup to better handle stressors" (p. 984). Thus, individuals with RA were able to experience a temporary release from stress from their leisure escaping experiences, even becoming stronger in coping with stress after they returned to normal life.

Leisure as a Means of Expressing Negative Emotions to Release Stress

Feelings of sadness, frustration, and depression were expressed by every participant because the impact of RA. These negative emotions, without proper coping, could cause tremendous amounts of stress. Since leisure has the expressive function, it had been used as a means to discharge negative emotions in order to release stress. Mary suggested that doing exercises for her was a way to release the feeling of "frustration" because of RA. Liz believed that "leisure is the expression of my soul and spirit". Liz found that she could use the leisure activities, such as writing poems, playing drums, and drawing pictures, to release her negative feelings:

> When I'm really upset, or feeling very bad...it's two ways, if you feel bad physically, then you can feel bad psychologically, or if you feel bad psychologically, then the rheumatoid will act up. So when that happens, I can write poetry and I can draw and paint a little bit, and I drum, and you can release your sadness.

When she was asked to describe more about what she wanted to express, she further explained:

> Sadness, frustration. I want people to understand that what they see…part of this is my own growth, I think "this is not who I am, this is what used to be who I am",

> but this is not true, this is who I am. I have to accept who I am, my new person, my new life, my new body. So I want to be different. So I think the expression of that is part of adjustment. So I can write a poem about not being able to be with my children when they are riding on their bikes, because I can't do that, I'm too sour that my legs can hardly move. So I can write a poem about that, or a small essay, or draw a picture of very sad woman, and that's me, feeling sad in my heart. So the expression is released and it is very therapeutic.

Self expression has been defined as one of the important characteristics of leisure (Iso-Ahola, 1999), in which people are able to express self or emotion freely. In this study, some participants indicated that they expressed their negative emotions through leisure activities to release stress. In Iaquinta and Larrabee's (2004) interview study with women with RA, negative emotions such as anger, fear, frustration and depression were reported. Hamilton, Karoly, & Kitzman (2004) proposed that people with negative emotions tend to find ways to avoid establishing long-term goals, rather negative emotions such as sadness and anxiety associated with pain may disrupt the ongoing activities and reinforce the negative experiences with people's illnesses.

Leisure activity may serve as an effective emotion-focused coping strategy that helps individuals release their negative emotions. In contrast, if one's negative emotions are not released, it may result in cumulative stress that leads to serious problems. This can be explained by the inhibition-confrontation theory which holds that inhibiting one's thoughts or emotions after traumatic events "requires physiological work, which, over time, places cumulative stress on the body, increasing vulnerability to illness," and confronting negative events "should undo the cumulative physiological stress of inhibition and strengthen resistance to disease" (Greenberg, Wortman, & Stone, 1996, p. 588).

Leisure as a Means of Relaxing to Release Stress

Some of the participants mentioned that leisure activities were relaxing. When participating in these leisure activities, they felt relaxed and stress was reduced. Diane described that "Even I was doing physical activity, I was mentally relaxing. It's relaxing to paint. I found I'm totally relaxing to do beads". Some of them mentioned that traveling or just going out for a walk could make them feel relaxed:

> Getting out and traveling, it will just release it [stress], 'cause I enjoy going around and looking at things, and that relaxed me. Even going to Florida, I love going to Florida. And that relaxed me. (Jen)

> In the morning, after I take a hot bath, I make a cup of coffee, I get dressed, and then I walk outside and walk around my yard and look at the plant, and drink a cup of coffee, (like on the weekend, not on the week day). That's very relaxing, very stress reducing. (Liz)

Feeling of relaxation could be the important motivation for people with RA to participate in leisure activities due to the fact that they had to find effective ways to release their stress from RA. Linda explained that she enjoyed swimming because it was relaxing:

> One thing that I don't have to do and I always look forward to because it relaxes me and just makes me feel better, is getting into the water. Even there is no class, like over the break, I still come and diving into the water and swimming around. I'm not a good swimmer. I do not enjoy swimming because I'm a good swimmer. I'm actually a poor swimmer. But it is just something about being in the water that I found very relaxing.

Blalock, DeVellis, Holt, & Hahn (1993) reported that individuals with RA tend to need more time for relaxing due to the pain and fatigue. Ailinger and Deer (1997) argued that individuals with RA have to frequently and deliberately maintain a balance between activity and rest by using different personal care management strategies. For example, Yoshida and Stephens (2004) found that three types of strategies are used by individuals

with RA to carry on their everyday life: a) organizing their living and working environments to facilitate daily activities, b) paying more attention on the ongoing activities to prevent risk or harmful outcomes, and c) prioritizing and reducing activities. Yoshida and Stephens (2004) suggested that these strategies help the individuals with RA reduce stress and fatigue, relax, and reserve energy.

Relaxation of leisure has been recognized as one of the silent characteristics of leisure for decades. For example, Shaw (1985) suggested that relaxation is one of the most important characteristics of leisure. Similarly, Tinsley and Tinsley (1986) and Tinsley and Eldredge (1995) supported that leisure experiences influence individuals' physical and mental health because of positive attributes of leisure, including relaxation. In a recent study in a sample of college students, Cai (2000) reported that relaxation in leisure activities significantly reduced anxiety and depression. Kleiber (2000), however, argued that relaxation of leisure is an area that has been neglected in the field of leisure studies. He stated, "leisure is most essentially a position of relaxation, of faithful openness to immediate reality and ease of movement and thinking" (pp. 83-84). Consistent with Kleiber's (2000) proposal, this study supported that relaxation is an essential leisure participation motivation for individuals with RA and serves as an effective stress coping means as well.

Leisure as a Means of Enhancing Mood to Release Stress

The participants described their leisure activities as something "fun" and "enjoyable". Therefore, leisure participation may result in good mood states, which help reduce stress and enhance psychological well-being (Iwasaki et al., 2002). For example, Sophia described that when she was in leisure activities with other people, she would feel

"cheery" and that would help her release stress. Some participants suggested that "laughing" and "breathing technique" were good ways of enhancing moods.

> [Leisure is] very important. Because it gets you away from your everyday life, you don't need to worry about whether…you just need to get into a different mind set. Well, like even laughing. I do a lot of laughing when we get together. It's good for your soul. (Ann)

> People with arthritis, especially rheumatoid arthritis, you tend to have chronic fatigue. A good breathing habit expending the chest, expending the belly, brings in as much fresh air as possible, getting plenty of oxygen all the time. It is very helpful in elevating and combating the fatigue. I think it is also helpful for one's mood. I think that probably has to do with keeping one's energy up. When one's energy is improved, it also helps combat depression and keeps one's mood. (Linda)

In Iwasaki and Mannell's (2000) hierarchical dimensions of leisure stress-coping model, mood enhancement is proposed as one of the leisure stress coping strategies. Leisure mood enhancement refers to the "enhancement of positive mood and/or the reduction of negative mood through leisure to regulate the emotions/moods of individuals under stress" (Iwasaki, 2003, p.188). Finegan and Seligman (1993) suggested that mood may influence one's attitude. They found that when people were in the positive mood condition, they were more likely to have a positive attitude, and this effect was enduring. This may imply that positive mood from leisure participation helps form positive attitude when encountering negative life events. The positive mood may lead people to the belief that a negative event is a challenge and opportunity rather than a threat (Finegan & Seligman, 1993).

Theory of emotion has been concerned as an important perspective in stress studies. Lazarus (1993) proposed that emotion, such as angry, anxious, guilty, sad, happy, and hopeful, "tells us much more than knowing merely that he/she is harmed, threatened, or challenged" (p. 10). Lazarus (1993) stated, "[the] use of stress as a source of

information about an individual's adaptation to environmental pressures is extremely limited compared with the use of the full array of emotions" (p. 10).

Leisure as a Means of "Mind off" to Release Stress

Many participants used the words "mind off" to describe the role of leisure in coping with stress. For example, Sophia said that the exercises "take your mind off your stress". She further gave an example: "if you are out walking, if it is a beautiful day, you can't feel horrible". Leisure activities gave the participants a break from their disease or work so that they were mentally switched to something that was fun and relaxing, in which they forgot the problems they were encountering. Although it could be just a very short period of break of mind, it helped release a lot of stress. Ann mentioned that she liked going to movies because it kept her mind off from things:

> [Going to movies let] you get away from what you feel, 'cause I guess I'm always thinking I have to do this and I have to do that. And you just get away from things. You get off from yourself. You get involved in the story. …so I liked to go to movies.

