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Investigation of Anger-management Techniques for Essential Hypertension Patients

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Philadelphia College of Osteopathic Medicine
Department of Psychology

AN INVESTIGATION OF ANGER-MANAGEMENT TECHNIQUES
FOR ESSENTIAL HYPERTENSION PATIENTS: A CASE STUDY

By: Karyne B. Wilner

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Psychology

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DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Karyne Wilner on
the 24 day of May, 2004, in partial fulfillment of the requirements for
the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and
literary quality.

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Abstract

The hypotheses that when cognitive-behavior interventions for anger-management are introduced to an essential hypertension (EH) patient with clinically significant levels of anger in an eight-session therapy protocol, blood pressure (BP) measures will decrease, coping mechanisms will be enhanced, and behavior associated with anger will be transformed from the inhibition of it or the aggressive expression of it to a more rational and reasoned communications approach, demonstrated by scores falling between the 25th and 75th percentile on the State-Trait Anger Inventory-2 [STAXI-2](Spielberger, 1999) were supported in this case study. The research findings were that a male, EH patient improved his ability to express anger appropriately after receiving a protocol designed to treat "anger-in" and "anger-out," and that his BP measures decreased both during the protocol and in the poststudy period. The self-monitored mean blood pressure readings decreased from 121.58 systolic blood pressure (SBP) and 69.66 diastolic blood pressure (DBP) at baseline to a SBP of 109.78 and a DBP of 65.66 at poststudy. His total scale score on the STAXI-2 decreased from the 90th percentile at baseline to the 25th percentile at poststudy and his total scale score on the Multidimensional Anger Inventory (MAI) [Siegal, 1986] decreased from above the 85th percentile to below the 15th percentile.

The 14-week study involved a two-week baseline period, an eight-session anger-management protocol, and a four-week post-treatment period. Psychophysiological, standardized, subjective and qualitative assessments were employed. The standardized tests used in the study were: the STAXI-2

(Spielberger, 1999), the MAI (Siegel, 1986), the Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001), and the Social-Problem Solving Inventory-Revised [SPSI-R] (D'Zurilla, Nezu, & Maydeu-Olivares, 1996). Qualitative and subjective measures included the Anger Events Inventory, developed by the investigator, for self-monitoring and significant-other monitoring, and the Subjective Anxiety Scale (Wolpe, 1973). Blood pressure (BP) measures were taken three times a week during the length of the study by the subject using a digital BP machine (McGrady, Olson, & Kroon, 1995; National Institutes of Health, National Heart, Lung, and Blood Institute, 1997) and BP levels were measured by the physician's assistant at the end of each session.

The treatment protocol combined cognitive-behavioral techniques for anger-management: relaxation exercises, role-play and exposure techniques, assertiveness and communications skills, relapse prevention methods, homework, and reinforcement. The results indicated that cognitive-behavioral, anger-management techniques, when individually administered to an EH patient who attained high anger indexes, were associated with lowered BP, lowered arousal, decreased anger, and increased problem solving.

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Chapter 1

Introduction

Case Summary

This case summary involved the assessment and treatment of a patient diagnosed with a clinically significant level of anger and essential hypertension (EH). It demonstrated that cognitive-behavioral, anger-management interventions for a high anger (EH) patient are associated with a decrease in anger and blood pressure (BP) and an increase in coping skills. The investigator hypothesized that when cognitive-behavioral interventions for the expression or control of anger were introduced to an EH patient in an eight-session therapy protocol, blood pressure (BP) measures would decrease, coping mechanisms would be enhanced, and behavior associated with anger would be transformed from the inhibition of it or the aggressive expression of it to a more rational and reasoned communications approach, demonstrated by scores falling between the 25th and 75th percentile on the State-Trait Anger Inventory-2 [STAXI-2] (Spielberger, 1999).

Essential Hypertension

High blood pressure (BP) is a disease of the circulatory system. According to John C. Pierrakos (1987), student of Wilhelm Reich and founder of Core Energetics, and co-founder with Alexander Lowen of Bioenergetics, body psychotherapies, the circulatory system “controls not only the body’s involuntary functions, but is also involved in primal emotional activity” (p. 191). For example, anger and fear, at one time necessary for human survival, have been identified, alone or in combination, as contributing factors to heart disease (Christensen & Smith, 1993; Knapp, Levy, Giorgi, Black, Fox et al., 1992; Rein, Atkinson, & McCraty, 1995; Rosen, Brondolo, & Kostis, 1994; Siegel, 1991; Wolman, 1988). Due to societal and parental inhibitions that mandate against the expression of anger (Barefoot, 1991; Emmons, 1991), these feelings often remain in the body, in an out-of-awareness state, facilitating the release of hormones, such as cortisol and adrenaline, into the bloodstream that contribute to organic pathology (Beck, 1979; Cotton, 1990; Selye, 1978).

Hypertension, a silent disease that places individuals at significant risk for stroke, myocardial infarction (MI), and congestive heart failure (Rosen et al., 1994; Siegel, 1991), as well as impaired cognitive functioning (Elias, Robbins, Elias, & Streeten, 1998; Blumenthal, Madden, Pierce, Siegel, & Appelbaum, 1993) is fueled by a state of physiological arousal in response to the perception of danger (Pelletier, 1977, 1993; Selye, 1978). In 1984, cardiovascular disease, including coronary heart disease (CHD) and essential hypertension (EH) accounted for one out of every two deaths; 1,563,000 people died of heart disease

and 290,000 of cerebrovascular disease (Wolman, 1988). By 1997, statistics identified CHD as the leading cause of mortality for both men and women and stroke as the third leading cause of death (NIH, 1997; Martin, Gordon, & Lounsbury, 1998). The American Heart Association reported that “more than one in four Americans have some form of cardiovascular disease (CVD), the number one cause of death in the United States for every year, except one, since 1900” (Bellg, 1998, p. 54). In fact, since 1993, stroke rates have risen when adjusted for age; the decline in CHD has ceased; and rates for end-stage renal disease and heart failure, when both are preceded by hypertension, have risen (NIH).

Weiss, Anderson, and Weiss (1991) estimated 60 million Americans to be at increased risk from EH, calling it “the most important public health problem in the United States today” (p. 354). In 1997, an estimated 50 million people in the United States demonstrated elevated BP: a systolic blood pressure (SBP) of 140 mm Hg or greater and a diastolic blood pressure (DBP) of 90 mm Hg or greater (Blumenthal et al., 1993; NIH, 1997; Rosen et al., 1994). In addition, many Americans with hypertension were unaware that they had high blood pressure (NIH, p. 8) and those with hypertension did not adequately control it with medication (NIH, p. 34). In a review article, Rosen et al. cited research findings indicating that EH increases with age, is two times more common in African-Americans than in Caucasians, occurs among members of all socioeconomic classes, and tends to be diagnosed in women following menopause. Other findings were that the majority of CHD occurs in people whose BP is above the optimal level (120/80 mm Hg), but not so high as to be diagnosed as hypertension; that EH patients do not make the lifestyle changes or

take the medication necessary to control their disease; and that high BP is not a necessary consequence of aging (NIH, p. 19).

High BP is characterized by a persistent elevation of the pressure of the blood as it circulates through the arteries (Cooper, 1990; Stuart, Deckro, DeSilva, & Benson, 1992; Taber's Cyclopedic Medical Dictionary, 1993). It is usually recorded as SBP and DBP (McGrady et al., 1995). The SBP results from the heart contracting to push the blood into vessels that circulate it through the body. The DBP indicates the amount of pressure in the arteries when the heart relaxes between contractions, refilling the chambers with blood. Hypertension is defined as SBP of 140 mm Hg or greater and DBP of 90 mm Hg or greater, or taking antihypertensive medication (NIH, 1997). Hypertension is classified in terms of "optimal," SBP < 120 mm Hg and DBP < 80 mm Hg; "normal," SBP < 130 mm Hg and DBP < 85 mm Hg; "high-normal," SBP of 130-139 mm Hg and DBP of 85-89 mm Hg; and three hypertension stages: Stage 1, SBP of 140-159 and DBP of 90-99; Stage 2, SBP of 160-179 and DBP of 100-109; and Stage 3, SBP > 180 and DBP > 110 (NIH).

Patients are divided into three hypertension risk categories. Risk Group A patients do not have clinical cardiovascular disease, target organ damage, or other risk factors. Risk Group B patients are not suffering from clinical cardiovascular disease, target organ damage, or diabetes mellitus, however, they are smokers, older than 60, postmenopausal, diagnosed with dyslipidemia, and they have a family history of hypertension. Risk Group C includes patients who manifest clinical cardiovascular disease, target organ damage, and diabetes mellitus with or without the other risk factors listed above (NIH, 1997). *The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and*

Treatment of High Blood Pressure [JNC, VI], (NIH) provides the operational definition of hypertension used in this study. The Joint National commission combined stages 3 and 4 into one stage, stage 3, replacing the earlier definition of hypertension that involved four stages and characterized hypertension on a continuum from mild to very severe (McGrady et al., 1995).

An EH diagnosis is usually based on several BP readings that have been taken on different occasions. Generally the patient is sitting, but in special circumstances the person may be standing or lying down (McGrady et al. 1995, NIH, 1997). In most cases, the specific reason for the elevation remains unknown (Mann, 1999; Stuart et al., 1992). Although 55 percent of those diagnosed with EH control it with medication, 45 percent of those diagnosed do not use medication (Rosen et al., 1994). Some attempt to control EH with lifestyle changes, such as diet and exercise (McGrady et al., NIH), whereas others minimize its effects, utilizing defense mechanisms, such as denial and repression, that result in noncompliance (Rosen et al.). Many people with a SBP above 165 mm Hg remain undiagnosed (NIH; Nyklicek et al., 1997; Winkleby, Raglano, & Syme, 1988).

Anger

Although research indicates that anger and fear are associated with EH (Barefoot, 1991; Bellg, 1998; Christensen & Smith, 1993; Clay, 2001; Siegel, 1991; Suarez, Kuhn, Schanberg, Williams, & Zimmerman, 1998; Suinn, 2001), in general, they are normal, healthy emotions (Bilodeau, 1992). Anxiety, when it is not extreme, may be facilitative, allowing people to perform better during

speaking engagements or competitive events (Barlow, 1988; Cotton, 1990; Selye, 1978). Anger can serve adaptive functions as well, acting as a warning system in dangerous situations and motivating people to respond to personal attacks or threats to their security. Anger also challenges individuals and groups to make changes that will allow them to achieve their goals (Bilodeau; McKay, Rogers & McKay, 1989; Selye).

Anger results from an association between the limbic system, the sympathetic nervous system [SNS], the body, and consciousness (Beck, 1979; Pierrakos, 1987; Suinn, 2001; Tavris, 1989). When the limbic system, known as "the seat of emotion," receives information from the perceptual apparatus warning of a threat to the organism, signals are sent to the body in the form of biochemicals, telling it to respond to the threat (Kolb & Wishaw, 1996; McKay et al., 1989). These biochemical substances flow through the bloodstream to their receptor

inhibited, possibly resulting in somatization within the body in the form of disease processes (Beck, 1979, Emmons, 1991; Pennebaker, 1991; Pierrakos, 1987; Siegel, 1991; Spielberger, 1999; Wolman, 1988) or in dysfunctional and destructive behavior patterns and styles of living (Beck, 1999; Pierrakos). Early psychological research depicted aggressive, out of control, behavior as common among those diagnosed with EH who also were identified as Type A personalities (Friedman & Rosenman, 1974; Wolman). More recently, theorists have concluded that individuals who have difficulty identifying and sharing anger are more prone to this disease than those who express emotions openly (Emmons; Mann, 2000; Spielberger, 1999). Mann (1999) noticed that many patients diagnosed with severe or out-of-control EH were unable to identify or express anger. Spielberger (1999) refers to studies, including his own, with findings that individuals who suppress anger have higher systolic blood pressure (SBP) and diastolic blood pressure (DBP) readings than those who express their feelings. Similarly, Pierrakos (Personal Communication, December 11, 1998) reported observing, during 50 years of clinical practice, that “hypertensives hold in their feelings and block their energy.”

Definitions of Anger

“Anger” has many facets. Several of them, such as hostility, resentment, volatile behavior, destructiveness, negativistic thinking, aggression, and cynicism, have been associated with EH (Barefoot, 1991; Siegel, 1991). This case study operationally defines anger in terms of Barefoot’s theory of anger, which

describes anger as an overall hostile feeling. Barefoot identified hostility as the central category, dividing it into cognitive, affective, and behavioral subsets. The cognitive subset represents negative beliefs and judgments about others; the affective subset reflects the angry emotional state; and the behavioral subset is identified in terms of aggressive action or passive-aggressive inaction (Barefoot). The current study also relies on the work of Harburg, Bleiberman, Russell, and Cooper (1991) who distinguish reflective from impulsive anger. Reflective individuals develop a reasoned response to provocation whereas impulsive individuals react automatically to the provocation. An impulsive reaction can be either aggressive, that is lacking appropriate control mechanisms, such as yelling or hitting (Siegel, 1991; Spielberger, 1999) or lacking appropriate expressive mechanisms, characterized by hidden resentment, withdrawal, or passive-aggressive behavior (Pennebaker, 1991; Siegel, 1991). The STAXI-2 (Spielberger, 1999) supports this latter theory, dividing mechanisms for handling anger into four categories, two of which signify impulsivity, "anger-in" and "anger-out," and two of which signify an attempt to control the impulsive feelings, "anger-control-in" and "anger-control-out." In addition, repressed or inhibited anger and fear are operationally defined as muscular contractions in the body experienced as stress (Pierrakos, 1987; Selye, 1978) and avoided anger is operationally defined as anger that the subject is conscious of but chooses not to express (Spielberger, 1999).

For the purpose of measurement, Spielberger's revised method of anger assessment, the STAXI-2, that has been validated with EH and coronary patients (Spielberger, 1999) is utilized rather than the original instrument (Spielberger, Jacobs, Russell, & Crane, 1983). Spielberger (1999) defines anger as a more basic

concept than hostility or aggression, referring “to a psychobiological emotional state or condition that consists of feelings that vary in intensity from mild irritation or annoyance to intense fury and rage, accompanied by activation of neuroendocrine processes and arousal of the autonomic nervous system” (p. 19). Like Barefoot (1991), Spielberger differentiates anger from hostility, defining hostility as involving underlying viscous attitudes and vindictive behaviors. Because anger and hostility are often mixed together in cardiovascular disorders, the amount of anger that is experienced and how it is expressed, are important variables. Spielberger (1999) writes that in order “to investigate the role of anger in medical disorders, such as hypertension, the expression of anger must be distinguished, conceptually and operationally, from the experience of anger as an emotional state, as well as from individual differences in anger-proneness as an emotional state” (p. 20).

Cognitive-behavioral Approach

Because physiological arousal does not account for the relationship between anger and EH alone; therapists must help patients identify and consider the cognitions that occur, along with the emotional provoking situation (Beck, 1979, 1999; Bennett & Carroll, 1994; Ellis, 1977; Ellis & Tafrate, 1998; McKay et al., 1989). Cognitive-behavioral theories suggest that thoughts can trigger intense states of arousal (Beck; Ellis; Ellis & Tafrate; Goldfried & Sobocinski, 1975; McKay et al.). Types of thoughts that may lead to an angry reaction include: overestimating rejection, catastrophizing, overgeneralization, dichotomous thinking, and mindreading (Brondolo, DiGiuseppe, & Tafrate, 1997). In addition,

belief systems about unfairness, threats to one's welfare, and perceptions of betrayal tend to precede angry reactions (Ellis & Lange, 1996; McKay et al.). Inflexible and unchanging thoughts and attitudes are associated with a release into the bloodstream of hormones that are experienced as fear and anger (Malarkey, Kiecolt-Glaser, Pearl, & Glaser, 1994; Maier et al., 1994). If the bloodstream is heavily contaminated with these hormones, cardiovascular problems may develop (Melamed, Harari, & Green, 1993; Pierrakos, 1974). Therefore, methods known to transform thought processes and change belief systems should be utilized, along with relaxation exercises to decrease symptoms of arousal, establish better coping mechanisms, and, improve overall health (Beck, 1979; Bellg, 1998; Friedman et al., 1987; Oldenburg, Allan, & Fastier, 1989). These methods have been integrated into the 8-week protocol for anger-management (see Appendix A) that is employed in this case study.

Psycho-educational processes, based on a cognitive-behavioral model, are thought to help patients learn to manage anger, without resorting to criticism, aggression, sarcasm, or blame, by teaching them incompatible behaviors that aid them in situations that trigger negative emotional reactions (Beck, 1979; Ellis & Lange, 1996). In this study cognitive-behavioral, anger-management techniques, such as cognitive restructuring and exposure (Bellg, 1998; Brondolo et al., 1997), supplement relaxation techniques that failed to promote long-term results when used independently of other techniques (Jacob et al., 1992; NIH, 1997). These techniques are thought to help overly angry EH patients gain control and EH patients who inhibit their anger to express it (Bennett & Carroll, 1994). They help patients confront their desire to express anger in ways that are hurtful to others, through revenge, accusations, and judgments, before the body is affected,

causing irreversible harm in the form of internal disease processes (Bilodeau, 1992; Deary et al., 1994; Pierrakos, 1987; Rosen et al., 1994; Spicer & Chamberlain, 1996). The desire to repress, inhibit, or avoid anger is also addressed before it can result in illness, the disillusion of personal relationships, or both (Denollet, Sys, & Brutsaert, 1995; Emmons, 1991; Pennebaker, 1991; Rosal, Downing, Littman, & Ahern, 1994; Powell et al., 1993).

The therapy sessions with the EH patient, are based upon an eight-session, protocol (found in Appendix A) that emphasizes: a) the control of destructive venting; b) a reduction in the frequency and intensity of “fight or flight” responses to frustration or stress; c) a change in the beliefs, assumptions, thoughts, and attitudes that trigger the angry and hostile responses; d) identification of the invisible needs and feelings beneath the anger; e) appropriate expressive and assertiveness techniques; and f) various forms of skill training, relaxation exercises, exposure techniques, and problem-solving methods (McKay et al., 1989).

Conceptualization

This case study is based on the theoretical assumption, supported by the works of Barefoot (1991) and Spielberger (1999), that an association exists between BP and anger. In some individuals, depending upon genetic background, SNS sensitivity, and personality traits (Cotton, 1990; Gatchel, 1993), more intense and more frequent anger is expected to lead to higher SBP and/or DBP levels and less intense and less frequent anger is expected to lead to lower SBP and/or DBP levels.

Research studies have associated EH with inhibited anger [“anger-in”] and the impulsive and explosive expression of it [“anger-out”] (Julkunen, Idanpaan-Heikkila, & Saarinen, 1993; Mann, 1999; Siegel, 1986; Spielberger, 1999; Suls, Wan, & Costa, 1995; Wolman 1988). In the early 1970s, Friedman and Rosenman’s (1974) ground breaking research with 3,500 corporate men found that two to five times more cardiovascular disturbances occurred in those identified as aggressive and hostile (Type A) in comparison with those identified as more relaxed and less competitive (Type B). Other studies from the 1970s suggest that individuals who have difficulty identifying and sharing feelings are more prone to circulatory illnesses than those who can express their emotions (Rosen et al., 1994; Spielberger). Although the theories differ concerning whether repressed anger or expressed, out-of control anger is more insidious and contributory to cardiovascular disease, both promote the idea that EH patients need to develop coping skills for anger if their health is to be enhanced or maintained (Beck 1979; Bellg, 1998; Bennett & Carroll, 1994; Clay, 2001, Mann, 1999; Pierrakos, 1987; Suinn, 2001). For example, for “anger-in” behaviors, coping with anger through expression may be beneficial by lowering the overall level of arousal in response to anger situations. For “anger-out” behaviors, coping skills that emphasize control may preclude the elicitation of anger responses and keep the level of arousal within manageable limits. Therefore, if EH patients with high “anger-in” and “anger-out” attain adequate coping skills, reduced levels of BP may occur, because high BP is often associated with high levels of arousal (NIH, 1997; Suinn, 2001; Wolman, 1988). For the purposes of this study, coping skills were defined as tools for solving problems in living (Nezu, Nezu, Friedman, Faddis, & Houts, 1998).

The therapeutic process that would best help high anger EH patients improve their anger management skills had not been explored prior to this study, clinically or systematically, except through behavioral measures, such as Jacobson's relaxation, that provided mixed results (Bennett & Carroll; Friedman & Rosenman; Jacob et al., 1992; Mann, 2000; NIH, 1997; Russek & Schwartz, 1996). The purpose of the current case study was to demonstrate that therapeutic interventions, for a high anger EH patient, that included cognitive-behavioral techniques for anger-management, involving education, homework, skills training, exposure, reinforcement, and relaxation, would decrease anger, increase coping, and decrease BP. This case study was able to demonstrate that, when these techniques were incorporated into the protocol, "anger-in" was expressed appropriately and "anger-out" responses were controlled.

Assessment

The standardized, self-report measures used to identify an EH patient with an anger-management problem, to establish baseline, and to assess change during and following the protocol included: the State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999), the Multidimensional Anger Inventory [MAI] (Siegel, 1986), the Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001), and the Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996). These standardized measurements were utilized prior to the case study, at midstudy, at the end of the study, and at the one-month follow-up period.

Anger scores on the STAXI-2 falling within normal limits, between the 25th and 75th percentile, or within limits indicative of anger problems that interfere with optimal functioning, above the 75th percentile (Spielberger, 1999), indicated change or failure to change. It was expected that the lowest BP levels would occur at scores closer to the 50th percentile or below it on the STAXI-2. Higher scores, those closer to the 75th percentile, were more likely to be evident in people who had difficulty experiencing anger, suppressing it, expressing it, or controlling it. Higher BP levels were expected if the subject scored close to the 75th percentile or above it. Other dimensions of the subject's anger were analyzed using the MAI (Siegel, 1986) and the MADAS (Mahan, 2001). In addition, the SPSI looked at coping skills and problem solving (D'Zurilla, Nezu, & Maydeu-Olivares, 1996).

An Anger Events Inventory for the subject (Appendix B) and an Anger Events Inventory – Partner Form (Appendix C), qualitative instruments developed by the author, identified the number, intensity, duration, and behavioral characteristics of the subject's anger. It was expected that the self-reports and the significant other reports, although descriptive in nature, would show that the number of irrational, violent and impulsive angry acts and outbursts lessened and that the number of unexpressed or withheld angry feelings decreased during and following the anger-management training. The Subjective Anxiety Scale, [SUDS] (Wolpe, 1973) was used to indicate the amount of discomfort experienced by the subject following each therapy session. Psychophysiological measures, self-monitoring and medical clinic monitoring, were used to determine a decrease in BP.

Purpose

The results from this case study were expected to provide impetus for further study of cognitive-behavior methodologies in a behavioral health context. An empirical investigation concerning which interventions and techniques work better with “anger-in” and which work better with “anger-out” EH patients could follow from this case study. Whether some techniques have more effect on decreasing BP than others could also be explored. This case study’s major contribution was information concerning the clinical treatment of a high anger patient diagnosed with EH. These results should assist the development of treatment protocols for use with EH and CHD patients (Deary, Fowkes, Donnan, & Housley, 1994; Denollet et al., 1995; Friedman & Rosenman, 1974; Lahad, Heckbert, Koepsell, Psaty, & Patrick, 1997; Wolman, 1988).

Summary

This case study hypothesized that a EH patient with a clinically significant level of anger would improve his ability to cope with anger after an 8-week cognitive-behavioral, anger-management protocol. In association with the eight-sessions, a decrease in BP was expected to occur. The investigator hypothesized that BP would lower when anger scores on the STAXI-2 fell below the 75th percentile, the percentile that separated those in the normative sample with “normal” anger levels from those with “problem” anger levels, and in some cases even lower (Spielberger, 1999, p. 13). It was also expected that qualitative,

self-reports (Appendix B) and significant-other reports (Appendix C) concerning anger, would show that the number of irrational, aggressive, and impulsive angry acts and outbursts, as defined by Beck's list of cognitive distortions and strategies (Beck, 1999) would lessen and that the number of unexpressed or withheld angry feelings would decrease. The results indicated that BP decreased, anger decreased, and coping skills increased in association with an 8-week anger-management protocol that was based upon cognitive-behavioral strategies.

Chapter 2

Method

It was hypothesized that when cognitive-behavioral interventions for the expression or control of anger were introduced to an essential hypertension (EH) patient with clinically significant levels of anger in an eight-session therapy protocol, blood pressure (BP) measures would decrease, coping mechanisms would be enhanced, and the behavior associated with anger would be transformed from the inhibition of it or the aggressive expression of it to a more rational and reasoned approach, demonstrated by scores falling between the 25th and 75th percentile on the State-Trait Anger Inventory-2 [STAXI-2](Spielberger, 1999). This chapter provides information about: 1) the methods and instruments used to assess these changes, 2) the pre-intervention clinical interview, 3) the instructions for self-monitoring, 4) the subject's medical history, and 4) the validation of the study. Four different types of measures were used to evaluate changes in BP, anger level, and problem solving skills. These were psychophysiological, standardized, subjective and qualitative.

Psychophysiological Measures

The psychophysiological assessment used in this study involved BP measurement: self-monitoring and medical clinic monitoring (NIH, 1997). Readings were taken according to rules established by *The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure* (NIH, 1997, p. 12). Readings were taken in a sitting position, with feet flat on the floor, and the arm supported at heart level (NIH). Prior to the measurement, the subject rested for five minutes and refrained from smoking or ingesting caffeine for a period of 30 minutes (NIH).

The physician's assistant measured the subject's BP at baseline, following each session of the protocol, and once during the one month follow-up period (Table 1). Every effort was made to use the same physician's assistant so that her influence would be distributed evenly across the results. The results were compared with the self-monitored BP averages for each of the four phases of the study in order to identify "white coat" contamination and check for reliability (Table 2).

The participant took his BP three days a week, after a baseline period of one week when the measures were taken daily (Table 3). Appendix D provides the directions for BP recording that the subject received and a sample recording form. From the daily BP measures, the investigator tallied weekly averages that are reported in Table 4. The subject used a digital BP machine (a validated electronic device) recommended by Harry Morris, DO, MPH (personal communication, May 15, 2002) from the first week of baseline through the follow-up period, a total of 14 weeks. He took two measurements, two minutes

apart, at the same time each evening (McGrady et al., 1995; NIH). The same room in the house and the same chair were used for each measurement, because BP is susceptible to postural changes. The appropriate cuff size was provided so that the bladder wrapped around 80 percent of the subject's arm to ensure accurate measurement (McGrady et al.). The record sheets were turned in weekly to the investigator who averaged the two measurements in order to determine a daily BP (Table 3).

To decrease error due to self-reporting, instruction in BP self-monitoring was provided (DiTomasso & Colameco, 1982; Meichenbaum, 1994). Emphasis was placed on helping the subject identify the specific behaviors required for BP reporting (NIH, 1997, p. 12). Positive reinforcement was given at the start of each session for collection of the data (DiTomasso & Colameco, 1982). Suggestions to match the format for self-monitoring to the subject's abilities, to encourage the subject to record the data immediately, and to review reasons for nonadherence with the subject before the data collection began were also initiated (Meichenbaum, 1994).

Self-monitoring of BP provided several advantages including: gathering data, decreasing "white-coat" hypertension, assessing response to BP medication, assessing response to the treatment protocol, and improving treatment adherence (NIH, 1997, p. 12). In addition, the subject received immediate information about his physical state, took an active role in his treatment, attained knowledge about behaviors that may have preceded his physical state, and provided his physician with feedback to help determine treatment efficacy (DiTomasso & Colameco, 1982).

Table 1

*Blood Pressure Readings Taken By the Physician's
Assistant From Pretreatment to Poststudy*

WEEKLY AVERAGES

Week	Protocol	Date	SBP/DBP
1	Baseline	3/13/03	120/70
2	Baseline	4/22/03	142/82
3	Study	6/10/03	112/68
4	Study	6/20/03	131/80
5	Study	6/26/03	118/70
6	Study	7/1/03	110/70
7	Study	7/8/03	122/72
8	Study	7/15/03	112/78
9	Study	7/21/03	112/74
10	Study	7/25/03	122/76
11	Poststudy	-	-
12	Poststudy	8/15/03	120/84
13	Poststudy	-	-
14	Poststudy	-	-

Note: Dashes indicate that blood pressure measurements were not taken.