The "mind off" function of leisure was a very effective way in coping with pain from RA. Liz said that she would prefer to use physical activities, such as yoga and hot water belts, as a means to manage pain rather than taking pain medicines. While involved in leisure activities, many participants reported that they forgot the pain; therefore, pain related stress would be reduced.

> It takes your mind away from pain. That's the biggest thing. If I say it in one sentence, that's what it is. If you are doing something else that you really enjoy, your joints seem not hurting a lot. I don't know why, but it does. but when you click off, worrying or sitting there and feeling sorry for yourself, and you start… thinking about things, doing another things, walking in the water, that kind of staff is relaxing, is leisure activities that take your mind off the stress that has in arthritis. (Laura)

> You can say "let's go fishing". Within 30 minutes I'm ready to go, when I get there, I forgot all about the pain. (Cindy)

> You have something to do to keep you away from the words all the time, and you always have a goal to look up to do, so I don't worry about my pain, what's going on and that kind of stuff. (Candice)

In a series of focus groups study with Aboriginal women and men with diabetes, Iwasaki, Bartlett, and O'Neil (2005) concluded that "taking one's mind off" is one of the functions that leisure activities serve in coping with stress. While discussing the role of leisure activities as a buffer against the impact of negative life events, Kleiber et al. (2002) stated:

> Watching television, listening to music, using drugs and alcohol, sleeping, playing with video games, playing with a pet, exercising, eating, shopping, engaging in sex, and other forms of diversion are emotion-focused strategies used to keep one's mind off the problem and reduce the negative feelings that are associated with negative life events and resulting stressors. (p. 225)

Similarly, in a study with individuals with spinal cord injuries, Kleiber, Dattilo, Loy, and Hutchinson (as cited in Kleiber et al., 2002) reported that after having severe injuries many individuals expressed the need to keep their mind off their worries. Therefore, leisure as a means of "mind off" provides a positive way to allow individuals under stress to have a mental break from the stressor.

Leisure as a Means of Being with Friends and Others to Release Stress

Leisure activities provided opportunities for the participants to meet friends and other people. Most of the participants reported that being with friends and other people helped release stress. Participants described that they could meet people in the activity classes, invite friends to their houses, or just talk with friends on the phone.

> I'd like to have companion to come to my house. I had a lot of friends. I got a lot of different networks. I got a network at the Y. I have my quilting group, I have

> my church group, I know some of the wives from my husband's colleagues. I might have two or three good friends that are my son's friends' parents. (Vicki)

Laura mentioned that she went to the YMCA for water exercise, and that was the place where she could meet with other people. Laura further explained that sometimes meeting with people, rather than doing exercise, was the main reason for her to go there.

> We start walking, back and forth, and we talk with each other, it's like walking around the park with somebody, instead of walking in the water, that's where I get a lot of the interactions with people, it's in that class, 'cause we talk about what's in the TV, anybody see the latest movie, what's going on around the world, what's going on in Bloomington. So, we are doing our group activity while we are talking to other people, to me, it's very nice, that's relaxing and fun. I go to the Y not just to work out, but to have fun and interact with people. Interacting with people is one of the things I miss doing in every day basis. (Laura)

In the context of leisure, the participants reported that they could express their problems to friends, talk about other things so that they forgot their pain, and positively influence each other emotionally in a group atmosphere.

> Sometimes I just want to go there to have fun, and meet with other women, and we talked about what we did about our family, where we went for vacation, so there were something to do and put you not to be sitting at home and not doing anything and just thinking about your pain and stiffness. So it was fun to get with somebody, we talked about all the problems. (Candice)

> You are in the aerobic class with a few people you know, and they are all cheery and get along well, and somehow you react to them and you do well, and you cheer up yourself, so, I think it helps to be with people, and just not to be alone all the time. (Sophia)

Friends could mean different things for different participants. Kelly expressed that friends were "those I'm close with…we create together…we make a thing". To Vicki, friends were a "source of occupying my time, talking, laughing, sharing experiences, listening, comparing how I would handle the situation to somebody else might". Vicki expressed that she was not expecting help from friends:

> Friends mean to me that I can rely on them, that I can share with them. And sometimes I don't rely on friends to help me very much, because I'm stubborn, and I'm independent, I want to do it myself. It's tough to accept some body's help.

Social support has been well documented as associated with stress coping (Cohen and Wills, 1985; Langford et al., 1997; Thoits, 1995). Langford et al. (1997) suggested that social support mediates stress because of its association with such positive factors as personal competence, perceived control, perceived self-worth, psychological well-being, decreased anxiety, and decreased depression. Krohne and Slangen (2005) reported that patients who perceived higher social support demonstrated less anxiety and stayed shorter in the hospital than those with low support.

Coleman and Iso-Ahola (1993) suggested that friendships and companionship through leisure provide social support. Socialization has been found to be an important motivation for leisure participation (Kelly, 1987). Through the process of socialization in leisure, people may make friends, share information, and express emotions, which are all different kinds of social support. Even the perception of the availability of social support, not the actual one, has the effect of buffering against stress (Wethington & Kessler,1986).

In Iwasaki and Mannell's (2000) hierarchical dimensions model of leisure stress coping, both leisure companionship and leisure friendship are conceptualized as a form of social support. They distinguished leisure companionship from leisure friendships based on if it is a perception or an actual act. Iso-Ahola and Park (1996) found that social support generated from leisure is important for health and well-being. They further reported that leisure companionship is different from leisure friendship, where the former moderates the impact of life stress on mental health, and the latter on physical health.

Summary

The findings of this study showed that RA had impacted the life of these participants in many ways and caused illness-related stress. Meanwhile, these participants' leisure activity had been significantly impacted. In the process of coping with stress from RA, leisure played an important role. The participants reported that the leisure activities they engaged in were fun and enjoyable, which helped them relax, enhance mood, and release stress. Furthermore, leisure provided a social context in which the participants could meet other people. By sharing problems and talking with other people, they reported that they released stress. In addition, in a group environment, some participants mentioned that they were influenced by the cheerful emotions from their peers, a positive effect that they usually were not able to achieve when they were alone. Based on the data from the interviews of these participants, leisure could be used as a means of escaping, expressing negative emotions, relaxing, enhancing mood, taking one's mind off, or being with friends and other people to release stress. Based on the findings from this study, a working model was constructed to represent the relationship between leisure and stress from RA (Figure 5).

This model represented an interactive relationship between leisure and stress. In previous models of leisure and stress coping (Cohen & Iso-Ahola, 1993; Iwasaki & Mannell, 2000), the impact of stress on leisure had been neglected. In this study, the dynamic relationship between leisure and stress was proposed in order to capture a whole picture of the coping process. Based on the findings from this study, the whole picture of this coping process was: RA impacted life and leisure both negatively and positively;