Table 2

Physician's Assistant and Self-Monitored Blood Pressure Averages for the Four Phases of the Study

<u>Phase</u>	<u>Protocol</u>	<u>Date</u>	<u>Medical-BP</u>	<u>Self-Monitor BP</u>
Phase 1	Baseline	3/13-4/22,6/3-6/9	131/76	121.58/69.66
Phase 2	1ST Half St	6/10-7/7	117.5/75	116.58/67.16
Phase 3	2ND Half St	7/8-8/3	117/75	114.08/63.33
Phase 4	Poststudy	8/4-9/4	120/84	109.78/65.66

Table 3

*Self-Monitored Blood Pressure Readings From Pretreatment
to Poststudy*

<u>Phase</u>	<u>Week</u>	<u>Date</u>	<u>SBP/DBP Reading</u>
Baseline	2	6/4/03	121/68.5
Baseline	2	6/5/03	125.5/71
Baseline	2	6/6/03	111/67.5
Baseline	2	6/7/03	111.5/69.5
Baseline	2	6/8/03	144/78
Baseline	2	6/9/03	116.5/63.5
Study	3	6/15/03	116/70
Study	3	6/16/03	115.5/62.5
Study	3	6/17/03	118.5/68.5
Study	4	6/22/04	128/69
Study	4	6/23/04	115.5/69.5
Study	4	6/24/03	114/58
Study	5	6/27/03	114.5/61.5
Study	5	6/28/03	120/67
Study	5	6/30/03	116.5/69
Study	6	7/4/03	111/69
Study	6	7/6/03	118/75
Study	6	7/7/03	111.5/67
Study	7	7/10/03	118/72.5

Study	7	7/13/03	127/71
Study	7	7/14/03	126.6/73.5
Study	8	7/18/03	117/71.5
Study	8	7/19/03	110/68
Study	8	7/20/03	115.5/73.5
Study	9	7/22/03	110/65
Study	9	7/23/03	116/66
Study	9	7/24/03	110/67.5
Study	10	7/27/03	102.5/60.5
Study	10	7/28/03	112/66.5
Study	10	7/29/03	103/60.5
Poststudy	11	8/4/03	104.5/61
Poststudy	11	8/5/03	119.5/72
Poststudy	11	8/6/03	102.5/62.5
Poststudy	12	8/11/03	118.5/68.5
Poststudy	12	8/12/03	110/66.5
Poststudy	12	8/13/03	105/65.5
Poststudy	13	8/18/03	101/58
Poststudy	13	8/19/03	110/72.5
Poststudy	13	8/21/03	111/65.5
Poststudy	14	8/26/03	112.5/63.5
Poststudy	14	8/27/03	111.5/64
Poststudy	14	8/28/03	111.5/68.5

Table 4

*Self-Monitored Blood Pressure Weekly Averages From
Pretreatment to Poststudy*

<u>Phase</u>	<u>Week</u>	<u>BP Weekly Average</u>
Baseline	2	121.58/69.66
1st Half Study	3	116.66/67
1st Half Study	4	119.16/65.50
1st Half Study	5	117/65.83
1st Half Study	6	113.50/70.33
2nd Half Study	7	123.83/72.33
2nd Half Study	8	114.16/71
2nd Half Study	9	112/66.16
2nd Half Study	10	105.83/62.50
Poststudy	11	108.83/65.16
Poststudy	12	111.16/66.83
Poststudy	13	107.33/65.33
Poststudy	14	111.83/65.33

Standardized Instruments

The standardized instruments used in this study to measure anger and coping skills included the State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999), the Multidimensional Anger Inventory [MAI] (Siegel, 1986), the Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001), and the Social-Problem Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996). They were utilized at baseline (5/27/03), midstudy (7/1/03), termination (7/25/03), and one-month follow-up (9/4/03).

The STAXI-2 assessed the subject's ability to handle anger within normal "anger-in" and normal "anger-out" limits (Spielberger, 1999). The MAI measured cognitive, behavioral, and affective dimensions of the subject's anger (Siegel, 1986). The MAD-AS looked at multidimensions of the subject's anger (Mahan, 2001) and the SPSI-R assessed his ability to problem solve and cope with life problems (D'Zurilla et al., 1996). These standardized, self-report instruments were designed for easy administration. They were administered and interpreted by the investigator, a doctoral candidate experienced with testing, who met with each of the potential subjects individually during the pre-intervention period and with the selected subject during the study and poststudy period.

The State Trait Anger Inventory-2 [STAXI-2] (Spielberger, 1999). The STAXI-2, a self-report inventory, developed by Spielberger (1999) has 57 items, eight scales, five subscales, and an overall anger expression index. Individuals rate themselves on a four-point scale that assesses intensity and frequency of certain behaviors. The test requires 15 minutes. The scales and subscales

include: State Anger (S-Ang), Feeling Angry (S-Ang/F), Feel Like Expressing Anger Verbally (S-Ang/V), Feel Like Expressing Anger Physically (S-Ang/P), Trait Anger (T-Ang), Angry Temperament (T-Ang/T), Angry Reaction (T-Ang/R), Anger Expression-Out (AX-O), Anger Expression-In (AX-I), Anger Control-Out (AC-O), and Anger Control-In (AC-I). Subjects fill out the questionnaire according to how they normally behave at home. "Anger-in" refers to angry feelings that are experienced but not expressed (suppressors). Typical responses would be "I withdraw from people" and "I tend to harbor grudges, but I don't tell anyone." "Anger-out" refers to aggressive physical or verbal behavior (expressors) and typical responses include: "I say nasty things" and "I strike out at whatever infuriates me" (Spielberger). "Anger control" looks at control of anger so that it is not expressed outwardly toward others; people hold back outward expressions of anger or control it through attempts to calm down or relax (Spielberger). Internal consistency for males and females was high across all scales and subscales (.84 or higher, median $r = .88$), except for the trait anger-reaction subscale that had an internal consistency of .76 and .73 for normal males and females (Spielberger).

The STAXI-2 has face, construct, concurrent, and discriminate validity and has been used with patients referred for coronary angiography, with those identified as cardiovascular reactive, with CHD patients, with high school students in a study of BP and anger expression, with borderline hypertensives, and with women with elevated BP (Spielberger, 1999). It has been compared with other anger instruments, such as the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957) and the Hostility and Overt Hostility scales of the Minnesota Multiphasic Personality Inventory (Cook & Medley, 1954; Hathaway &

McKinley, 1967). It was selected for use in this study, over the Buss-Durkee Hostility Inventory and the Hostility and Overt Hostility scales of the Minnesota Multiphasic Personality Inventory, because its operational definition of anger was in alignment with the investigator's purpose and it was normalized on groups of patients suffering from CHD.

The STAXI-2 was normed on 1,644 normal adults and 276 psychiatric patients. The psychiatric patients had substantially higher scores than normal adults on the "anger-in" scale and the overall anger index and significantly lower scores than normal adults on the "anger-control-out" scale and the "anger-control-in" scale, suggesting that they tend to inhibit their anger more frequently, but have less control over the outward expression of it than most adults (Spielberger). In reference to gender differences, males had higher "anger-out" scores and overall anger indexes and lower "anger-control-in" scores than females. In general, "anger-out," "anger-in," and overall anger scores decreased with age.

The Multidimensional Anger Inventory [MAI], (Janda, 2001; Siegel, 1986). The MAI (Siegel, 1986), a self-report inventory, was designed to assess the dimensions of anger relevant to cardiac disease. Anger was operationally defined in terms of hypertensive reactions to "triggering" circumstances. Siegel (1991) hypothesized that "hypertensives became more angry more often than their normotensive counterparts because of a greater sensitivity to anger stimuli" (p. 52). Therefore dimensions assessed included frequency, duration, magnitude of anger, mode of expression ("anger-in" and "anger-out"), hostile outlook, and range of anger eliciting situations.

The MAI is a 38-item test that takes about 10 to 15 minutes to complete. The author selected the items on the basis of face validity. Some items came from existing anger inventories and others were written specifically for the MAI. Factor analysis showed that anger arousal includes frequency, duration, and intensity as subsets, with hostile attitude, and range of anger eliciting situations as separate factors. Anger expression broke down into "anger-in" and "anger-out." Moderate test/retest reliability at .75, during a three-to four-week period, and high internal consistency at .89 was demonstrated. Adequate validity was reported by correlating MAI results with those of other inventories measuring the same and different constructs (Siegel, 1986).

The Mahan and DiTomasso Anger Scale [MAD-AS], (Mahan, 2001). The Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001) emphasizes the multidimensionality of anger, measuring the physical, cognitive, and behavioral components of anger. It assesses anger in terms of its frequency, severity, expression, and impact upon the individual. It is capable of profiling a person's anger and identifying individuals most capable of acting in a problematic manner (Mahan).

The MAD-AS contains seven homogeneous subscales, six stable subscales and one, subscale 7, that is not stable over time (Mahan, 2001). The seven subscales resulted from a factor analysis that identified seven factors (Mahan). These are: "Anger Dyscontrol" (people who act out when angry); "Angry Cognitions" (people who spend more time thinking about the anger situation than acting on it); "Verbal Expression of Anger" (people who are vocal about their anger); "Physiological Arousal" (people who have physiological symptoms

when they are angry); "Anger Justification/Blame" (people who argue with others or blame others); "Externalization of Anger" (people who hold others responsible for their anger and who want to hurt them in return); and "Difficulty with Anger Resolution" (people who do not tolerate others' mistakes, who are bitter, and hold on to anger for a protracted time period). Each of these subscales represents a different way in which anger manifests. In this study, the total scale score, rather than the individual subscale scores, was utilized.

The MAD-AS's validity was established by comparing mental health inpatients (subjects diagnosed with a variety of psychiatric disorders) with an outpatient group (subjects referred by a licensed psychologist) and a control group (students pursuing master's degrees at a Philadelphia medical school and nurses in a rural hospital in central Pennsylvania) (Mahan, 2001). It was hypothesized that the inpatient group would be angrier. These findings were substantiated and provided validity for the MAD-AS. In addition, the seven subscales showed that inpatients scored higher than outpatients and that outpatients, in most instances, scored higher than the control group.

A factor analysis demonstrated construct validity extracting seven factors that accounted for 62.3 percent of the variance (Mahan, 2001). Also in support of construct validity, the MAD-AS total score correlated with the total score of the State-Trait Anger Expression Inventory and the total score of the Beck Anxiety Inventory (Mahan). Criterion validity, encompassing both concurrent and predictive validity, was established by hypothesizing that mental health inpatients with personality disorders would be angrier than mental health inpatients without personality disorders (Mahan). The data indicated that this was the case; statistically significant results found that inpatients who exhibited

Cluster B, personality traits were angrier than inpatients without personality disorders. In addition, inpatients with personality disorders scored higher on each of the seven anger components than inpatients without personality disorders (Mahan).

In reference to reliability, internal consistency was established using Cronbach's coefficient alpha. The total score of the MAD-AS equaled .96 and the subscale values were: Scale 1 (.93), Scale 2 (.83), Scale 3 (.82), Scale 4 (.86), Scale 5 (.70), Scale 6 (.73), and Scale 7 (.69) (Mahan, 2001). Test/retest reliability for the total scale was .82 and for each of the subscales test/retest reliability was: Scale 1 (.65), Scale 2 (.68), Scale 3 (.72), Scale 4 (.65), Scale 5 (.63), Scale 6 (.66), and Scale 7 (.09) (Mahan). The limitations of the MAD-AS are that it does not reflect a normal population (Mahan) and that it has not been normed on a cardiovascular or hypertensive population. Therefore, the results cannot be generalized to the hypertensive patient used in this study. Due to this limitation, the MADAS is used to support the findings of the MAI (Siegal, 1986) and the STAXI-2 (Spielberger, 1999).

Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996).

The Social-Problem Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996) is based on the theory that those who solve problems effectively experience less psychological distress and cope with problems in living more efficiently than those who are less skilled in problem-solving. This 52-item self-report inventory was derived from the original theory driven 70-item Social Problem-Solving Inventory [SPSI] that was composed of two scales, the "Problem Orientation Scale" and the "Problem-Solving Skills Scale." The "Problem Orientation Scale"

was divided into three subscales: "the Cognition Subscale," "the Emotion Subscale," and "the Behavior Subscale." The Problem-Solving Skills Scale" was divided into four subscales: "the Problem Definition and Formulation Subscale," "the "Generation of Alternative Solutions Subscale," "the Decision-Making Subscale," and "the Solution Verification and Implementation Subscale." Each subscale contained ten items (D'Zurilla et al.). The goal was to assess "problem orientation," a person's thoughts about his or her own ability to solve problems, and "problem-solving proper," the strategies and techniques used to solve problems. Although the SPSI had positive test-retest reliability coefficients and criterion validity for college students, a middle-aged group, elderly community residents, a high-stressed group, depressed older adults, and suicidal adult psychiatric patients, a factor analysis did not support the two-scale, seven-subscale, model. Therefore a new model was devised based upon the five factors that were empirically derived.

Results of the factor analysis confirmed that: 1) positive problem orientation and negative problem orientation were two different although related constructs; 2) the cognitive and emotional subcomponents were not separate constructs; 3) avoidance behavior was a separate factor; 4) the four problem-solving skills were indistinguishable from each other and needed to be grouped under one label; and 5) items designed to assess deficits in problem-solving formed a separate factor characterized by impulsivity and carelessness. Therefore, the SPSI-R was designed upon the basis of this data (D'Zurilla et al., 2002).

The SPSI-R consists of 52 items and five scales: "Positive Problem Orientation" (PPO: 5 items), "Negative Problem Orientation" (NPO: 10 items), "Rational Problem Solving" (RPS: 20 items), "Impulsivity/Carelessness Scale"

(ICS: 10 items), and "Avoidance Style" (AS: 7 items) (D'Zurilla et al., 1996). The "Positive Problem-Orientation Scale" reflects a person's ability to see a problem as a challenge, believe that he or she can solve it, and resolves to do it within a reasonable amount of time. The "Negative Problem-Orientation Scale" depicts a person who perceives problems as threats, doubts his or her own ability to solve them, and is frustrated by having problems in his or her life. The "Rational Problem-Solving Scale" measures the application of effective problem-solving principles and methods, such as gathering facts and identifying obstacles. The "Impulsivity/Carelessness Style Scale" identifies people who consider few solutions, often acting upon their initial thought or idea. The "Avoidance Style Scale" identifies people who prefer to avoid problems rather than confront them, putting them off or hoping they will disappear miraculously. The scale's 52 items are scored by transferring the subject's answer (0 to 4) to an answer sheet that is divided according to the five subscales. The scores per item within each scale are added to derive the scale score. A total Social Problem-Solving Score is derived when the scale scores are entered into the formula:

$$\text{SPS} = \text{PPO}/5 + \text{RPS}/20 + (40 - \text{NPO})/10 + (40 - \text{ICS})/10 + (28 - \text{AS})/7.$$

Research using a sample of college students and a sample of psychiatric inpatients shows that the SPSI-R subscales are stable across different populations varying in age and psychiatric history (D'Zurilla et al., 1996). In both samples, a positive view of problems was associated with a rational problem-solving approach and a negative view of problems with either an avoidant or impulsive/careless approach to problems. The research showed that it is possible for a negative view of problems to be associated with a rational problem-solving approach. The SPSI-R was normed on samples of high school students, college

students, middle-aged community residents, elderly community residents, adult Alzheimer caregivers, nursing students, adult psychiatric inpatients, adolescent psychiatric patients, cancer patients in need of psychological treatment, and adult depressed outpatients (D'Zurilla et al.). The four psychiatric samples displayed lower problem-solving scores than the other groups on all scales except the Impulsive/Carelessness Scale and the Avoidance Scale (D'Zurilla et al.). In reference to reliability, two independent samples of college students, one sample of middle-aged adults, and one sample of elderly adults showed adequate to high internal consistency on all five scales of the SPSI-R, ranging from a low of .68 to a high of .95. Test-retest reliability for one sample of college students and the sample of nursing students also ranged between .61 and .91, suggesting relatively stable scores over time (D'Zurilla et al.).