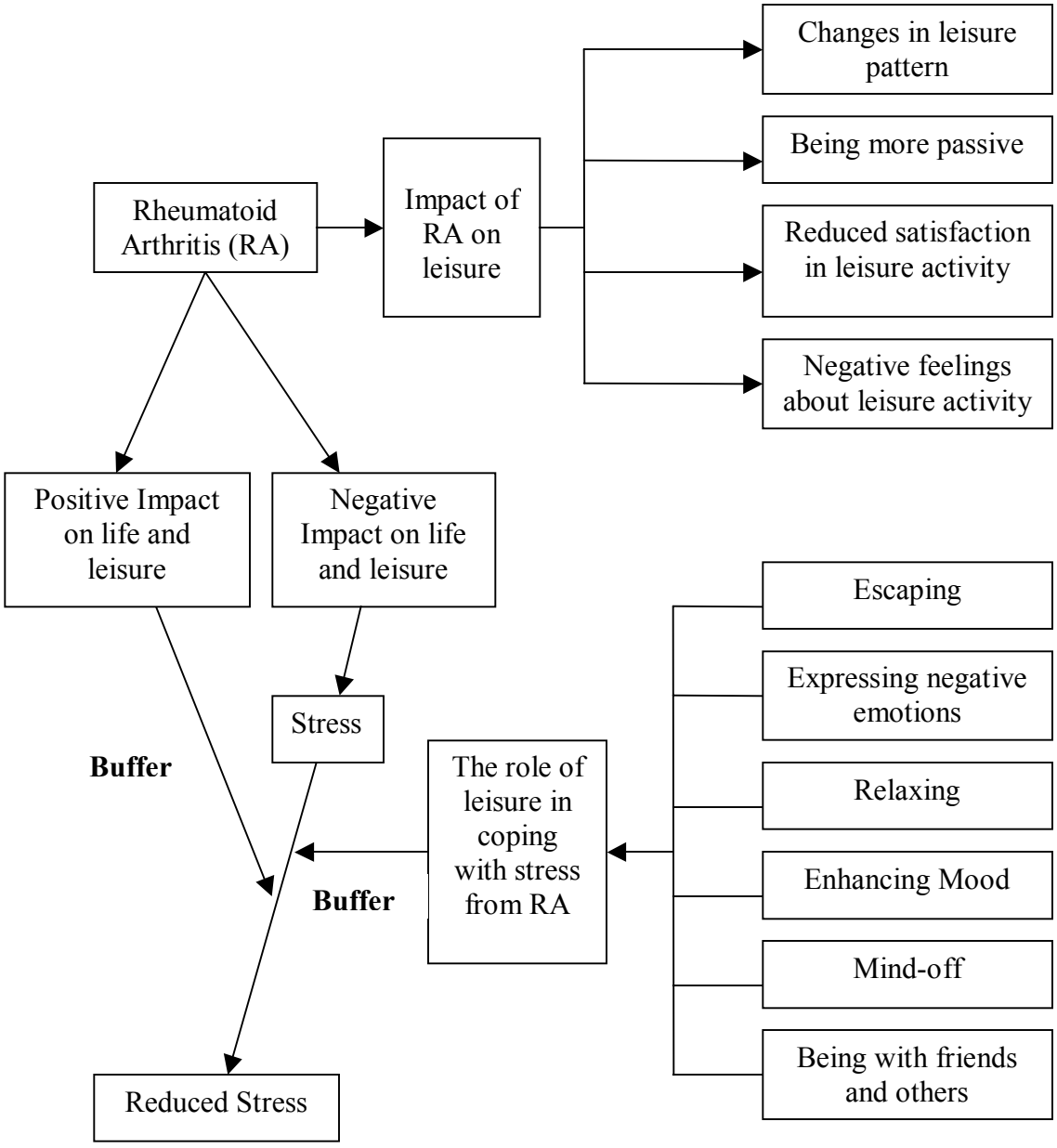

FIGURE 5 Model of interactive relationships between leisure and stress from RA

while the negative impact of RA on life caused stress, leisure and the positive impact of RA on life buffered against stress.

First, the negative impact of RA on life and leisure caused tremendous amount of stress for the participants. The symptoms related to RA had changed and restricted the lives of these participants. Most of them experienced joints deformations, two participants ended up with using of wheelchair, and the majority was experiencing difficulties in carrying out basic daily living activities. Almost all the participants reported that pain was the most significant stress from RA. Pain caused the participants to become fatigue and passive. Participants' daily activities, including leisure activities, were influenced by pain. Some participants reported that their everyday mood was impacted by pain. When there was no pain, they felt happy; when there was pain, they felt stressful. Besides pain, the participants reported that limitations in daily living, feeling of loss, and fear of the future were the common stressors associated with the impact of RA.

It is important to notice that positive impact of RA on life and leisure may buffer against stress. Some participants reported that in the adaptation process with RA, they gradually learned to accept help from others, to be empathetic to others, to accept imperfect self, to enjoy life more, to be more patient, and to be more open minded. In leisure activities, some reported that they even became more active than before they had RA; others indicated that they became more introspective and spiritual while they involved more in passive leisure activities because of RA; and still some reported that they established new perspectives from new leisure activities they developed after having RA. These experiences of personal growth are the positive resistant resources that moderate stress from RA. Especially the new perspective about life constructed after having RA may serve as an important emotion-focused coping strategy through the

reappraisal of this negative life event (Folkman & Moscovwitz, 2000; Kleiber et al., 2002; Lazarus, 1993).

Other than the positive impact of RA on leisure discussed above, RA impacted the participants' leisure life in terms of leisure pattern, leisure satisfaction, leisure lifestyle, and leisure emotion and mood. Due to RA, participants in this study chose to quit some of the leisure activities that they could not do or were not suitable for them to do, continue some of the leisure activities that they were still able to do (sometimes with modification and assistance), and develop new activities based on their physical conditions and interests. The impact on leisure patterns should not be simply interpreted as negative. For example, although cessation of leisure activities they enjoyed before may mean a sense of loss, which is negative, it may also mean that quitting of the strenuous or dangerous leisure activities is a wise choice to avoid worsening the disease, which is positive. Most of the participants, however, reported that their leisure lifestyle became more passive, sometimes they experienced a reduced level of satisfaction in leisure participation, and sometimes the feelings of loss and incompetence in leisure activities induced the negative emotions such as feeling sad, ashamed, depressed, and frustrated. All these negative experiences in leisure may increase the perceived level of stress (Folkman & Moscovwitz, 2000).

Regarding the role of leisure in coping with stress from RA, all the participants agreed that leisure was an important element in coping with stress. Six types of leisure coping strategies were identified from the analysis of the interview data. Almost every participant reported that escaping from their daily living environment through leisure activities, such as leisure traveling and outside walking, released a lot of stress.

Expressing negative emotions through self expressive leisure activities were reported to be an effective way to cope with stress. For example, writing poems to express sadness helped one participant to feel that the sadness feeling was released. Most of the leisure activities were perceived as relaxing by the participants. Considering the pain and fatigue related to RA, relaxation function in leisure could be a crucial motivation for leisure participation for individuals with RA. In leisure environment, participants felt that it was free, fun, and enjoyable. One participant reported that she felt cheerful when she was in the aerobic exercise class. These positive mood states help reduce stress (Iwasaki et al., 2005). Additionally, many participants expressed that leisure activities helped them "take your mind off your stress." Finally, being with friends or other people in the leisure social settings was reported as a way of coping with stress.

The model of interactive relationships between leisure is a working hypothesis that represents only a specific context at a specific period of time for a specific group of individuals. Differences between individuals and situational contexts may require new model and different theories to explain the new phenomena. Strauss and Corbin (1990) suggested that variations exist in any theories. They proposed that continuing investigation by expending the settings and populations will reduce the level of variation so that the theory may be more accurate and closer to the truth. Time is another factor that should be considered for variation. The findings of this study just represented a specific time in the participants' life and reflected the specific meaning at that time. The meaning, the attitude to leisure, and the leisure participation are all subject to change over time.

Chapter 5

DISCUSSION

This chapter summarizes and discusses the findings of the study in relation to the reviewed literature and other related studies. As a result, a new model of leisure positive reappraisal stress coping is proposed and discussed. Finally, limitations of this study, recommendations for the future research, and conclusions are presented.

Model of Leisure Positive Reappraisal Stress Coping

The findings of this study support that leisure may serve as a strategy in coping with stress from RA. This study also found that leisure is impacted by RA, both negatively and positively. Furthermore, based on the empirical findings and theoretical analysis of stress coping models, this study elicited the way in which leisure stress coping may involve the positive reappraisal of RA through leisure participation.

Based on the findings in this study and theoretical analysis of stress coping models, the model of leisure positive reappraisal stress coping is proposed (Figure 6). The leisure positive reappraisal model suggests that leisure buffers against stress through its influence on reappraisal of stressful situations. That is, leisure provides a context and serves as a means to reappraise the situation under stress positively to reduce the level of stress perceived.