Confirmatory factor analyses as well as additional indices, such as the "Root Mean Squared Error of Approximation," confirmed that the five factor model fits the data provided by SPSI-R (D'Zurilla et al., 1996). Concurrent validity was established through a reanalysis of data from the SPSI, comparing the data that had been revised to provide SPSI-R scores with data from the Problem-Solving Scale (PSI). When the scales from both tests were compared, all the correlations were significant, ranging from moderate to moderately high, indicating that both tests were measuring the same constructs, but with enough variation so as not to be exact duplicates of each other (D'Zurilla et al.). Predictive validity was established by comparing the SPSI-R with other tests designed to measure psychological stress such as the "Perceived Stress Scale" and the "Symptom Checklist 90-Revised." All of the SPSI-R scales, except the "Rational

Problem-Solving Scale," significantly correlated with the distress measures, and the "Negative Problem-Orientation Scale" correlated the most highly with the other distress measures (D'Zurilla et al.). The SPSI-R was also compared with measures of positive psychological well-being, such as the "Rosenberg Self-Esteem Scale" and the "Satisfaction with Life Scale." The results showed a significant association between problem-solving skills and psychological well-being. The "Rational Problem-Solving Scale" showed the strongest relationship and the "Negative Problem Orientation Scale" showed the least strong relationship (D'Zurilla et al.). To establish convergent and divergent validity, the SPSI-R was compared with tests presumed to measure the same constructs, such as optimism and locus of control, and with tests presumed to measure different concepts, such as intelligence and aptitude. Results were significant in reference to both convergent and divergent validity (D'Zurilla et al.).

Subjective Assessment

The subjective instrument used in this study, The Degree Of Subjective Anxiety Scale [SUDS] (Wolpe, 1973), was given at the end of each session in order to identify the degree of anxiety or discomfort the participant experienced during each of the eight therapy sessions. This instrument was used to determine if the therapy could be associated with a rise in BP, rather than the expected decrease in BP. Previous findings that EH and cardiac patients are not comfortable sharing feelings or receiving support (Davison, Pennebaker, &

Dickerson, 2000; Mann, 2000), normal clinical goals suggested that anxiety could be triggered in therapy sessions rather than relaxation. If BP were to increase, rather than decrease, during the therapy protocol, an assessment of the possible effect of the therapy on that increase was important. The SUDS was given to the subject immediately following each session, taking less than a minute to complete.

When the scale was introduced, the subject was told to think of the most intense anxiety he ever experienced or could imagine and assign it the number 100. He was also told to think of a state of absolute calm and assign it the number zero. The subject was then asked to rate himself at this moment (the end of the therapy session) on the scale. According to Wolpe (1973) most subjects give a figure without hesitation and one that was more meaningful than if the subject were asked to describe his experience in adjectives. Therefore, the subject was asked to provide a number that characterized his first intuitive response (Wolpe).

Qualitative Assessment

The qualitative instrument used in this study was the Anger Events Inventory, developed by the author, for both self-monitoring (Appendix B) and significant-other observations (Appendix C). It was designed to elicit qualitative, descriptive responses concerning the number and kind of irrational, violent, or impulsive angry acts; the number and kind of unexpressed or withheld angry experiences; and the intensity and duration of each. Although self-report questionnaires, such as this one, are subject to bias (Knelp et al., 1993; Snyder, Crowson, Houston, Kurl, & Poirer, 1997), particularly in EH patients who are

known to inhibit feelings (Davison et al., 2000; Mann, 1999), this was not the primary assessment tool utilized in the study. Results from the standardized, validated instruments were given more credence.

Item construction for the Anger Events Inventory was based upon face validity. The instrument had not been tested for other forms of validity or for reliability; therefore, the resulting data was utilized solely on a descriptive basis. Areas emphasized were: 1) frequency (how often the subject experienced an anger episode); 2) ease (how easy or difficult it was for the subject to become angry [8 point scale]); 3) intensity (how angry the subject became -- mild to extreme [8 point scale]); 4) duration (the length of time the subject remained angry); 5) anger-eliciting situations (what incidents, statements by others, or triggers preceded the anger [open-ended question]); 6) cognitions (thoughts preceding the angry reaction [open-ended question]); and 7) anger/in or anger/out (anger/in: conscious or unconscious; anger/out: expressed using verbal or physical aggression).

The significant other was operationally defined as a spouse, adult child, relative, good friend, or housekeeper (Knelp, Delamater, Ismond, Milford, & Salvia et al., 1993) who saw the subject daily and communicated with him often. In this study, the significant other, the wife, lived at home with the subject. Her results were compared with those provided by the subject for collateral data (Tables 5, 6 and 7). If the subject's description of his own behavior was colored by denial, the spouse's independent observations could provide greater accuracy (Emmons, 1991; Pennebaker, 1991; Snyder et al., 1997). The significant other findings could help achieve a more realistic picture of anger behavior in the subject's home environment (DiTomasso & Colameco, 1982; Knelp et al.).

Table 5

Number of Anger Events Reported by the Subject and his Wife From Pretreatment to Poststudy

<u>Phase</u>	<u>Date</u>	<u>Anger Event</u>	
		<u>Subject</u>	<u>Wife</u>
Baseline	6/4/03	YES	NO
Baseline	6/5/03	YES	NO
Baseline	6/6/03	NO	NO
Baseline	6/7/03	NO	NO
Baseline	6/8/03	YES	NO
Baseline	6/9/03	NO	NO
1st Half Study	6/15/03	NO	NO
1st Half Study	6/16/03	NO	NO
1st Half Study	6/17/03	NO	NO
1st Half Study	6/22/03	NO	NO
1st Half Study	6/23/03	YES	YES
1st Half Study	6/24/03	NO	NO
1st Half Study	6/27/03	NO	NO
1st Half Study	6/28/03	NO	NO
1st Half Study	6/30/03	NO	YES
1st Half Study	7/4/03	YES	YES
1st Half Study	7/6/03	NO	NO
1st Half Study	7/7/03	NO	NO

2nd Half Study	7/10/03	NO	7/10/03	NO
2nd Half Study	7/13/03	NO	7/12/03	NO
2nd Half Study	7/14/03	NO	7/14/03	NO
2nd Half Study	7/18/03	NO	7/16/03	NO
2nd Half Study	7/19/03	NO	7/18/03	NO
2nd Half Study	7/20/03	NO	7/20/03	NO
2nd Half Study	7/23/03	NO	7/21/03	NO
2nd Half Study	7/24/03	NO	7/23/03	NO
2nd Half Study	7/25/03	NO	7/24/03	NO
2nd Half Study	7/27/03	NO	7/25/03	NO
2nd Half Study	7/28/03	NO	7/27/03	NO
2nd Half Study	7/29/03	NO	7/29/03	NO
Poststudy	8/4/03	NO	8/5/03	NO
Poststudy	8/5/03	NO	8/7/03	NO
Poststudy	8/6/03	NO	8/9/03	NO
Poststudy	8/11/03	NO	8/10/03	YES*
Poststudy	8/12/03	NO	8/11/03	YES*
Poststudy	8/13/03	NO	8/12/03	YES*
Poststudy	8/18/03	NO	8/18/03	YES*
Poststudy	8/19/03	NO	8/20/03	YES*
Poststudy	8/21/03	NO	8/22/03	YES*
Poststudy	8/26/03	NO	8/25/03	YES*

Poststudy	8/27/03	NO	8/27/03	YES*
Poststudy	8/28/03	NO	9/3/03	NO

Note: No equals lack of incidents involving anger; Yes equals anger reported on Anger Events Inventory form; and Yes* equals anger reported in written note.

Comparison of Anger Events Inventory Forms
for the Subject and his Wife

<u>Subject</u>	<u>Date</u>	<u>Symptom</u>	<u>Incident</u>	<u>Thought</u>	<u>Ease to Anger</u>
Husband	6/4/03	pounding/racing heart	people on steps	NA	very easy
Husband	6/5/03	trouble sleeping	loud music	NA	easy
Husband	6/8/03	lightheaded	painting wrong at work	wanted to walk out	easy
Husband	6/23/03	trembling/racing heart	co-worker not doing job	felt like walking out	in the middle
Husband	7/4/03	trembling/jumpy/shaking	police brutality	this is unfair	difficult
Wife	6/23/03	on edge	fan creating cold air	NA	easy
Wife	6/30/03	irritability	work-related	he used too much shellac	easy
Wife	7/4/03	irritability	police beating man	he couldn't help himself	very easy
<u>Subject</u>	<u>Date</u>	<u>Strengthen of Anger</u>	<u>Anger In/Out</u>	<u>Recipient</u>	<u>Time Involved</u>
Husband	6/4/03	strong	in	neighbors	.25hr
Husband	6/5/03	medium	out	neighbors	12.00hr
Husband	6/8/03	high medium	out	co-worker	.50hr

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Husband	6/23//03	high medium	out	co-worker	NA
Husband	7/4/03	severe	out	police	.50hr
Wife	6/23/03	mild	out	wife	.01hr
Wife	6/30/03	high medium	out	co-worker	9.00hr
Wife	7/4/03	severe	out	police	NA

Note: NA equal's Not Answered.

Table 7

Wife's Descriptive Analysis of Subject's Anger

<u>Phase</u>	<u>Date</u>	<u>Description</u>
Baseline	6/4/03	The subject was in a very good mood, talkative, laughing. I would say he had a very good day. No outburst of anger.
Baseline	6/5/03	Another good day for the subject. Again he was talkative and laughing.
Baseline	6/6/03	Still having a good day. No outburst of anger.
Baseline	6/7/03	Yet another good day. Sat downstairs for a half hour to forty-five minutes. Had dinner downstairs.
Baseline	6/8/03	Still having a good day. No outburst of anger.
Baseline	6/9/03	Another good day. Laughing and talking. Had dinner in the dining room again.
1st half	6/15/03	Once again all was quiet. No signs of anger. We had a pleasant conversation.
1st half	6/16/03	Another good day. We had dinner together. Good conversation without getting upset.
1st half	6/19/03	Attended graduation of grandson on Thursday. Had all positive things to say, except for the long wait at the restaurant after graduation. Still he kept calm. I think he enjoyed himself.
1st half	6/22/03	We were riding around the city for awhile today taking in the sights, just talking and laughing and eating ice cream. A very pleasant day.
1st half	6/23/03	Filled out Anger Events Inventory Form (Table 6)

1st half	6/24/03	Very pleasant day for him. Still very talkative. Very good communication. All was calm.
1st half	6/25/03	Nothing to report.
1st half	6/28/03	Nothing to report.
1st half	6/30/03	Filled out Anger Events Inventory Form (Table 6)
2nd half	7/4/03	Filled out Anger Events Inventory Form (Table 6)
2nd half	7/6/03	Nothing to report.
2nd half	7/7/03	Nothing to report.
2nd half	7/10/03	Nothing to report.
2nd half	7/12/03	Nothing to report.
2nd half	7/14/03	Nothing to report.
2nd half	7/16/03	Nothing to report.
2nd half	7/18/03	Nothing to report.
2nd half	7/20/03	Everything is still quiet. Nothing to report.
2nd half	7/21/03	Nothing to report.
2nd half	7/23/03	All is well. Noting to report.
2nd half	7/24/03	Very talkative today. No outburst of anger. Again nothing to report.
2nd half	7/25/03	Nothing to report.
2nd half	7/27/03	Nothing to report.
2nd half	7/29/03	Nothing to report.
Post-study	8/5/03	Nothing to report.
Post-study	8/7/03	All is quiet. Nothing to report.
Post-study	8/9/03	Nothing to report.

- Post-study 8/10/03 Stayed upstairs all day. Something seems to be bothering him.
He has not talked about it.
- Post-study 8/11/03 Still being quiet, not talking, just walks around with face frowning up,
not speaking.
- Post-study 8/12/03 The same as the day before, not talking, eating his meals in his room.
Face is still frowned up.
- Post-study 8/18/03 Attitude continues. Still not talking about what is bothering him.
- Post-study 8/20/03 Continues eating meals in his room. Still walking around with a frown on
his face.
- Post-study 8/22/03 Nothing changed. Still has an attitude. I just ignore him, the reason being
that if I say anything to him when he is like this, then there is
an argument.
- Post-study 8/25/03 Nothing has changed. Something is still bothering him. He is still not
talking about it.
- Post-study 8/27/03 He is still eating his meals in his room. Still not talking.
- Post-study 9/3/03 Talkative today, but not about whatever was bothering him in the past.
He is just a moody person. He wakes up with an attitude sometimes.

Pre-intervention Assessment Sessions

Two pre-intervention assessment sessions prepared the subject for the protocol. The first session involved informed consent, standardized tests to measure anger and problem-solving, and a clinical interview. The second session provided instructions for the self-monitoring of anger and blood pressure. These sessions are discussed below.

Pre-intervention session 1 (5/27/03). A primary-care physician referred a patient to the study who fulfilled the inclusionary requirements (Appendix E). She thought that he would benefit from participation in a case study that emphasized the relationship between EH and anger. After an exploratory telephone assessment (Telephone Interview Form, Appendix F), he was invited to attend a pre-intervention session that utilized standardized, self-report instruments to determine whether his anger scores were high, and whether they fell above the 75th percentile on the STAXI-2 (D’Zurilla et al., 1996; Mahan, 2001; Siegal, 1986; Spielberger, 1999).

The pre-intervention session took place at the medical clinic the patient attended. The investigator used one of the treatment rooms for the pre-intervention session, as well as for the 8-week protocol that followed. The patient (herein referred to as the subject) was greeted by the investigator (herein referred to as the therapist), oriented to the study, and provided with the “Informed Consent Form” that included the timetable for the study (Appendix G). Once the forms were reviewed, the consent was signed, and the subject was assured of confidentiality. Confidentiality involved locking written material in a file cabinet and maintaining anonymity and privacy in reference to taped,

spoken, and written material. The subject was asked if his wife would be willing to participate as an observer and given a partner "Informed Consent Form" (Appendix H) for her to sign. She agreed to participate. Her involvement provided an additional set of observations, as well as enhanced reliability if her responses substantiated the subject's data. If her answers contradicted the subject's, they would help determine whether the sessions were having a lesser effect than desired.

After an introduction to the purpose of the study, the subject was tested. The testing took an hour and was followed by a clinical interview (Appendix I). The clinical interview, including demographic information, was 45 minutes long. Questions elicited information about: age, gender, ethnicity, race, socio-economic class, BP history, other health problems, medications, marital history, number of children, parental history, parental health issues, siblings, occupation, hobbies, previous psychotherapy, use of alcohol and drugs, other addictions, sexual activity, social support, religious background, suicide attempts, and lifestyle issues, such as smoking, caffeine, and exercise. Information from the clinical interview, including the subject's demographic information, and lifestyle issues associated with EH, such as smoking, drinking, social support, and anger, is presented below.