In leisure coping literature, the leisure coping mechanism has been examined by exploring the aspects of leisure serving as stress coping functions. In Colemen and Iso-Ahola's (1993) model, they suggested that leisure generated self-determination and social support dispositions buffer against stress. Other than these two leisure coping

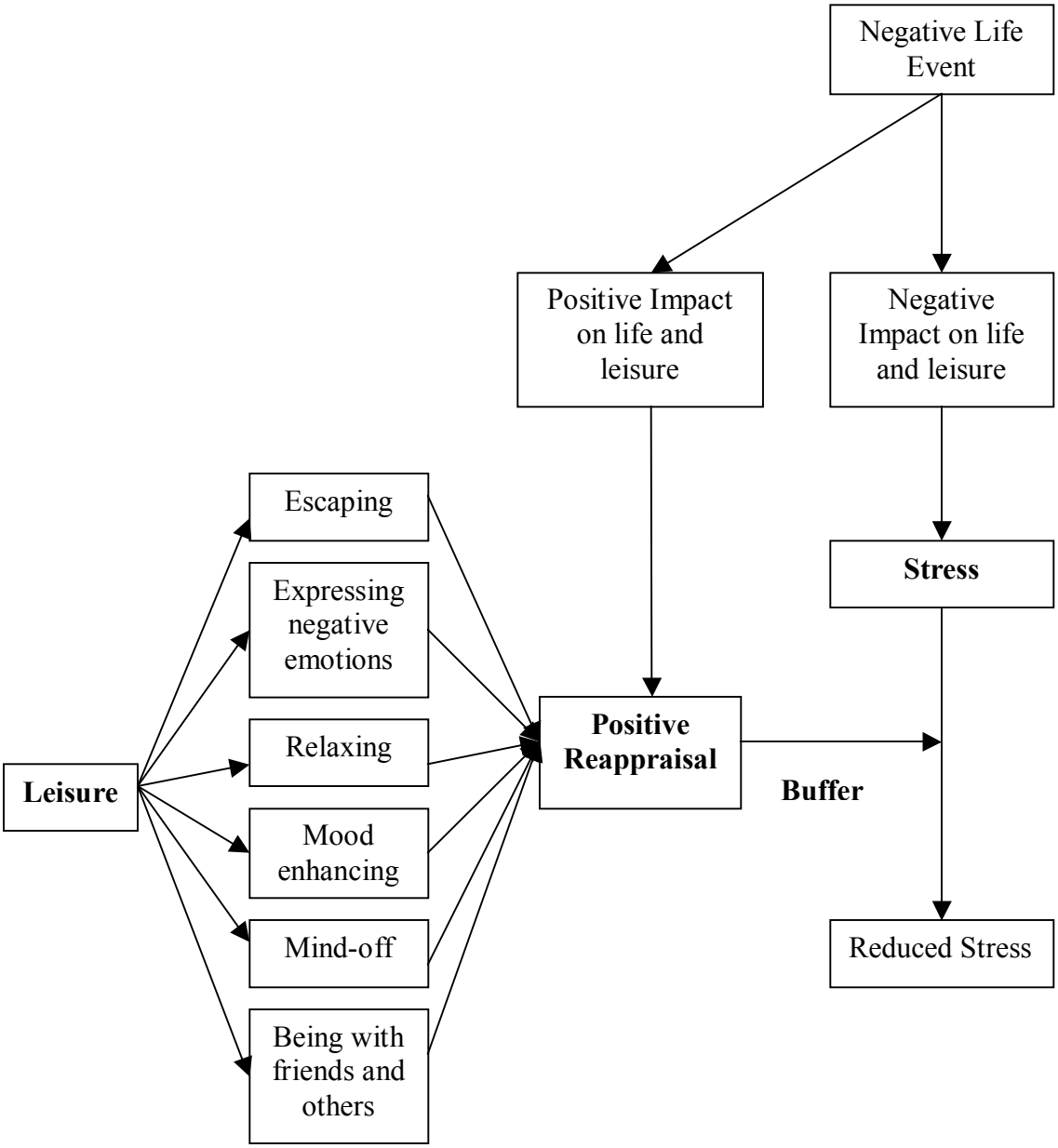

FIGURE 6 Model of leisure positive reappraisal stress coping

mechanisms, Iwasaki and Mannell (2000) further proposed that leisure copes with stress through leisure companionship, leisure palliative, and leisure mood enhancing functions. Similarly, these two leisure stress coping models implied a direct relationship between leisure and stress.

According to Lazarus and Folkman (1984), however, all the coping strategies work through reappraisal of the situation to achieve the desired effect in coping with stress. Therefore, rather than dealing with stress directly, leisure can only serve as a buffer against stress by changing the ways to reappraise the stressful situation. As the negative life event has a significant negative impact on life, people tend to perceive the negative life event as threatening and harmful, which causes stress. In the leisure environment, however, people are more likely to perceive the environment and activity as something fun and enjoyable, and feel that they are good at the activities in which they participate. As a result, a positive appraisal of the current situation may occur instead of the appraisal of threat and harm that leads to perception of stress. For example, when the individuals with RA feel that their bodies are relaxed and pain is reduced in swimming, they are more likely to perceive that RA is something that can be controlled and managed. Then, they may reappraise RA as something less threatening and harmful, which will buffer against stress.

This is consistent with Folkman (1997) and Folkman and Moskowitz (2000)'s studies. Folkman (1997) defined positive reappraisal as "cognitive strategies for reframing a situation to see it in a positive light" (p. 1212). She further suggested that positive reappraisal likely leads to positive emotions and serves as a buffer against stress. Folkman and Moskowitz (2000) proposed that positive affect may "interrupt and thereby short-circuit this rumination spiral and prevent the decline into clinical depression" (p. 649). Therefore, leisure, as one of the many ways to produce the positive reappraisal, may promote positive emotions that lead to reduced stress.

The results of this study show that RA impacts leisure both negatively and positively. The negative impacts of RA on leisure include being involved more in passive leisure activities, reduced satisfaction in leisure activities, and negative feelings about leisure activities (e.g., feeling sad, mad, or depressed), which may negatively influence people's reappraisal of the situation. This is consistent with Lasson et al. (1998) and Albers' (1999) study. Albers (1999) reported that more than half of the individuals with RA in the study were not satisfied with the leisure activities in which they were participating.

It should be noted here that not all passive leisure activities are negative all the time. In contrast, sometimes passive leisure activities are necessary for individuals with RA when they are experiencing a great deal of pain, fatigue, or limitations of mobility. Passive leisure activities, such as reading, watching TV, and doing crafts, can be fun and enjoyable and can help individuals under stress relax. Similarly, Smith and Yoshioka (1992) reported that positive feelings are associated with passive recreation activities among RA individuals. Many participants in this study, however, testified that with the lack of walking or other active leisure activities, their ability to walk declined and they experienced increased levels of body stiffness and pain, which might have caused increased levels of stress. Consequently, increased involvement in passive leisure activities may result in reduced satisfaction in leisure activities. Most of the time, people tend to be alone in passive leisure activities. The lack of social context in passive leisure activities sometimes reduces the level of enjoyment. Additionally, declined and restricted physical ability is another reason that may reduce satisfaction in leisure activities for individuals with RA. Finally, both increased involvement in passive leisure activities and

reduced satisfaction in leisure activities may cause individuals with RA to accrue negative feelings. As discussed in chapter 4, negative feelings and emotions are associated with increased levels of stress.

Physically active leisure activities, however, have been found to be positively correlated with health and well-being for individuals with RA. For example, Rall and Roubenoff (2000) reported that strength training improves strength, reduces pain and fatigue, and increases the ability to walk and keep balance among RA individuals. Lundgren and Stenstrom (1999) suggested that there is a positive relationship between muscle relaxation training and quality of life in a study of people with RA. Therefore, a physically active lifestyle should be encouraged for individuals with RA.

In this study, the impact of RA on leisure patterns shows a mixed effect. Most of the participants expressed that quitting the leisure activities that they used to engage in was a negative experience, reflecting a sense of loss. No matter whether they were forced or volunteered to give up the leisure activities that they did before, it was difficult, and sometimes it required a long time for them to accept the fact of the loss. The findings show that the significance of the meaning associated with the quitting of leisure activities is a determinant factor of the distress caused. The more meaningful and the more important the activities are, the more stressful the participants may perceive. Another clue that emerged in the data is that previously active leisure participants may experience more distress and take a longer time to adapt to the changed leisure style—from very active in the past to relatively passive now. The reasons may be that those who were actively involved in leisure activities before having RA value the leisure activities more than those who were relatively less active before, or simply because the change of life

style is more significant for those who were active before, requiring more efforts of adjustment.

In this study, being able to continue some of the former leisure activities is considered as a positive experience that enhances a sense of continuity. This is consistent with Lee et al. (1996)'s study. Lee et al. (1996) suggested that a sense of continuity from leisure activity may provide opportunities to reconnect with the past self, restoring self-images that disrupted by negative life events.

The new activities developed after RA also encompass positive meanings to the participants in terms of searching for new opportunities and discovering a new self. Other positive impacts of RA on leisure activities that emerged in this study include being more active than before having RA and engaging more in spiritual and introspective leisure activities. Almost all the participants in this study developed some new leisure activities after having RA.

One reason for developing new activities may be explained by the recreation substitutability theory. According to recreation substitutability theory, people tend to "choose as substitutes those activities that provide similar psychological experiences, satisfactions, and benefits as the original activity" (Mannell & Kleiber, 1997, pp. 343-344). For example, in this study, Diane reported that she substituted tennis with golf because they were both outdoor recreation activities. Diane used to be a physical education major student and tentatively involved in tennis before. Therefore, in golf, Diane still could fulfill her need for an active competitive activity. In this sense, recreation substitutability facilitates a sense of continuity in people's life experience. Recreation substitutability, however, could not explain every case in this study. Some

participants developed totally new leisure activities with new meanings. For example, after having RA, Liz started to write poems to express her sadness and listen to spiritual tapes searching for personal growth. Moreover, Mannell and Kleiber (1997) proposed that the ability to substitute activities indicates the person possesses a sense of freedom and more resources of choice, which may be appraised as resilient resources buffering against stress. Therefore, the meaning of new activities developed after the negative life events remains further investigations.

Concerning the role of leisure in coping with stress from RA, the findings show that leisure buffers against stress in six different ways: escaping, expressing negative emotions, relaxing, enhancing mood, taking one's mind off, and being with friends and other people. Some participants indicated that escaping the environment through leisure activities, such as traveling, going to the parks, or simply taking a short walk outside their home, helped them release stress from RA. One participant mentioned that even listening to audio books was an experience of escape from the reality of suffering from RA. Escaping is reported to be associated with the relaxing and the "mind-off" functions in leisure in this study. Folkman and Moscovwitz (2000) and Iwasaki et al. (2005) suggested that the benefits of leisure escape are not only a break from stress, but also may foster the change of appraisal of the problem after regained new energy.

Many participants in this study reported that leisure activities helped them keep their minds off the problems of RA. For example, some participants mentioned that walking and watching movies let them forget their worries. Furthermore, several participants indicated that leisure activities took their minds off stress from pain. Laura said that "if you are doing something else that you really enjoy, your joints seem not to

hurt a lot." Similarly, Kleiber et al. (2002) concluded that the leisure "mind off" function acts as a buffer against stress by reducing negative feelings associated with negative life events. Like that proposed by Kleiber et al. (2002), the mechanism of leisure escaping and leisure "mind off" in this study is to "divert one's attention from negative feelings and their cause and supplant them with neutral or positive feelings, which may, in time, stimulate reinterpretation of the situation in question" (p. 225).

The feeling of relaxation was expressed by the participants most frequently in their leisure experiences in this study. As a common experience of leisure, relaxation has been neglected in leisure studies (Kleiber, 2000) as well as in leisure stress coping studies. Some participants in this study indicated that leisure activities, such as listening to music, swimming, and socializing, facilitated the feeling of relaxation, both physically and mentally. Relaxing probably is the central purpose of participating in leisure activities for the participants in this study. Actually, most of the participants reported that the experience of leisure escaping was for relaxing. Expressing negative emotions, enhancing mood, taking one's mind off, and being with friends and others helped relax mental stress. Some participants indicated that mental relaxation and physical relaxation were interactive with each other. When one is mentally stressed, he or she may feel stressful physically, and vice versa. Similarly, while one is physically relaxed, he or she may experience mental relaxation as well, and vice versa. Therefore, one's mental status and physical status interactively affect each other (Kleiber et al., 2002). In leisure activities, people under stress are more likely to experience physical and mental relaxation, which may change their appraisal of the situation as less stressful and more controllable.

Another leisure coping strategy, expressing negative emotions through leisure activity to release stress, also has not received enough attention in previous leisure coping studies, while leisure's self- expression function has been concluded to be one basic attribute of leisure by many researchers (Iso-Ahola, 1999; Mannell & Kleiber, 1997). Some participants in this study illustrated that negative emotions because of RA, such as frustration, sadness, and anger, could be expressed by participating in self expressive leisure activities, such as drawing, writing poems, and playing musical instruments. As discussed before, negative emotions, if not dealt with appropriately, may result in increased stress. Therefore, being able to express negative feelings in leisure activities may enhance mood, change perspectives, and facilitate positive reappraisals that contribute to releasing of stress.

Finally, most of the participants reported that being with friends and other people helped release stress. Sometimes some leisure activities were just viewed as opportunities for meeting with friends. For example, Laura stated that "I go to the Y not just to work out, but to have fun and interact with people." This study supported that social support generated from being with friends and other people in leisure activities buffers against stress (Gerhardt, 1979; Cutrona, Russell, & Rose, 1986; Thoits, 1995). All the dimensions of social support (emotional support, material support, informational support, companionship, and esteem support) suggested by Cohen and Wills (1985) may accrue in leisure activities (Iwasaki & Mannell, 2000).

It is worth noting that leisure self-determination is not found to be a leisure coping strategy in this study. Both Colemen and Iso-Ahola (1993) and Iwasaki and Mannell (2000) conceptualize leisure self-determination as an important leisure coping

mechanism in their models. They suggested that the leisure self-determination characteristic facilitates locus of control personality that is resistant to stress. This study, however, consistent with Iso-Ahola and Park's (1996) study, shows no support for the positive moderating effect of leisure self-determination disposition. The reason for this controversy may be because of the different nature of research methods. A quantitative research method is used in both Colemen and Iso-Ahola (1993) and Iwasaki and Mannell's (2000) studies, where leisure self-determination is theoretically assumed as one of the leisure coping strategies in advance and questions about leisure self-determination function are asked directly. In contrast, with a qualitative nature of this interview study, no direct questions related to self-determination are asked and the analysis is based on the themes that naturally emerged from the interview data. The other reason may be that no participants in this study mentioned leisure self-determination as a coping strategy because self-determination is not a leisure experience but "a conditioning factor that determines leisure experience" as suggested by Lee (1990, p. 112).

Limitations

Due to the fact that no male participants were recruited, this study is limited to the understanding of the role of leisure stress coping with women with RA. It is possible that men with RA may have different experiences with the role of leisure in coping with stress. Although the participants recruited in this study represented diverse racial groups, the majority are white females with relatively higher educational backgrounds. Furthermore, all the participants in this study were recruited from two small towns in the United States. They might have different leisure lifestyles than people living in the larger cities.

In addition, most the participants in this study have more than one disease other than RA. It seems that it is very common that people with RA will develop other diseases due to the side effects of medications they took or the development of RA itself. Therefore, the findings of this study may not reflect the impact on life and leisure activities only from RA, although RA is reported by the participants as their major problem.

Caution should be used when explaining leisure stress coping by using this leisure positive reappraisal model to the general population. The participants in this study are under a relatively higher level of stress than those of the general population. Therefore, the general population may not perceive leisure as a stress coping strategy in the same way as the participants with RA in this study.

Recommendations for Future Research

Leisure stress coping is a relatively new research area that has stimulated new perspectives in leisure studies. It represents the trend of interdisciplinary studies that connect leisure studies with research in psychology, sociology, and physiology. Moreover, leisure stress coping theories have the potential to connect other leisure theories, such as leisure motivation, leisure satisfaction, and leisure constraints. Therefore, leisure stress coping is an area that is worth further inquiry. Leisure phenomena, however, are complex and multiple dimensional. People's leisure experience is subjective and difficult to measure objectively. No single type of research method is able to accomplish the goal to completely understand the role of leisure as a stress coping strategy. Thus, more studies with different research methods, both qualitative and quantitative, are encouraged to explore the function of leisure in coping with stress.

The leisure positive reappraisal stress coping model suggested in this study provides a new theoretical framework to examine and explain the role of leisure in coping with stress. The assumption of this model is based on cognitive theory that holds that coping is a cognitive process. Apparently, theories from other approaches may develop different coping models. Therefore, researchers who are interested in leisure stress coping may apply other approaches in understanding the mechanism of leisure stress coping.

A distinction between general leisure participation and leisure for stress coping is recommended for future studies. When we say coping, there must be some efforts we put into managing the stress situation. Coping is the behavior which occurs after primary and secondary cognitive appraisal. According to Lazarus and Folkman (1984), through primary and secondary cognitive appraisal, people recognize stress and identify whether they have enough resources to cope with the stress. After this stage, people choose certain coping strategies that they want. Therefore, when talking about stress coping, there must be stress that is perceived by the person, who will then initiate his/her coping behavior – problem-focused coping or emotion-focused coping. This suggests that only buffer effect exists in coping theory. This can be simply explained as: if there is no stress, what do we cope with? As for the main effect or general effect of leisure proposed by Iwasaki and Smale (1998) that leisure has the function to improve general well-being no matter if stress is present or not, should be considered as an issue outside of coping theory, although people's well-being does have an effect on the appraisal of resources the person has in coping with stress. In conclusion, leisure serves as a buffer in coping with stress. As to the leisure belief proposed by Iwasaki and Mannell (2000), it does have an impact on the stress by its influence on the leisure related reappraisal of stress and on the

decision-makings process of leisure stress coping behaviors. Itself, however, is not a coping strategy. Therefore, future research is suggested to identify the role of the specific leisure behaviors that are intentionally initiated for coping with stress.