The subject, an African American male, was 61 years of age. He quit school during the tenth grade and since then had many different jobs; his last job was as a truck driver for a construction firm. After a stroke in 1997, he received disability leave and had since retired. In his free time he helped people in his neighborhood repair their homes. His religious orientation was Baptist. He and his wife were together 25 years. Their three grown children from previous

marriages were successfully employed. The wife worked as a cashier for a newspaper company. His biological father, who was in the service, died about 20 years ago, and his stepfather, whom he regarded as his real father, did maintenance work and died a few years ago. His mother, who worked for the schoolboard, died of heart disease two years ago in her 70s.

In the EH literature, EH and heart disease are associated with lack of support (Lepore et al., 1993; Oxman, Freeman, & Manheimer, 1995). Cardiovascular patients who have been supported by family, friends, and community organizations have extended their lives and improved the quality of their lives. When the subject was asked about his close relationships, he reported visiting friends infrequently. Although involved with people in order to help them repair their homes (his hobby), these relationships seemed to lack intimacy:

T: Okay. What do you do to relax or to have fun in your life?

P: Work.

T: What kind of work are you doing?

P: Well, like, you know, repair houses, or like my house, you know what I mean, I mean doing different things in the house and stuff.

T: Okay. So you like using your hands and doing carpentry?

P: Yeah, yeah, yeah, electricity, plumbing, all that.

T: Okay, great.

P: Like, you know, I stay home and watch TV or like maybe one of my friends may come around and stuff, man, but I don't be hanging out.

T: Yeah. And are you friendly with people in the neighborhood, people from church, people from your old jobs?

P: No.

T: Who are the friends that would come around to say hello?

P: Well, well, I mean just like, like I see a couple -- I mean my friends that I used to be around, you know, they come around once in a while and stuff, man, but my neighbors, man, like I don't even mess with them.

T: So you don't mess with your neighbors?

P: No, man.

T: So basically you keep pretty much to yourself?

P: Yeah.

T: I just want to make sure, you know, that you have some social life. According to your wife, not only do you work on your house, but you help other people in their houses.

P: Right.

T: So would you consider those people friends, or are you doing that for extra money?

P: Yeah, yeah, I mean, sometimes, like I try to help them and then some people, like they might want to pay me something, you know, but really, it's not no big thing.

T: Okay. So there must be some people you're a little bit friendly with if they ask you for help.

P: No, no, no, I mean like I like to help people who really don't have nothing.

T: Right, so you don't have to be their friend. You just help people that are struggling.

P: Right, right, right, right, right.

For support, the subject turned to two people, his wife and his daughter (Session 8); otherwise he did not reveal himself to others. When his mother was

alive, he was very close to her and he was still grieving her loss at the time of the study. He was questioned about his mother and other support systems in the initial interview:

T: According to this, your mother just died two years ago; is that right?

P: Yeah.

T: Were you close to her?

P: Yeah, yeah, really.

T: So how is it for you with her gone?

P: Yeah, I mean, like, you know, thinking about her and stuff, man, you know.

T: Uh-hm.

P: You know, (inaudible) we go round to see her damn near every day.

T: You go to her gravesite, you mean?

P: No, no, I mean like when she was living.

Like support, lifestyle issues such as diet, exercise, smoking, alcoholism, and irrational anger are associated with EH. Hypertension patients, diagnosed in the mild category, may decrease their pressures without prescription medication by changing these habits of living (Patchin, 2002). Since his stroke in 1997, the subject attempted to improve his lifestyle. He cut down on alcohol consumption, as well as smoking. At the time of the study he admitted to two drinks on weekends and ten cigarettes per day:

T: Okay, now, use of alcohol, that was a big problem for you at one time; is that correct?

P: Yeah.

T: And when did you stop drinking?

- P: Well, really, like I didn't stop, but I cut down. I mean like, say, like two, maybe on the weekend.
- T: Uh-hm.
- P: I mean like I don't do like I used to do.
- T: Okay, so how many drinks would you have on the weekend now?
- P: I'd say around two.
- T: Beer or something else?
- P: No, like liquor.
- T: I forget if you were in rehab?
- P: No.
- T: You never went to rehab?
- P: No, no.
- T: Okay. So you've been able to cut down by yourself?
- P: Yeah, yeah.
- T: Good for you.
- P: So I don't mess with -- you know, I don't want to mess it up.
- T: Right. All right, you said no to drugs. Is that correct?
- P: Yeah.
- T: You said you smoke a little.
- P: Yeah.
- T: Is that daily, or how often?
- P: No, no, daily. Like I'm still smoking, but not as many, like I used to.
- T: Okay, less than a pack. Has Dr. P said anything to you about the smoking or the drinking, or she's okay that you've cut down, or she doesn't know?

P: No, no, I mean like she gave me like some pills and stuff, I mean, but I never took it. She always tells me to try to stop smoking, but I mean that's hard.

T: So when you do smoke, do you smoke less than a pack? Or are you talking about 20 a day?

P: Yeah.

T: Ten a day.

P: No, no, see, like ten.

Violence and anger were part of the subject's lifestyle. He enjoyed drinking, partying, and fighting until health considerations propelled him to make changes. He admitted that when he was a young man his parents called him "hot-headed." He also recognized that he undermined relationships with his temper (Session 1). Providing information about his family, he indicated that violence touched his life when his brother was shot to death in a bar:

T: You told me that both of your siblings, your brothers, are dead also. Is that correct?

P: Yes.

T: How did that happen?

P: One from birth and the other one got shot in the head.

T: How did he get shot in the head?

P: No, well, like he was going with this girl and like she would mess around with the other guy. He was in the bar and he was talking to her and the guy came in the bar and shot him in the head. And then...

T: How old was he at the time?

P: I think he was around in his 30s or something like that.

T: Oh, and how old were you at the time? Were you a lot younger?

P: No, no, like I was about -- I mean like me and him were almost the same age.

In the pre-intervention session, just described, the subject was selected to participate in this case study through high anger scores on the standardized tests. His clinical history was attained, including demographic and lifestyle information, and informed consent was acquired. The second pre-intervention session on 6/3/03, which is described below, provided training and instructions for self-monitoring.

Pre-intervention session 2 (6/3/03). The second pre-intervention session emphasized self-monitoring. First, the subject was introduced to BP self-monitoring and provided with a digital machine to use at home. After practicing with the BP machine, the self-monitoring of anger was introduced. Directions were given for the Anger Events Inventory (Appendix B) that was created by the investigator to help the subject become conscious of his anger and to understand and identify components of it:

T: For each incident, record the time the angry episode began and the time it ended. So let's say you got angry right now and let's say it's 10:50, so you'd say it was 10:50, and maybe you stayed angry for a half an hour. It ended at 11:20 or something like that. So that just gives you an idea of how long you stay angry. You might find yourself staying angry for a whole day or you might find yourself staying angry for five minutes. So you may not be able to fill this in immediately, until it ends.

- P: Correct.
- T: Now, these are symptoms. So when you get angry, for example, do you tremble or twitch, are you restless?
- P: Um.
- T: Do you get restless?
- P: Yeah.
- T: Yes. So does your heart race?
- P: Yeah.
- T: So you would just circle the ones that fit.
- P: Right.
- T: Maybe they won't always fit. Do you ever feel dizzy or light-headed?
- P: Sometimes.
- T: Okay, these are things like frequent urination, jumpy, irritability, shaking, fatigue, sweating, nausea, trouble swallowing, trouble sleeping, overeating, muscle tension, dry mouth. Different ones will occur depending on what you're angry about.
- P: Yeah.
- T: So just circle the one that applies. If none of them applies and something else does -- like if your jaw tightened and it doesn't say that here, then just write down, tight jaw. So write whatever you're feeling at the time you got angry. Then you try to say what the incident was that triggered your anger. Like right now, what's the last thing you can think of that you were angry about?
- P: Nothing really now.

T: What generally makes you angry? You've had quite a bit of anger in your life. What kind of things did people do or say to make you angry?

P: (stuttering) like, you know, like people just be talking or like even doing different dumb things, you know.

T: So give me one dumb thing that a person could do that might.

P: Um just let's say running their mouth and like they don't know what they're talking about.

T: So you write the incident. So you might say, you know, a neighbor was running his mouth or something.

In this pre-intervention session, which lasted an hour and a half, the subject practiced using the digital BP monitor, given to him for use at home, and he was provided an opportunity to fill out the Anger Events Inventory. Questions were answered and a time was set to meet for the first session of the protocol.

Medical History

The subject's primary care physician (PCP) provided the following information about his health history. He had a stroke in 1997 before becoming a patient at the clinic. He attended the Magee Rehabilitation Speech Therapy Clinic on 1/3/1998 for expressive aphasia. At his first visit to the PCP, on 1/8/98, his BP was 130/88. He was prescribed Pravachal for cholesterol, 300 mg of Avapro for BP, and 325 mg of Aspirin. On March 10, 1998, he was prescribed Ziac, a BP medication. In February 1999, a year later, his BP was 118/70. He was prescribed Plavix for cholesterol and Zyrtec for allergies. On 9/5/00, he was again

diagnosed with expressive aphasia and speech therapy was recommended. On 7/3/01, after a fall, right side weakness was diagnosed. In the year prior to this case study, his BP increased. On 3/28/02, it was 140/70 and on 9/25/02 it was 140/80, both SBP readings indicative of Stage 1 Hypertension, Risk Group C (NIH). The patient's BP climbed from 2/99 when it was in the optimal range at 118/70 to Stage I hypertension, SBP 142/82 on 4/22/03, his baseline medical BP reading for this study (Table 1).

Validity Check

The eight-therapy sessions were tape-recorded to validate the study. An independent observer, a doctorate level psychologist, reviewed the transcripts of the tapes, typed by a medical transcription service, to ascertain that the content of the sessions reflected the written protocol. She documented that all of the anger-management material and exercises were accounted for and presented in the order suggested by the protocol. Her documentation indicated the page number on which she found each item (Table 8).

Summary

This chapter on assessment reviewed: 1) the standardized instruments used in the case study to measure anger and coping skills (STAXI-2, MAI, MAD-AS, SPSI-R); 2) the subjective instrument used at the end of the eight therapy sessions (SUDS); 3) psychophysiological assessments: BP self-monitoring and medical clinic BP monitoring; 4) the Anger Events Inventory, a qualitative instrument for

self and other monitoring (Appendices B and C); 5) the two pre-intervention interviews, involving a clinical history, an anger assessment and instruction in self-monitoring; 6) the subject's demographic and medical history; and 7) the validity check, to ensure that the sessions reflected the protocol.

Table 8

*Independent Observer Validation of the Occurrence of Specified Topics in
Transcripts of the Eight-sessions*

<u>Agenda Item</u>	<u>Page</u>
<u>Session # 1</u>	
1. Set the Agenda	3
2. What is Essential Hypertension	4
3. Information About Physiological Arousal	5,6,7,8
4. Attaining Conscious Awareness of Your Anger	
A. What Makes You Angry	9,10,11
B. Describe a Recent Anger Episode	11,12,13,14,15
C. The Costs of Your Anger	15-23
5. Progressive Muscle Relaxation	25-35
6. Assign Homework and Review Self-monitoring	35-36
7. Fill Out "The Subjective Anxiety Scale"	38
<u>Session # 2</u>	
1. Set the Agenda and Review Homework	1,3
2. Discuss Anger Events that Occurred During the Week	4
3. Review Progressive Muscle Relaxation	5
4. An Explanation of Hidden Anger, "Anger-In", and "Anger-Out"	11
5. Recognizing The Types of Anger As They Effect Your Behavior	
A. Label Yourself	15
B. Recognizing Angry Feelings	15
C. Sensations in the Body	26
D. Anger Components List	31

- 6. Assign Homework and Review Self-Monitoring *_
- 7. Fill Out "The Subjective Anxiety Scale" *_

Session # 3

- 1. Set the Agenda 1,2
- 2. Discuss Anger Events that Occurred During the Week 2
- 3. Teach and Practice Staccato Breathing 5
- 4. Explain How Cognitions Trigger Anger and EH 11
- 5. Sequence of Anger Components for a Recent Anger Episode 13
- 6. Teaching Assertiveness 18
- 7. Role-Play an Anger Event Using Assertiveness Skills 21
- 8. Anger Exposure Exercise, Using Visualization 33
- 9. Assign Homework and Review Self-monitoring *_
- 10. Fill Out The Subjective Anxiety Scale *_

Session # 4

- 1. Set the Agenda 1
- 2. Discuss Anger Events that Occurred During the Week 2
- 3. Review Staccato Breathing and Make Adjustments 3
- 4. Teach Four Cognitive Errors: Overestimation
Catastrophizing, Shoulds and Oughts, and Blame 5
- 5. An Overestimation Exercise 13
- 6. A Decatastrophizing Exercise 18
- 7. A Should/Ought to Exercise 22
- 8. Blame, Anger, Truth Exercise 27

9. Assign Homework and Review Self-Monitoring	31
10. Fill Out The Subjective Anxiety Scale	*-

Session # 5

1. Set the Agenda	2,11
2. Discuss Anger Events that Occurred During the Week	1
3. Teach the Meditation Exercise	7
4. Discuss The Role of Irrational Beliefs in Hypertension	13
5. Review Irrational Beliefs that Trigger Anger	14
6. Learn Coping Statements to be Used with Irrational Beliefs	23
7. Learn a Nonconfrontational Way to Express Negativity	24
8. Experience an Anger Awareness Exercise with the Therapist in the Role of the Trigger	29
9. Assign Homework and Review Self-monitoring	24
10. Fill Out The Subjective Anxiety Scale	*-

Session # 6

1. Set the Agenda	2,3
2. Discuss Anger Events that Occurred During the Week	1
3. Review the Meditation Exercise and Make Adjustments	5
4. Graded Anger Exposure Role-Play Exercises From Stressful to Extremely Stressful, Using Therapist as Trigger	12
5. Client Pretends to Coach Someone with a Similar Problems	17
6. Assign Homework and Review Self-Monitoring	19
7. Fill Out The Subjective Anxiety Scale	*-

Session # 7

1. Set the Agenda	2
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2. Discuss Anger Events that Occurred During the Week	1
3. Review Any Difficulties that Occurred With the Relaxation Exercises	5
4. Practice Relaxation Exercises In The Session	6
5. Practice Anger Exposure Exercises -- Goal to Erase All Anger Responses	8
6. Provide Closure To The Therapy Protocol	
A. Identify High-Risk Situations	15
B. Rehearse Responses to Anticipated Stressful Situations	18
C. State When, How, Where, and Why He Will Use the Coping Strategies	20
D. Review the Successful and Unsuccessful Efforts at Anger Management	20
7. Discuss and Implement Relapse Prevention Techniques	20
8. Assign Homework and Review Self-monitoring	*-
9. Fill Out The Subjective Anxiety Scale	*-

Session # 8

1. Set the Agenda	2
2. Discuss Anger Events that Occurred During the Week	2
3. Review Any Difficulties that Occurred With the Relaxation Exercises	3
4. Practice Relaxation Exercises In The Session	4
5. Practice Anger Role-Plays -- Goal to Erase All Anger Responses	8
6. Provide Closure To The Therapy Protocol	
A. Identify High-Risk Situations	13
B. Rehearse Responses to Anticipated Stressful Situations	13
C. State How, When, Where, and Why He Will Use Coping Strategies	13
D. Review the Successful and Unsuccessful Efforts at Anger Management	13

- 7. Discuss and Implement Relapse Prevention Techniques 19
- 8. Assign Homework and Review Self-monitoring *-
- 9. Say Good-bye and Prepare for One Month Follow-up Session *-
- 10. Fill Out The Subjective Anxiety Scale *-

Note: *- indicates that the tape had finished prior to the end of the session.

Treatment

An 8-week anger-management protocol (Appendix A) was designed to help Essential Hypertension (EH) patients with clinically significant levels of anger deal with the emotional and behavioral components of the disease. The purpose of the protocol was explained to the patient in the introductory session. In addition, the relationship between physiological arousal and EH was explored and information about the psychophysiological aspects of the disease was provided. The early sessions introduced the patient to hidden and withheld anger, provided exercises to facilitate its identification and expression, identified anger that was communicated outwardly, in an impulsive and destructive form, and suggested strategies for anger control. All eight-sessions focused upon relaxation and breathing exercises that were utilized to diminish the effects of arousal on the body. Similarly, all sessions emphasized cognitive skills to reduce and transform anger, assigned homework, and reviewed it, and provided positive reinforcement for the subject. In the later sessions, the patient described current situations in his life that engendered anger and learned anger response control. The intent of the 8-week protocol was to teach tools and strategies to manage anger and to provide information about the biopsychosocial aspects of the disease. The protocol emphasized the reduction of physical tension, the control of excessive anger, repressed or expressed, the transformation of belief systems and attitudes that trigger anger, hostility, and negative judgments of others, and the management of stress.

During the protocol, the patient was asked to keep records concerning his anger and blood pressure (BP). Learning how to be an observer, rather than a victim of one's anger, was the first step in hypertension control. By using the recording forms supplied by the investigator for the self-monitoring of anger, the patient observed when, where, and under what circumstances his anger occurred. This knowledge helped eliminate inappropriate anger that in its repressed, expressed, or hidden form affects blood pressure. The written records provided the patient with accurate information to help him gauge his progress in an objective manner. He could determine whether he was improving or regressing from one day to the next.

A brief therapeutic intervention was desirable for several reasons: a) it offered a focused, problem-solving approach; b) it provided a psycho-educational format; c) it offered an appropriate context for exposure techniques; and d) it emphasized self-responsibility and self-efficacy, rather than dependence on others (Belar & Deardorff, 1995). Research concerning the cardiac personality suggested that cardiac patients would respond more positively to concrete approaches that involved problem-solving, education, and self-efficacy than to a longer term psychodynamic approach (Davison et al., 2000; Pierrakos, 1987; Snyder et al., 1997). Although a longer protocol might have been desirable in order to change life-time anger patterns, research on EH patients indicated a resistance to self-exploration and the acknowledgment of feelings that was more likely to respond to a shorter protocol (Davison et al., 2000; Mann, 2000).

The protocol (Appendix A) combined relaxation and breathing exercises that decrease SNS arousal with cognitive-behavioral techniques and positive reinforcement. Relaxation, breathing, and meditation exercises were introduced

in the sessions and assigned for homework. Practice at home was extremely important to promote and reinforce change (Barlow, 1988; DiTomasso, 2000). Anger exercises identified and changed automatic and irrational thoughts. The exercises utilized included: visualization, role-play, behavioral rehearsal, assertiveness training, and exposure techniques. They taught the patient how to reduce physical tension, control excessive anger, reveal hidden out-of-awareness emotions, identify belief systems and attitudes that trigger anger and hostility, manage stress, and take responsibility for his feelings, whether that meant becoming more or less expressive.

In the following sections of this chapter, a capsulation of each of the eight anger-management sessions is provided. Following the capsulation, excerpts from the session, taken verbatim from the transcripts, are presented. The excerpts chosen for inclusion reflect significant issues with which the patient struggled in an effort to decrease his anger and arousal levels. It is possible that they would be different for another patient. The excerpts also reflect cognitive-behavioral methodology that has been proven to be empirically sound in the area of anger-management (Goldfried & Davison, 1994). A summary of the main areas of focus for each anger-management session is provided at the end of each section. In the sessions the patient is referred to as "subject" and the investigator is referred to as "therapist."

*Session 1 (6/10/03)**Capsulation.*

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum., 1996)
2. What is Essential Hypertension (Cooper, 1990; Mann, 1999, Goldberg, 1998) (psycho-educational)
3. Information About Physiological Arousal (Cotton, 1990; McKay, et al., 1989; Peletier, 1977; Selye, 1978) (psycho-educational)
4. Attaining Conscious Awareness of Your Anger
 - A. What Makes You Angry (Bilodeau, 1992)
 - B. Describe a Recent Anger Episode
 - C. The Costs of Your Anger (McKay et al.)
 (anger exercises to establish awareness and sensitivity)
5. Relaxation and Breathing Exercises (Benson, 1993; Craske, Barlow, & O'Leary, 1992; Jacobson, 1938) Progressive Muscle Relaxation (Craske, Barlow, & O'Leary, 1992; DiTomasso, 2000)
6. Assign Homework: Relaxation and Self-monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
7. Fill Out "The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. The subject was asked to monitor his anger over the baseline period. Therefore, at the beginning of the first session, self-monitoring was reviewed. Asked for feedback about his experience self-monitoring anger, the subject

reported that he did not fill out the Anger Events Inventory form daily. The following conversation ensued:

T: To start out just give me back the forms (the anger events inventories used to establish baseline) that you took with you. Did you have any problems filling them out or anything?

P: Well, like some of them, like, uh, uh (stuttering) I mean um, really, I mean, like two of them, I didn't do it because, you know, because I figured it ain't no sense me putting something on it if -- I mean, something don't happen.

T: Right, okay. Well, that makes sense.

P: I mean not every day.

T: Right.

Although it was likely that the subject experienced some anger or irritant daily, the therapist affirmed him for deciding whether to fill out the forms or not according to his subjective experience. The therapist then spoke to him about the agenda for this first session. In cognitive-behavioral therapy an agenda, that is set at the beginning of each session, helps clients know what to expect during the session. It also helps therapists and clients to stay focused on the topics relevant to the presenting problem. In this study, the agenda was set with the intention of teaching the subject about the relationship between anger and high blood pressure, to introduce him to relaxation exercises, and to present him with a series of exercises that would help him become conscious of and manage his anger. After the agenda was presented, the subject was given an opportunity to add to the agenda, as long as his additions involved the role of anger or its consequences in his life:

T: Today, we're going to do a few things. We're going to make an agenda. I'm going to talk to you about Essential Hypertension and its relationship to emotions and physiological arousal. Then we're going to look at some anger experiences together in terms of what makes you angry, recent anger experiences, and the costs of your anger. Then I'm going to teach you something called progressive muscle relaxation, which helps people relax. And I want you to do that at home three times this week just as a practice. I'm going to give you a tape to take home with you so you can practice with the tape and eventually you'll learn to do it without the tape.

P: Okay.

T: That's what's on my agenda for the day. Do you want to bring up anything about your anger and put it on the agenda?

P: Uh-uh.

Psycho-education is an important part of the cognitive-behavioral therapy process. The therapy usually begins with the definition of key concepts, providing the subject with an in depth understanding of elements that affect his behavior and his life. In this example, from the first session, the therapist explained the meaning of the diastolic and systolic blood pressure measurements to the subject:

T: So high blood pressure means your blood pressure is elevated and it's recorded in two ways. The systolic blood pressure, we call it SBP, that's the higher number, and the diastolic blood pressure, DBP, is the lower number. And what the systolic means is that the heart contracts, it tightens like my fists are tightening right now in order to push the blood

through the veins and arteries into all the organs of your body. The diastolic represents the heart when it relaxes.

P: Is that the...?

T: The lower number, right. So that's measuring your heart relaxing and the other one is measuring how much pressure you're exerting to push the blood into your veins and arteries. So a normal blood pressure reading is usually around 120 over 80.

The therapist continued by explaining the relationship between EH and high arousal. According to the subject's health and clinical history, he seemed to demonstrate high arousal behavior. He had been involved in many physical fights and yelled and broke things at home. He suffered a stroke a few years prior to the study. Therefore, the therapist hypothesized that an understanding of arousal as it affected his body, and as it related to his emotions, was necessary to begin the change process, attain his collaboration, and enhance his motivation to change.

Information about what happens in the body when a person experiences a threat was provided to help the subject understand the physical ramifications of his emotions. When he interpreted a situation as dangerous or threatening, chemicals were released into his bloodstream that had an impact on his behavior and his health. In this psycho-educational piece, the therapist provided information about arousal and suggested that the subject might be responding to situations as if they were more dangerous than they actually were in reality. Therefore, he was inadvertently causing a certain amount of deterioration in his body:

T: Now, research findings show that there's a relationship between high blood pressure, physiological arousal (that means when everything is all pumped up) and emotion. So the cardiovascular system pumps the blood, and there are chemicals in the bloodstream. It's moving those chemicals through your body into the different organs of the body. And some of the chemicals are related to emotions, such as anger and fear. These chemicals produce increases in heart rate, blood pressure, vascular resistance, and they also produce certain secretions which contribute to hypertension.

P: Uh-huh.

T: So when you feel threatened, two chemicals: adrenaline and neuroadrenaline, are released from your adrenal glands. And these chemicals send messages to the rest of the body to prepare for action. They say to the body, you're under threat, prepare for action.

P: Uh-huh.

T: And then after the danger is passed, your body just doesn't go back into a relaxed state. It takes time to relax. So you have all of this adrenaline and neuroadrenaline in your body.

P: Yeah.

T: So although the fight or flight response is designed to protect us, you know, for our survival, it's generalized to many of life's experiences that involve a psychological rather than a physical threat. For example, if you perceive a threat, even if it's minor, such as a frown from the boss, your sympathetic nervous system can get triggered, the same as if you were being chased down the street by a mugger. I mean you respond like your

life is threatened when, you know, it could be that your wife burnt the meat for dinner or something ... People with high blood pressure often have this response when they perceive that they're being treated unfairly, you know, when they think an unjust situation is occurring.

P: Yeah.

T: At first, they feel fear when they experience themselves being treated unfairly. This quickly shifts to anger and the desire to fight replaces the original fear, and the blood pressure goes up in preparation for the fight. When the nervous system swings into high gear like this, it can cause internal damage to the body. What we're going to try is to help you develop some coping skills for anger so you don't do what you've been doing. You know, kind of let it out and ...

P: Yeah.

T: ... start yelling and screaming and stuff.

P: Yeah, yeah.

T: And you don't necessarily hold it in and damage your own body.

After educating the subject about the relationship between high blood pressure and high arousal, the therapist introduced a series of exercises to help him become more aware of his anger. The first anger awareness exercise helped the subject identify what made him angry. This exercise enabled him to order the types of situations and behaviors that triggered his anger from the most likely to initiate it to the least likely. By learning that he was most often triggered when he perceived someone as arrogant, he could prepare himself to respond to those he perceived as arrogant differently than he had in the past. He might also learn

that his perception was not always correct and that what he perceived as arrogance could have been another behavior, such as shyness or discomfort:

T: This exercise asks what incites your anger and what makes you angry? So first of all, put a check by the ones that you know make you angry. Okay, the ones you checked are arrogance, rude people, yelling, waiting, lies, inconsiderate, workers who don't do their jobs, false accusations. Can you think of some other things that aren't on this list that make you angry?

P: No.

T: Okay. So in this list, how would you order them? So which would you say makes you the angriest of all of those? Can you order them from the thing that makes you the most angry to the least angry.

P: You mean just put (number) one.

T: Yes, one, two, three. Okay, so (1) arrogance, (2) yelling, (3) rude people. Which is four? Here?

P: Yeah.

T: (4) Inconsiderate. Okay, this would be nine, (9) workers who don't do their job right?

P: Yeah.

T: Okay. So do you have any idea why arrogance triggers you the most?

P: Well, I mean, you know, like well, well, like, when people, man, I mean, like when other people get on my nerves, man, because I mean they're just ignorant. You know what I mean? I mean they don't know what they're talking about.

T: Right.

P: I mean but they think they know it.

Following this exercise, the subject was asked to describe a recent anger incident in detail so that the therapist could target the types of situations, incidents, and behaviors that aroused his anger. His response was that he could not think of any recent anger and he blamed his poor memory on the stroke. In a telephone call with the subject's wife, at the beginning of the baseline period, she told the investigator that he broke several things in anger the week before. Because this was the first formal meeting between therapist and subject, his response that he did not remember recent anger could be understood in terms of embarrassment or guilt. He might not have yet developed the rapport or trust necessary for him to share aspects of his anger with the therapist:

- T: Describe a recent anger incident and be as specific as possible. Who made you angry? What was it about? Where did it happen? When and how? Include the details, and try to explain exactly.
- P: No, well, like really, you know, I don't even know, because like sometimes -- I mean since I had that stroke, man, like I don't be, you know, freaking out like at different things man. I mean just like you could tell me something this morning and I probably don't even -- I mean, I mean get it on that day. But, I mean, but the next night, you know, it might come, you know, I'd be thinking about it.

After struggling with his resistance, the subject was able to describe a recent situation involving a coworker that made him angry. In this incident, his anger seemed to have been associated with high expectations and "shoulds" for the coworker's behavior. The therapist wanted to observe if anger situations reported by the subject in future sessions followed this same thought pattern. The therapist believed that the subject's thoughts could trigger the behaviors that

immediately followed them. In this instance, the subject expressed annoyance toward his coworker. However, he was not cruel, as he had been in the past, and he also made an effort to problem-solve by telling the coworker what he thought should be done differently:

P: Yeah, like this guy that I was working with, man. I mean he don't really know what he's doing, man. But I mean he be doing different things, man. Plus I had to tell him, you know, I mean that he's doing it wrong and stuff, man. But I mean he's still do, I mean, like he's going to do it his own way and stuff. I mean, but it will never come out well, you know.

T: So he doesn't really pay attention to you?

P: No, no, no, no.

T: So you're supposed to be telling him what to do, but he doesn't listen?

P: Right, right, right.

T: When he does that, and doesn't pay attention to you, and starts making mistakes, how do you express your anger?

P: I mean, (stuttering) I tell him. I say "yo, man, what you doing," you know, and then he'll say "oh, oh, oh, oh, oh, oh, you're right." But, I mean, I have to, you know, be on him about it, man.