Conclusions

While the negative impact of RA on the participants is dramatic and stressful, the positive growth from fighting with RA has been identified. Although most of the participants with RA experienced reduced leisure satisfaction and increased participation in passive leisure activities, leisure facilitates enjoyable and relaxing experiences that provide the opportunity for positive reappraisal of stressful circumstances to reduce the perceived stress from negative life events. Therefore, leisure buffers against stress through facilitating positive reappraisal of the higher level of stress.

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APPENDICES

APPENDIX A

INFORMED CONSENT FORM

INDIANA UNIVERSITY – BLOOMINGTON
STUDY INFORMATION SHEET

[Stress and Leisure Coping for Adults with Rheumatoid Arthritis]

You are invited to participate in a research study. The purpose of this study is to understand the role of leisure as a coping strategy in managing the stress for people with rheumatoid arthritis. This study will increase the knowledge about the role and meaning of leisure in the process of dealing with stress.

INFORMATION

You will be asked to participate in a one hour interview. You will be asked to answer questions related to your disease history and the role of leisure as a stress coping strategy. In addition you will be asked to provide feedback on interview transcripts. This may take about one hour. The interview will be audio tape recorded. The tapes will be used only for research purposes. Only the researcher has access to the tapes. You will be allowed to preview the tapes. The tapes will be destroyed by December, 2006. Approximately 10-15 subjects will be participating in the research.

RISKS

There is no risk in this study.

BENEFITS

This research will benefit both the leisure researchers and the patients with rheumatoid arthritis by providing them with an increased understanding of the role and meaning of leisure in coping with stress.

CONFIDENTIALITY

Other than the researcher, no body will be allowed to access the tapes without permission from the researcher. Tapes will be labeled with your real name and kept in the home of the researcher. You will be given a pseudonym in the report. A list of the links between the pseudonym and the real name will be kept by the researcher. The tapes and the links will be destroyed by December, 2006.

COMPENSATION

For participating in this study you will receive $15. If you withdraw from the study prior to its completion, you will receive $3.

CONTACT

If you have questions at any time about the study or the procedures, you may contact the researcher, Lei Guo, at Indiana University HPER Building Room 133, Bloomington, Indiana 47405, (812)857-6647, and leguo@indiana.edu.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have not been honored during the course of this project,

you may contact the office for the Indiana University Bloomington Human Subjects

Committee, Carmichael Center L03, 530 E. Kirkwood Ave., Bloomington, IN 47408, 812/855-3067, by e-mail at iub_hsc@indiana.edu.

PARTICIPATION

Your participation in this study is voluntary; you may refuse to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed.

Consent form date: April 9, 2005

APPENDIX B

DEMOGRAPHIC QUESTIONNAIRE

Stress and Leisure Coping for Adults with Rheumatoid Arthritis
Demographic Questionnaire

Directions: Please place a check or provide information in the space indicated.

Background Information:

1. Name: 2. Gender: □ Male □Female 3. Age:

4. Education: □ lower than high school □ high school □ college □ master/doctor degree

5. Marriage: □ Single □ Married □ Divorced □ Widowed

6. Occupation:

7. Family members who are living with: □ spouse □ children □ parents others:_____

8. Race: □ Caucasian □ African-American □ Hispanic □ Oriental □ Others____

9. Mailing address:

Illness Information:

10. Length of illness:

11. Joints involved: □ fingers (L R) □ wrists (L R) □ shoulders (L R) □ elbows (L R)
□ hips(L R) □ knees (L R) □ ankles □ toes (L R) □ neck □ spine

12. Duration of morning stiffness:
□ None □ 15-30 minutes □ 30-60 minutes □ More than 60 minutes

13. Degree of pain:
□ None □ Mild □ Discomforting □ Excruciating

14. Degree of deformity:
□ None □ Mild □ Moderate □ Marked

15: Ability to carry out activities of daily living
□ Without difficulty □ With difficulty but without assistance
□ With some assistance from others □ Complete assistance from others

16: Other diseases besides rheumatoid arthritis:

APPENDIX C

INTERVIEW PROTOCOL

Interview Protocol

Thank you for participating in my study. The purpose of this study is to understand the role of leisure played as a stress coping strategy for rheumatoid arthritis (RA). I'm going to ask you several questions. Please answer them in detail as much as possible. Now, let's start.

1. Could you describe the history of your disease first? When did it occur? What was the disease development process? How did you treat it?
2. What was your feeling when you knew you got RA?
3. Could you describe the impact of the RA on your life? How did RA impact you psychologically? What are the things mostly make you feel stressful? What do you fear the most about RA?
4. What kind of strategies you used to cope with the stress from RA? Did you feel emotional distress or depression? How did you cope with depression? How did you cope with pain? How did you cope with disability?
5. What kind of support did you get?
6. How do you see the change of your life because of RA? What's your feeling about the change?
7. What are the impacts of the RA on your leisure activities? Did you start new leisure activities or exercises after you had RA? What do they mean to you?
8. When you look back, how much did leisure activities help you cope with stress from RA?
9. What are the impacts of RA on your leisure activities? Do you have the same level of satisfaction from leisure activities participation as before?
10. Could you tell me a story about how you used leisure activities to cope with the stress from RA?
11. What is the meaning of leisure activities for you in coping with the stress from RA?
12. What did you learn from the process of fighting with RA?
13. How do you see the role of leisure as a coping strategy of RA?
14. Do you have any comments related to today's topic that you want to talk about?

15. Do you have any question for me?

Thank you for your time. After I finish the analysis of the transcripts of this interview, I may call you and share the findings with you.

APPENDIX D

PARTICIPANTS

Participants

Ann

Ann, 72, started to feel the pain about 50 years ago. When she was 27, she was told to have anxiety. She said she was that type of person who wanted to get everything done. She had four kids. After she got married when she was 20 years old, she quit her job and stayed at home.

Ann still felt a lot of pain. She said it was hard to walk. Once she was going to go on the trip with a lady in the bus. But she had to cancel it, because she had been hurting so bad and she did not feel that she could ride on the bus.

Ann said she tried to keep active. She used to like to go to see movies which helped her stop thinking things that bothered her. But she said there were no good movies for older people, so she rarely watched movies. She started the water exercise this year and found it very helpful. The other leisure activities she was doing were crossword puzzle, sewing, singing in the choir.

Ann mentioned the family support from her husband and the grandchildren. She felt grateful that her husband went through all of these problems with her. The visits of her grandchildren also made her feel cheerful when she was in bad mood. Talking about the importance of family, Ann said, “I have to go on for my family, and they’re so good.”

Ann said she liked to be with people. She enjoyed the moments when all the family members got together for picnics and went for bowling. Sometimes she also was invited by her neighbors to visit their houses. She felt it was fun to be around other people, and it let her get into another mind set. She said she liked to laugh while with friends.

Candice

Candice, 70, was the only African-American participant in this study. She was a retired cook, widowed, and was living with her mother. She was taking care of her mother and two grandchildren at that time. She said taking care of the kids was a job for her, not leisure at all. She quit her job after the hand surgery.

Candice said she still had a lot of pain and felt stiff. She had to take medicine twice a day for arthritis. That was her main way to deal with RA. She said she had no other choices.

She was a cook at a restaurant before. She went to church, sang in the church, and made crafts. In the top of her refrigerator, there was a big bowl she made before. She said it was fun to make crafts. When she was asked if making crafts helped her manage the stress, she said, "yes, you have something to do to keep you away from the words all the time, and you always have a goal to look up to do, so I don't worry about my pain, what's going on and that kind of stuff. It is kind of like a therapy, you just work with you hands."

She once participated in a group therapy for depression. She said she liked to meet with other people because it made her forget about the pain. She did not want to be sitting at home and not doing anything, and just thinking about pain and stiffness. She said that they would talk about RA and laugh about it when she was with the other people with RA. She also talked a lot through the phone with friends.