T: Right. Do you sometimes hold it in and think about it later?

P: No.

T: No? You let that one go pretty quickly?

P: Quick, yeah. I mean because I mean if I don't (tell him), I mean he's going to mess up.

T: Right, okay.

P: So I have to tell him right now.

The therapist asked the subject about anger prior to the beginning of the study, hoping that he would bring up the incident, when he broke a dish-rack, to which his wife alluded. Although he did not share that situation, he discussed his irritation with his wife over her use of the telephone. Again his thinking and corresponding behavior was affected by his use of "should" as well as expectations concerning fairness and his judgments about how others should behave:

T: Can you think of a recent anger incident, maybe even before we started the study with your wife, where you got angry at her?

P: No, well, like not really, but, I mean, I mean, like, sometimes I'll be mad, I mean, because she's on the phone all the time and I'll be talking and stuff, man. I mean, I mean, I mean, (stuttering) and that's like phew, every hour on the hour.

T: Wow.

P: I mean people be calling. I mean her family and friends and stuff, man, because me, like I don't even, I mean, use the phone that much.

T: Uh-hm. So it's hard to get her attention?

P: Yeah.

T: And it also must be bothersome having the phone ringing all the time?

P: Right, yeah, yeah, yeah, yeah, because, like, in the middle room, like, I'll be watching something on TV there, I mean, but I turn the phone off in that room.

Another exercise utilized in the first session helped the subject identify the most likely objects of his anger. He found his anger was most likely to be directed toward authorities, such as the police, his neighbors, and coworkers, in

that order. It was least likely to be directed toward close family members. The exercise helped him look at the impact of his anger upon his relationships. It asked him to think about relationships he may have lost due to his angry behavior:

T: So how has your anger impacted your relationship to authorities: teachers, bosses, police, government employees and so on? No impact, minor effect, moderate, significant, or major?

P: Fourth (major effect).

T: So you think it's had an effect on your relationship with bosses and the police, etc.?

P: No, no, with the police and the government.

T: Really? Okay.

P: Yeah.

T: Have you ever been arrested or anything like that?

P: Yeah, about years ago, I think about 40 years.

T: How has your anger affected your relationships to peers, you know, people on your level and colleagues at work?

P: Moderate (number 2).

T: So you've gotten into it with some colleagues at work?

P: Uh-hm.

T: And what about people underneath you at work, below you?

P: Two

T: Minor? (inaudible) two. Two is moderate.

P: Yeah, two (number 2).

P: No.

T: How has your anger affected your relationship to your spouse or lover?

P: Minor effect (number 1).

T: In-laws?

P: No.

T: Your own parents?

P: No.

T: Other family members?

P: Moderate (number 2).

T: Current friends?

P: The same (number 2—moderate).

T: Former friends?

P: Put down two (moderate).

T: Neighbors?

P: Three (significant).

As the therapist and subject continued this exercise, more consequences of his angry behavior were identified. In addition to losing friends and support from others, it had significantly affected his health. It had also intruded upon his ability to participate in pleasurable activities and enjoy himself:

T: What is the effect of the anger symptoms: rapid heart rate, tension, shoulder and neck pain, headache, irritability, feeling pressure, restlessness, insomnia and so on? The effects of having those symptoms going on for you?

P: Three (significant).

T: Time lost to angry feelings?

P: Two (moderate).

T: Anger intruding into relaxing or pleasurable activities; sex, sports, hobbies, vacations, you know?

P: Three (significant).

T: Effect of anger on experience while driving?

P: Two (moderate).

T: Effect of anger on accidents, errors and mistakes?

P: Two (moderate).

Although the subject denied expressing anger toward his parents in this exercise (page 15), later he admitted that his parents perceived him as an angry young man. From statements, such as this one, it can be hypothesized that anger has been a long-standing problem for this subject:

T: How about when your parents were alive; what happened with your anger when they were around?

P: Well, I mean, I mean what they always said that I was, I mean, I was hot-headed and stuff, man, you know.

T: Uh-hm. So they thought you were hot-headed?

P: Uh-hm.

The topic of authority, arrogance, and the subject's anger was brought up again in the session during a casual conversation that took place while the subject was waiting for the medical assistant to record his blood pressure. The subject recounted an experience that occurred earlier that morning when he stopped to pay a bill at the electric company. When he asked to borrow a pen, the clerk responded arrogantly. The response triggered his anger to the degree that he left without paying the bill. He explained that when he perceived that a

person was acting as if they were better than another, he became aroused.

Therefore, this was an important area for the therapist to target:

P: (waiting for medical assistant, subject begins to talk about something that made him angry that morning) I mean because if I'm paying these bills, and like I mean he's going to give me an attitude, you know what I mean. I mean but some people, man, they -- I mean, like as soon as they get some kind of authority, man, they go shooting their mouth.

T: Right, they stop being helpful.

P: Yeah, yeah.

Because pleasure, leisure time activities, and quality of life are associated with lower blood pressure and lower arousal levels, the subject was asked how he pleased himself (McCraty, Atkinson, Tiller, Rein, & Watkins, 1995). The therapist's intention was to help the subject think about substituting pleasurable activities in place of behavior that had been previously associated with high arousal. In exploring this topic with the subject, he admitted that, in the past, he associated pleasure with drinking and partying. This pattern had changed since the stroke:

T: What do you do for pleasure? I mean I know you work on people's houses. Is that your pleasure, or do you have other things?

P: No, I'm um, um, um (stuttering), like, just like, you know, just work, man, watch TV, or something like that. I don't even do it like I used to do.

T: What did you used to do?

P: Well, drink, you know, go to bars or party and stuff, man, like, I mean, but now like I don't do anything.

T: So that was your pleasure in the past.

P: Yeah.

T: Was bars and parties.

P: Yeah.

T: What about sports, do you watch them at all?

P: Yeah, yeah, yeah.

T: What's your favorite sport?

P: Baseball and football and boxing.

Following the anger awareness exercises, the therapist asked the subject to help set goals for the 8-week, anger-management protocol. Asking him to define his goal in the first session, emphasized the process of collaboration and helped set the course of the therapy. In addition, it was easier to meet the goals specified by the subject (client-driven) than those determined by the therapist (therapist-driven). The subject said that his goal for the therapy was to become less angry in general:

T: In what situations would you like to become less angry?

P: Well, me, like, I'm saying not only one place, like, I mean (stuttering), I mean the whole thing.

T: Okay, in general?

P: Yeah.

T: You just want to bring it down a notch?

P: Right, right.

T: Like turning the radio down.

P: That's what I'm talking about.

The third area of focus in the first session was breathing and relaxation. During the length of the protocol, three relaxation exercises were taught and

practiced at home: Jacobsen's Relaxation, Benson's Meditation, and Pierrakos's Stacatto Breathing (Pierrakos, 1989; Wilner, 1999). In this session, the Jacobsen relaxation exercise was introduced. (Directions are provided in Appendix J). Following the relaxation exercise, the therapist asked the subject to focus on his breathing and at the same time say the word "relax" quietly to himself. The situation at the electric company with the arrogant clerk was used to enhance the exercise. The therapist asked the subject to use the breathing and the directive "relax" to alleviate the stress and arousal that occurred when he was treated arrogantly:

T: Take a deep breath in and then let it out and let any remaining tension out. For another few seconds, I'd like you just to be aware of your breathing, breathing in and breathing out, as you sit here. And I want you to say the word "relax" on your "in-breath." You don't say this out loud, just say it to yourself, and on your "out-breath", say the word "relax." If you were in the office, where you went to pay the bill this morning, and if they didn't have a pen to loan you, imagine the situation if you were breathing and thinking the word "relax"...

The final exercise in the first session involved body awareness. It was important for the subject to perceive the symptoms that occurred in his body when he became angry. These symptoms were signs of high arousal that he could learn to recognize. By using an example from her own experience, the therapist helped the client become conscious of tension in his body. Sensing tension in his body could help him predict the occurrence of negative thinking, angry behavior, and high arousal:

T: Let me ask you a little about this experience that we just did. Were there any parts of your body that you had difficulty relaxing?

P: No, uh-uh, no.

T: What would you say were the tenser parts of your body? Where did you have more tension? I have it in my shoulders. Where do you have it?

P: Yeah, yeah, well, me, I mean my legs and my shoulders.

At the end of the session, the therapist provided directions for The Degree of Subjective Anxiety Scale (SUDS). The SUDS was given at the end of each of the eight-sessions to assess the subject's comfort with the material covered. To make certain that talking directly about anger did not create more arousal in the subject, who did not normally discuss these issues, the SUDS was added to the assessment package:

T: Now I'm going to stop the tape. I'm going to go look for the medical assistant in a minute, but I need you to fill this form out and give it to me. It assesses how you feel about today's session. Think of the most intense anxiety you've ever experienced in your life, and you're going to assign this a number of 100. And then think of a state of absolute calm and assign it zero. So now we've finished the therapy session and on the scale provided below, circle your discomfort in today's session. So this is a hundred, the most discomfort or anxiety, and this is zero, the least discomfort or anxiety. So circle the number that describes what you're feeling right now.

Summary. At the outset of the session self-monitoring was reviewed. Session one stressed psycho-educational material concerning the relationship of high

arousal and high blood pressure (Cotton, 1990; McKay et al., 1989; Peletier, 1977; Selye, 1978). An agenda for the session was set (Dattilio & Freeman, 1992; Meichenbaum., 1996). Anger awareness exercises provided the subject with information about his anger and body awareness exercises helped the subject become more aware of the physiological components of his anger (Bilodeau, 1992). A section on breathing and relaxation was designed to help decrease the effects of high arousal on the subject's body and the first exercise presented to the subject for practice, both in session and at home, was Jacobsen's relaxation (Benson, 1993; Craske, Barlow, & O'Leary, 1992; Jacobson, 1938). At the end of the session homework and continued self-monitoring of anger and blood pressure were assigned (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994).

Session 2 (6/20/03)

Capsulation.

1. Set the Agenda and Review Homework (Dattilio & Freeman, 1992; Meichenbaum, 1996) (homework was the Jacobsen relaxation)
2. Review Homework and Discuss Anger Events that Occurred During the Week
3. Review Progressive Muscle Relaxation (Craske et al., 1992; DiTomasso, 2000)
4. An Explanation of Hidden Anger, "Anger-In," and "Anger-Out" (Mann, 1999; Spielberger, 1999) (psychoeducational)
5. Recognizing The Types of Anger As They Affect Your Behavior
 - A. Label Yourself (Mann, 1999)
 - B. Recognizing Angry Feelings (Bilodeau, 1992)

C. Sensations in the Body (Weisinger, 1985)

D. Anger Components List (Craske et al., 1992)

(sensitization to his own anger and body experience)

6. Assign Homework: Relaxation and Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 2000; Meichenbaum, 1994)

7. Fill Out "The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. At the beginning of the second session, self-monitoring was reviewed. The subject stated that he did not fill out the Anger Events Inventory because "nobody made me mad." This statement suggested to the therapist that the subject was not conscious of his anger unless the cues were strong or unless he was already "acting out" in anger:

T: So, were you able to take your blood pressure three times this week?

P: Yes.

T: Okay, and fill out the anger forms?

P: No. Because really, cause, like, I didn't, well you know, didn't nobody really make me mad or nothing. So, like, I didn't even really, well, you know.

In questioning the subject about why he did not experience anger this week, he referred to an improvement in his ability to manage anger. When people "make him mad," he no longer "goes off." The subject's response indicated that as early as the second meeting he was trying to manage his anger. The therapist reinforced the change in his behavior:

T: (looking at the anger forms) It looks like when you're really conscious and you watch what you're doing, then your anger starts going down.

P: Yeah, yeah, yeah, but really, (stuttering) it's been kind of, well you know, low now, (stuttering) because like, I ain't, I mean, like when people make me mad or things, man, like I just know

T: Right.

P: Because, before, man, I be going off and stuff , man, but I just try not to even do that no more.

T: Right.

In addition, the subject's wife, mentioned on the Partner Anger Events Inventory forms that she noticed improvement in the form of decreased anger and more communication. She wrote on the bottom of her forms that he was pleasant, sociable, and talkative during the period between sessions one and two (Table 6). The therapist used her comments to reinforce the change process.

P: Yeah. Yeah. You know what, I'm trying to do it everyday (the relaxation exercise), you know.

T: Right. Well it's certainly pleasing your wife, because she only writes good things about you right now.

P: Yeah.

T: She's enjoying being with you.

P: Yeah, yeah, well, I mean, it's a (stuttering) difference. Well, you know.

In the ensuing conversation, the subject admitted that he noticed specific differences in his anger behavior and the therapist provided positive reinforcement to support this change. He referred to his use of cognitive-behavioral techniques, distraction, and self-talk, to help him manage anger. The therapist noticed changes in his automatic thought processes as well:

T: You already said that you were different this week. Is that correct?

P: Yeah. Yeah.

T: So what do you think made a difference? How come you didn't go into your anger phase when people were rude or held you up?

P: Well, you know, I tried, you know, tried to, I mean, you know, I tried not to let them get on my nerves and stuff, man. I mean, if they be saying something, or this, that, and the other, like, I just walk away, man, because, I know, like, if somebody say anything, man, like, I would want to fight and argue and stuff. Then, you know, like, I don't even want to do that.

T: In your mind, would you tell yourself to just walk away from this person, or would you say to yourself it's not worth getting upset about it?

P: Yeah. Right.

T: Is there anything else you would tell yourself before you walked away?

P: Well, well, not really (Stuttering). Well, like, I'll tell them what I have to tell them.

T: Very good. What did you tell yourself right before you walked away? Can you repeat that to me?

P: Well, well, like, I told, like, "I don't want to," well, you know, "start nothing" and stuff like this, man.

T: Great! That's terrific! Well, that helps when you do self-talk, talk to yourself, saying "I don't want to cause trouble."

P: Right

When asked if he saw any problems that could prevent him from managing his anger in the future, the subject responded that he would have to defend

himself if someone touched him. This is a possible relapse trigger point to be reviewed with the subject in later sessions of the protocol.

P: I mean, long as they don't put their hands on me or something, man, you know.

T: So what would happen if someone put their hands on you?

P: (Stuttering) Well, well, hey. Like I gotta do what I gotta do. Cause you know?

T: So, you mean if they put their hands on you to do you harm?
If someone just gave you a pat on the back?

P: Oh, no, no, no.

After discussing the homework and the self-monitoring experience, and once the agenda for the session was set, the relaxation exercise was reviewed. The therapist guided the subject through the steps (Appendix J) into a relaxed state. After the exercise, he was asked to focus upon his body sensations in order to enhance body awareness. The therapist theorized that if the subject became more aware of cues in his body that reflected relaxation, he would have more control over his response to events that triggered the opposite, an impulsive, angry reaction. The therapist, therefore, asked him what he was aware of in his body following the relaxation exercise:

T: How was that for you? Right now, what are you aware of in your body?