Candice said that family meant everything to her. She enjoyed when every family members came to her house after church on Sunday and she would cook for them. And they talked, laughed, and prayed together.

Cindy

Cindy, 55, a retired social worker, started to have Lupus, a rheumatoid disease, about 30 years ago. She experienced a lot trouble with her hips, knees, and fatigue. At the beginning, no one could understand her because the doctors did not tell her what her problems was. Because of the constant fatigue, she had to adjust her working hours so that she could have time to take a rest when she was too tired to work. About five years ago, she had to quit her job because the disease was not allowing her to work outside. About one year ago she started to have very severe pain in her shoulders and elbows and wrists and fingers. She said she got to the point that she could not dress herself and could not peel potatoes and work in the kitchen.

Cindy used to play a lot of tennis. She played at junior high school. She felt that she was very good at it. After the disease got worse, she gave it up because she could not have the balance for tennis. Another thing that Cindy loved to do was fishing. She still was able to go fishing and she said she enjoyed it so much that she would forget the pain and everything when she was fishing.

Cindy said she liked to cook. She enjoyed cooking because she felt that it was a kind of accomplishment, especially after she prepared foods for the whole family to get together. Gardening was something she could still do and enjoy to do. She would work in the garden with her husband to plant vegetables and flowers.

She started to play computer games after she had RA. She said she could exercise her fingers while playing the computer games. She said that her hands would not let her do it at the beginning. She felt playing computer games helped her relax and improve her finger function.

Diane

Diane, 54, was an office manager of a health department. She started to have RA about 28 years ago. She felt that she was in excruciating pain at that time, and sometimes she even could not get up and move. Because of hands deformation, she could not lift things over 20 pounds, or open a jar, or open a can of soda, and or open a bottle.

Diane said she had a positive philosophy and attitude on RA. She believed that everyday we woke up with the choices to be happy or unhappy, and she chose to be happy. She said RA made her become a stronger person because she handle RA pain in a more positive way.

Diane used to play a lot of tennis. She said that it bothered her when she realized that she could not play tennis anymore. Then she picked up golf to substitute tennis.

Diane felt very glad that she could still fish after having RA. She would go fishing with her son most of the time. She considered fishing was a very important family leisure activity.

She said that she loved to socialize with people. Sometimes she engaged in leisure activities for the social interactions, not necessarily because she wanted to do the leisure activity. She said socializing with people was relaxing for her.

She said she also made jewelry, did crafts, and paint. She felt that these passive leisure activities helped her rest. She said that leisure activity for her was possibly the ability to keep on living life to its fullness.

Emma

Emma, 72, was a retired school teacher. She had about 20 years of RA history. At the worst time, she said she could not walk across the room. After she received joints replacement in both of her knees, she felt that most of the arthritis pain had gone. She still had hand deformation that limited some of her living activities.

Before she had RA, she almost did nothing in her leisure time. After she retired (not because of RA), she felt that she was doing more exercises than before. Her favorite leisure activity was reading. She also said that she enjoyed going to the different clubs she belonged to, going out with friends, and other social activities. After she had RA, she started to read more. Because she could not move too much when she was in pain, she played games in the computer sometimes. She said reading and playing computer games were restful for her.

She mentioned that leisure activities helped her release stress. Her philosophy about dealing with stress was:

> You get two choices: you can either make the best of it, or let it to you. So basically I just make the best of it: I have two very fine doctors that I trust, and I have wonderful children and great grandchildren, I mean, I get a lot of supports from home, too. I think that makes a lot of differences.

Jen

Jen, 64, was a retired school bus driver. She was diagnosed with RA when she was 12 years old. But at that time she still was able to play basketball and participated in gym. When she was about 40 years old, the disease got worse and she could not walk because of the impact of RA on her foot. Later, she had to quit her job because her hands did not function well, neither. After the foot surgery, she could walk a little bit. But one year ago, she had to use the wheelchair all the time. She could not cook and dress herself because the severe deformation in her hands.

Jen liked traveling a lot. She and her husband used to go to Florida almost every year. She said she liked to see different things and see people. She felt that traveling let her relax. But one year ago, she knew that she could not go to Florida and swim in the pool because she could not walk. She felt that the loss to travel to Florida bothered her a lot because that meant that RA took away something important for her. She gave up boating several years ago and she also had to give up riding bicycle about 15 years ago after she fell. She also participated in the swimming class at YMCA for couple years and finally she was out of that program because she could not keep her balance in the pool.

Jen said that sometimes she felt depressed because she used to be a very active person and then at a sudden, she had to give up so many things. But Jen was a very open and positive person. She told us a story of her friend who inspired her:

> We have one friend who died several years ago. She had arthritis so bad that her hands were all like this. She was young….I think she might have been going on 50 when she died. She was getting at that point years ago going down to the southern part of the state to get her what was called "gold shot" to try to release the pain. She could hardly walk. She was all bended over all the way. She had knee replacement….she had to have the knee joint replaced 3 times because it kept popping up beside of her leg. She managed to go on, and finished her college degree, and became a teacher, and she went to work like that until she died.

Katie

Katie, a retired art teacher, was the oldest participant (80 years old) in this study. The first time she experienced the joint pain was in her 40s. However it took almost 10 years to get it diagnosed as RA.

She then started to spend her leisure time on ceramics, which was her favorite art. She mentioned that working on ceramics helped her hands maintain normal. At that time, she was able to work with clay from six to seven hours a day. Another favorite leisure activity for Katie was yard work. She said she could spend four or five hours in the yard without realizing the time. She said that working in the yard was her main pleasure. She classified herself as "loner". She said she did not need a lot of people. She enjoyed watching TV and listening to radios. But it did not mean that she did not enjoy her social life. She visited her daughter in Christmas. She went to movies with friends every now and then and was with the water exercise group.

Speaking of the new leisure activities, Katie said she did not change too much. She did participate more in the water exercise and she felt stronger than before because of the water exercise.

Katie expressed that art was very meaningful for me. When her mother died, she felt very stressful. But Katie said, "The art makes my life much more pleasant for me, that I never run out of something, and that can keep my mind happy, even when bad things happen."

Kelly

Kelly, 54, was a retired administrator. She had osteoarthritis when she was in her teens. And then about 14 years ago, she started to have the symptoms of RA. Several years later, she felt that the pain went to her hips and she could not stand up. From then on, she began to use a wheelchair.

Kelly was very active before. She played many kinds of sports while she was in college. She voluntarily coached a softball team in a community after she graduated from the college and worked for the government. About seven years ago, her arthritis got gradually worse and worse and she had to give up playing softball, volleyball, and basketball. She also had to reduce time on walking and swimming. Kelly went swimming with some friends sometimes. Since they could not afford for swimming at YMCA, they went swimming at a pond in a park.

She described herself as a workaholic before. The loss of job due to depression from RA was hard for her. And then she moved to another town to take care of her parents. She had no friend there at the beginning and sometimes she just went to the woods to read by herself. She indicated that she had a mystical relationship with forest. She felt that going to the forest was a whole different experience, where she could just be quite and not doing anything. While in the real life, she felt that she was doing things all the time.

In the future, she would like to sing in a choir. She used to sing in the college. She would like to have a group of people to sing together. She was still looking for friendship in a new environment.

Laura

Laura, 57, was a retired office manager. She was first diagnosed with RA when she was 21 years old. At that time, because there were no better drugs for RA, she took aspirins, and sometimes she took 30 aspirins a day. But it was not helping at all. When she was 27 years old, she started to take a new drug for RA and she felt it was a miracle drug. She was able to do almost everything again. Then she became an office manager when she was in her mid-40s. Because of the increased stress from the job, she felt that her RA got worse. Later, the drug she was taking stopped working as well. Several years later, she quit the job because she felt that she could not handle it anymore.

Laura was able to walk by herself. Her knees were bothering her a lot because of the swelling. She was still in tremendous amount of pain. She said the main impact of RA for her was the pain. Because of the pain, she could not walk for a long distances, could not do a lot of physical things, and could not go to the movies.

She mentioned that walking, going to parks, picnicking, and playing volleyball were the leisure activities she participated in before she had RA. After having RA, she started to go swimming at YMCA. At the time when the drug worked well for her RA, she liked country dancing very much. She also liked to go to parties. She said she missed those social activities she used to enjoy but had to give them up due to RA.

Now the main leisure activities for her were swimming and watching TV. She felt that these leisure activities helped her release a lot of pain. She said she would not think about RA when she was in the water or watching TV. And she mentioned that she did not develop any new leisure activities after having RA.

Linda

Linda, 61, was a professor. She was single and never married. She kept active because she believed that physical exercises were very important for her to remain strong and be able to accomplish tremendous teaching and doing research tasks.

She used to play tennis with friends but gave it up because of frustrations of scheduling with partners. Then she decided to work out by herself. She engaged in weight lifting, deep water, and yoga classes until she had RA.

Three years ago, she seemed to get tendon injuries very easily. She thought it was just minor injuries and did not pay much attention to it. As she was trying to continue exercising, the things just got worst. She then went to see her doctor. Unfortunately, she was not diagnosed as having RA and was put into the wrong medications. She overwhelmingly suffered joints (mainly ankles and wrists) swell, joints stiffness, and joints pain. Two months later, she could scarcely move. She was referred to a rheumatologist, who immediately diagnosed her with RA. With the right drug treatments, she had been making very good progress and could live with no visualized disabilities while she still felt stiff and painful in her joints in a certain level. About half year later, she felt strong enough to go back some of her regular exercises and bicycle riding.

She had to give up yoga because some of the yoga movements required holding her weight with her hands. But her wrists would not allow her to do it any more. She then found tai chi as a substitute, which had the similar characteristics with yoga, such as breathing techniques, which she felt very effective for pain releasing.

Liz

Liz, 46, was a professor in a university. About four and a half years ago, she began to feel the pain in her shoulders, hips, knees, and ankles. Since then she had never been able to get rid of the pain and she felt her energy level was very low. She said the medical treatments and drugs did not work well for her.

Liz was very active before. She hiked, ran, bicycled, and swam. She did a miniature triathlon when she was 30. She also would ride horses, and did farm work with my husband. She used to do water-skiing, too. After she had the disease, she did not bicycle and water-ski. She still went hiking sometimes, but it had to be non-strenuous. She said she sometimes walked short distances, like maybe half a mile, and sometimes she swam. But the primary things she was doing now were flower gardening and vegetable gardening, reading, and needle point.

Liz said leisure was everything for her. She explained that work was good and fun for her, but it was not the expression of her soul and spirit, whereas leisure was. She said that she would never have the chance to learn different things if there was not such a change that happened in her life. She became more introspective and started to do more meditation, yoga, and read more spiritual books.

She said that leisure was very important for coping with the disease. She would do physical things, like yoga, and hot water belts to reduce the pain. She said if she did not have the time to read, or listen to books, or write, or draw, or drum, or do something expressive, then it was almost impossible to keep going. She felt that she had to express what was internal to live with her limitations.

Mary

Mary, 37, an Asian, was a staff working at a university. She started to feel the pain about seven years ago when she was working very hard for an advertising company. After she had her child, she could not walk too long because it was very painful.

Mary used to love sports very much. She was very active before. When she was in college, she was a cross-country runner, played soccer and basketball. She jogged five miles a day. She said she enjoyed doing those kinds of exercises because she felt good at them and she felt relaxed. When she was feeling bad, feeling low, and stressful, she always picked up physical activities to help release stress.

She said the disease changed her life dramatically. She lost a lot of friends with whom she used to play together. She felt frustrated when she had to give up all these activities.

Mary said she had a strong belief that the exercise would help her recover from the disease. She tried to stretch very hard and she tried yoga. But these did not help at all. The pain was still there. Later, she started doing Tai Chi. She found that Tai Chi helped her loose the joints, warm up her body, relax, and concentrate. She said that Tai Chi was not just an exercise but a way of living for her.

She said that she also enjoyed walking. She felt that walking was a good exercise. When she was walking, she felt relaxed and not worrying about anything. While walking, she felt she was closer to the nature because she could see the flowers and other tiny things very closely.

Sophia

Sophia, 77, was a retired school teacher, who was living in a senior center. She said she could not take care of her big house by herself due to RA and she decided to move into the senior center. She started to have RA about 10 years ago and she had the hand surgery two years ago.

She used to travel a lot. She traveled to Europe a couple of times. After she had RA, She went to Italy once. She used to do a lot of embroidery and played piano. But due to her hand deformation from RA, she had to give them up.

After RA, she said she started to do a lot of exercises, such as walking, aerobic exercise, and tai chi. She started reading more, and listening to more music. She said reading and listening to music helped keep her mind active, learn new things, and enjoy her life. After she sold the piano, she felt sad for a while. That was why she began listening to more CDs. She also learned that she needed to eat better and regularly since she had not had a regular schedule for meals after her mother died.

Sophia said she thought volunteer work could help people with RA. She used to do a lot of volunteer work. It was difficult for her to do now. But she said she missed that. She said she knew a lot of people with arthritis of any kinds who were doing a lot of volunteer work. She thought that was good because it got them out and it got them going. She said when she was doing the volunteer work, she felt that she was giving back to somebody else of what she had learned and what she had gained through her life, and helping somebody worse than she was.

Vicki

Vicki, 57, was a retired nurse. She started to have severe pain when she was 21 years old. After she had her first son, Vicki found that she was not able to hold him. She had a lot of swelling and was sore all over. She had to use crutches while walking. With the development of the disease, she had knee and hip replacements on both sides and ankle fusing.

Vicki liked to listen to music, cook, and sew before. She also read a lot and did some gardening. After she had RA, she still continued these activities. The new activity for Vicki was swimming at YMCA.

Vicki said that she had a lot of friends. She built up a lot of different networks through different leisure activities. She established her networks at the YMCA swimming class, her quilting group, her church group, her husband's colleagues, and parents of her son's friends. But she said that she did not have many friends who had RA and she usually did not want to share her RA with others. She felt that she would become very emotional if she talked about her problems. At the beginning, she was in denial. She said she just tried to ignore RA, instead of dealing with it.

There was a period of time when Vicki became depressed. She began to draw a lot and did not go out and seek friends. She read more. She said she did not express her emotions and thoughts to others at that time. Sometimes when she read, she felt guilty because she was not doing things.

She found that she could discover things about herself and about other people in her leisure activities. She said that she tried to see the bright things and accept what they were. Life was not all dark.

APPENDIX E

VITAE

May 2006

VITAE

Lei Guo

EDUCATIONAL BACKGROUND:

Ph. D. **Leisure Behavior** **2006**

- Department of Recreation and Park Administration
  School of Health, Physical Education, and Recreation
  Indiana University, Bloomington, IN
- Specialty: Recreational Sport Administration
- Minor: Curriculum Studies
- Dissertation topic:
  Stress and Leisure Coping for Women with Rheumatoid Arthritis

M. S. **Recreational Sport Administration** **2000**

- Indiana University, Bloomington, IN

B. S. **Sports Management** **1991**

- Beijing University of Physical Education

WORKING EXPERIENCE:

Research Management Assistant **1991-1998**

- Office of Science Research, Beijing University of Physical Education
- Management of research application, review, and evaluation

TEACHING EXPERIENCE:

Indiana University-Purdue University at Indianapolis **2004-2005**

- Teaching the Following Courses
  - Recreational Sport Programming
  - Sports Event Management
  - Microcomputer Application in Physical Education
  - Tai Chi

FELLOWSHIP/GRADUATE ASSISTANTSHIPS:

Future Faculty Teaching Fellowship **2004 - 2005**

- Indiana University

Graduate Assistantship **1998 - 2003**

- Research Assistant/Associate Instructor
  Indiana University

CONFERENCE PRESENTATIONS:

Guo, L., Yang, H. (2006). Tai Chi for people with disabilities. 2006 Midwest Symposium on Therapeutic Recreation and Adapted Physical Activities. Lake Geneva, WI.

Guo, L. & Yang, H. (2006). The role of therapeutic recreation in coping with stress for women with rheumatoid arthritis. 2006 Midwest Symposium on Therapeutic Recreation and Adapted Physical Activities. Lake Geneva, WI.

Guo, L. (2005). Rheumatoid arthritis and recreation. 2005 Recreational Therapy of Indiana Annual Conference. Terre Haute, Indiana.

Yang, H., & Guo, L. (2005). Graduate study in TR: Practical guidelines for pursuing master's and doctoral degrees. 2005 Illinois Recreation Therapy Association Annual Conference. Chicago, Illinois.

PUBLICATIONS:

Guo, L., & Lu, D. (1995). Tai Chi Exercise Gong. Beijing, China: Beijing University of Physical Education Press.