P: Yeah well, I mean, like my body, well, you know, kind of, well,
(stuttering) relaxed, a little bit.

T: You can feel the change.

P: Yeah.

T: Were you tense when you came in here this morning?

P: No, not really.

T: But you let go of something.

P: Yeah.

The second session's psycho-educational focus was anger. First, the role of hidden anger as it relates to EH was explored:

T: In the 1970s, there were some new theories about high blood pressure. What they found out was that people who had difficulty sharing anger or even knowing they were angry were very prone to high blood pressure. The person who made this discovery was a doctor named Samuel Mann, who worked at Cornell Medical Center in New York. He actually found a relationship between high blood pressure and hidden anger. Many people who came to him with very high blood pressure told him that they had less stress than other people who did not have high blood pressure. He found out that these people with high blood pressure were not in touch with their feelings. They didn't know what they were feeling. They had feelings, but they never identified them. They couldn't feel them, so they couldn't release them in any way, and those feelings just stayed in their bodies and affected the blood pressure. So, at times, you might find yourself denying feelings, not knowing you have them, and denying that you're angry, or upset, or sad, or something ...

P: Or hurt.

T: Some people hide unresolved feelings from the past. They don't want to go back there. They don't want to relive those feelings. They block them and therefore the feelings are stuck in their bodies and can actually affect

their health, creating high blood pressure which creates heart disease. Do you have any questions so far about anything that I'm saying?

P: Uh um.

In addition to hidden anger, "anger-out" and "anger-in" were both cited as contributing to high blood pressure (Spielberger, 1999). Therefore, the subject was informed about the research that associated anger with EH:

T: The problem is that researchers are in conflict about the type of anger that has the most serious consequences for heart disease. Some studies show that it is people who are very aggressive, yell, shout, throw things, lose control, and are violent. Others studies show that it is the people who inhibit, suppress, or hide their hostility. So in these sessions, we are going to focus on both kinds of anger, because it's likely that you have both kinds of anger, as many people do. So, you may hold your anger in some of the time and other times you may put it out in a way in which you are actually losing control, yelling, screaming, and being nasty. Any questions about that?

In preparation for the anger awareness exercises that followed the discussion about the relationship of anger to EH, the therapist spoke to the subject about his difficulty communicating. She encouraged his verbal participation in session, because she believed that holding back verbal expression resulted in greater frustration, more anger-in, and higher blood pressure levels.

T: Any questions or anything that you want to share?

P: No, like, you, you said everything. Really.

T: I don't want you to end up holding too much in. So if you have something to say.

P: Uh hum.

T: Even in these sessions, I want you to practice talking.

P: Right.

T: Because I think, sometimes, you don't speak up enough. You let other people talk.

P: Yeah.

T: And then you end up holding in too much.

P: Yeah.

T: And you're probably surrounded with people, like me, who can talk a lot if you let them.

P: (Laughing)

The first anger awareness exercise in session two was designed to help the subject identify his hidden anger (Mann, 1999). He was asked to look at people who hid their anger and decide if he was similar to any of them. He identified with people who appeared as if nothing bothered them, seemed to be able to handle whatever came their way, and spent an inordinate amount of time working. He also admitted to being judgmental of others, mentally rehearsing angry conversations with others, and secretly fantasizing revenge:

T: Dr. Mann describes several categories of people who hide their anger. which ones fit you. Do you ever present yourself as the nice guy, not letting anyone know what you are really feeling?

P: Yeah.

T: Do you present yourself as even-keeled, as if nothing bothers you?

P: Yeah.

T: Do you act self reliant, like you can handle anything that comes your way?

P: Yeah.

T: Are you at times emotionally unavailable, cut off from your feelings and cut off from other people.

P: No.

T: Do you sometimes give the image that you are the model citizen?

P: No.

T: Do you give the image of being in control all of the time?

P: No.

T: Do you give the image of being a workaholic?

P: Yeah.

T: Do you try to appear like superman, like you can handle anything?

P: No

T: Do you secretly fantasize revenge?

P: Yeah.

T: Do you secretly judge or criticize other people?

P: Yeah.

T: Do you sometimes rehearse anger in your mind, what you would like to say to somebody, but then you do not say it?

P: Yeah.

T: Are you an escape artist? That means, if a situation happens that makes you angry, do you just go off fishing or go someplace else?

P: No.

T: Of these things, which do you feel are strongest for you? Rehearsing anger, not expressing it, secretly judging and criticizing, secretly fantasizing revenge, workaholic, self-reliant, even-keeled, mister nice?

- P: Well (stuttering) I pick this right here.
- T: Secretly fantasizing revenge.
- P: Yeah.
- T: Do you do a lot of that, more of that than other things?
- P: Yeah. Uh hum.
- T: Okay, good. What one comes after that? What's the next thing?
- P: Rehearsing anger.

When addressing hidden anger, the subject indicated that the experience of loss, in particular, feelings around the deaths of his mother and his brother had been difficult for him to express. These feelings were hidden and denied:

- T: What were the most upsetting points in your life?
- P: (Stuttering) Like, when my mother died.
- T: Two or three years ago?
- P: Uh hum.
- T: Before that what was the most upsetting thing?
- P: Well, well, really, you know, like my brother, too.
- T: When you get these feelings, do you have a tendency to deny, repress or hide the unwanted emotions? If you're feeling really sad, or hurt, in pain, angry, or lonely, would you deny those feelings?
- P: Yeah.

In session two, the therapist continued to gauge the subject's progress and reinforce it. She asked him if he noticed improvement, particularly in the area of mental rehearsals of angry scenarios. He said that he was no longer rehearsing angry responses to others:

T: Have you found that, as we've been working together the last week or two, these behaviors have been decreasing? Are you rehearsing anger in your mind less?

P: (Stuttering) Um, well, I mean not really. Like I be trying not to even do that.

T: So you do not even go into that space right now?

P: No.

T: That's great. Fabulous.

The following anger awareness exercise was developed to help the subject identify specific negative feelings that may have shaped his behavior in the past. In the first part of the exercise, he was presented with a series of descriptive words for anger and asked to identify the ones that he might use to describe himself. In the second part, he was asked whether he hid each type of anger from himself, expressed it impulsively, or contained it:

T: This exercise helps you recognize the various forms of anger, because there are many types of anger. Circle the words on this list that have to do with the feeling you've experienced. Then the next thing we want to know is if you've hidden it from yourself? Do you withhold it or do you express it in the sense that you lose control?

T: "Nervous"?

P: Yeah.

T: "Ambitious"?

P: No.

T: "Belligerent"?

P: No.

T: "Controlled"?

P: No.

T: "Hostile"?

P: Yeah.

T: "Fearful"?

P: Yeah.

T: "Guilty"?

P: No.

T: "Lonely"?

P: No.

T: "Overburdened"?

P: No.

T: "Annoyed"?

P: Yeah.

T: "Bitter"?

P: Yeah.

T: "Envious"?

P: No.

T: "Vengeful"?

P: Yeah.

T: "Violent"?

P: Yeah.

T: "Greedy"?

P: No.

T: "Irritable"?

- P: Yeah.
- T: "Quarrelsome"?
- P: No.
- T: "Anxious"?
- P: No.
- T: "Bold"?
- P: No.
- T: "Cranky"?
- P: Yeah.
- T: "Domineering"?
- P: No.

The anger words the subject related to were: "nervous," "hostile," "fearful," "annoyed," "bitter," "vengeful," "violent," "irritable," and "cranky."

When asked to indicate which angry feelings he held in, hid from himself, or expressed in an out-of-control manner, he said he hid "rage," "nervousness," "hostility," and "bitterness" and that he expressed "anger," "grief," "fear," "vengeance," and "violence." The only one he held in and did not express was "annoyance:"

- T: When you feel "angry," do you tend to hide if from yourself? Do you know it and withhold it, or do you tend to express it?
- P: (Stuttering) Well, yeah, well, I express it.
- T: "Rage." Do you hold it in, hide it, or express it?
- P: Well, well, hide it.
- T: Hide it. Okay. "Grief." Did you tend to hide it from yourself, know you feel it, but withhold it, or express it?

- P: (Stuttering) Express it.
- T: "Nervous." Hold it in, express it, hide it?
- P: (Stuttering) Hide it.
- T: Okay. "Hostility." Hold it in, express it, hide it?
- P: (Stuttering) Hide it.
- T: "Fear" or "Fearful." Hold it in, express it, hide it?
- P: (Stuttering) Express it.
- T: "Annoyed." Hold it in, express it, hide it?
- P: (Stuttering) What's that? Hold it in.
- T: Bitter? Express it, hold it in, hide it?
- P: Hide it.
- T: "Vengeful." Hide it, express it, hold it in?
- P: (Stuttering) Express it.
- T: "Violent." Express it, hide it, withhold it?
- P: (Stuttering) Express it.

In another part of this exercise, the subject was asked to describe recent situations in which he felt angry, cranky, or violent. Responding, he noted that he maintained a general level of irritation with other people. He discussed his desire for violence and revenge. Although he generally stopped short of violence, he described the kind of behavior he exhibited when angry, behavior that supported his wife's contention that he broke household items.

- P: Yeah, well, like: "I get angry with people who, you know, always think they right and stuff"
- T: Um hum.
- P: "But they don't know what they're talking about."

T: "Cranky"?

P: "Sometimes I get cranky, sometimes, with (stuttering), with people in general."

T: Even if they're not doing anything?

P: Yeah.

T: "Violent"?

P: Well, see, that's, "violence, (stuttering) you know, the same thing, people just be getting on my nerves, man, and then I want to, you know."

T: Then you want to what?

P: " I just want to hurt 'em."

T: What kind of thoughts do you have when you get violent?

P: Somebody, you know, like, when I get mad, 'cause I be thinking about trying to get back at the people, you know, that make me angry.

T: When you think about getting back, do think about hurting them physically? Do you think about setting up some scenario, like calling the IRS, and reporting them?

P: No, no, I, no, no, I'm talking about getting (stuttering), I mean, getting them myself.

T: With a gun or a knife or your hands or what?

P: No, no, (stuttering) with my hands or, like, a stick or something, not no gun or a knife.

T: Um Hum.

P: I don't want to go to jail.

T: What do you do when you get angry? Obviously you don't go out and bang someone over the head with a stick. So how does your behavior show? What do you do?

P: Well I curse them out, and, know what I mean, like, he did, I mean, like I slam doors or, or, (stuttering) well anything, you know.

T: Okay. So you do something in the house to make some trouble.

P: Yeah.

The subject associated the word "grief" with hidden anger. Asked to use it in a sentence, he described the loss of his mother:

T: Use the word "grief" or "grieving" in a sentence that describes you.

P: Um, "grief".

T: "Grief" or "loss" or "mourning."

P: Yeah.

T: Can you use that in a sentence?

P: (Stuttering) Yeah, well, like I said, you know: "I be grieving about, you know, like, my mother all the time, you know."

T: Do you miss her everyday?

P: Uh hum. Yeah. Yup.

T: So you think about her a lot?

P: Yep.

The focus of the session changed from anger awareness to body awareness with the therapist helping the subject identify the physical manifestations of anger and relaxation. In the following exercise, the therapist named a part of the body, asking the subject to free associate to it. There were no right or wrong answers; whatever the subject said about his body was acceptable. The objective

was for the subject to develop a conscious awareness of the physiological processes occurring in his body:

T: You need a conscious awareness of the sensations in your body. If you ignore your body you will not have indications of when it is well versus when it is not. In general, people don't listen to their bodies. Mostly, they're up in their minds.

P: Yeah. Right.

T: The best way to know your body is to develop a sensitivity to your physical states. To know when you're aroused, that means to feel fear, excitement, or anger. To know when you are feeling. To know when you're feeling pleasure, when you're feeling calm. And as you begin to notice your physical state, you will know when your body is relaxed and when it is negatively aroused. I want you to stand up. Stand here. Be aware of your feet. Plant your feet well on the ground and place all of your weight on your feet. Feel all of your weight on your feet. I'm going to name a part of your body, and when I name it, you are to tell me the first word or phrase that comes to mind.

T: Right this second, be aware of your head. What's the first word that comes to mind?

P: (Stuttering) Well, you know, I would say, after I, like, had that stroke, man, like sometimes I can't even think.

T: So sometimes you can't think that well.

P: Right.

T: But right now, right this second, you don't feel a need to think. What sensation is in your head?

P: (Stuttering) I'm, so I feel "good."

T: Okay, now go down to your neck. Your neck, your throat, and give me a word to describe your neck or your throat. It can be a sensation, It can be a color. It can be a feeling.

P: (Stuttering) Well, it feels "good."

T: Experience your hands. Tell me what you're sensing in your hands right now?

P: Like a little (stuttering) "tension."

T: Okay. Feel you legs. Both your upper legs, your lower legs, the calves, your knees. What do they feel?

P: "Tight."

T: Okay. Now go back up to the head, to the forehead. What word describes your forehead?

P: (Stuttering) It's "all right."

T: Okay. Your shoulders, what to they feel like?

P: "Tight."

T: Okay. Your feet, what are you feeling in your feet?

P: Kind of "tight."

T: Now go up to the jaw, this area here (pointing to the jaw). What's going on there?

P: It's "all right."

T: In your abdomen, the area down here (therapist points at her abdomen), what are you feeling?

P: "Hungry."

T: Your eyes. What do you feel around your eyes?

P: Kind of (stuttering) “blurry.”

At the end of the session, the subject identified the symptoms that occurred in his physical body when he experienced anger:

T: What are your physical symptoms? They may change, but in general what physical symptoms do you have when you get angry.

P: (Stuttering) My stomach and my head.

T: And what happens in your stomach when you get angry?

P: (Stuttering) I mean my stomach be tightening.

T: What happens in your head when you get angry?

P: (Stuttering) I, well, like, I mean, like, kind of, you know

T: Take your time.

P: When I can, even, if I get mad and stuff, man, like, I can't get my words out and my head be pounding.

Summary. The session began with a review of self-monitoring, homework, subject improvement in anger-management skills, and potential trigger points for relapse. The agenda was set and muscle relaxation was rehearsed (Craske et al, 1992; DiTomasso, 2000). In the psycho-educational section of the session, hidden anger, “anger-out,” and “anger-in” were addressed (Mann, 1999; Spielberger, 1999). The subject’s reticence in “speaking up” was approached as a potential problem. Anger awareness exercises included work with hidden anger, recent anger, identification of negative feelings, and discussion of the subject’s use of violence in the past ((Bilodeau, 1992; Mann, 1999; Weisinger, 1985). A body awareness exercise helped the subject become conscious of the difference between relaxation and tension (Craske et al., 1992). By the end of the session he

could describe the experience of anger cues in his body. Homework and self-monitoring were assigned (Dattilio & Freeman, 1992; DiTomasso & Colameco, 2000; Meichenbaum, 1994).

Session 3 (6/25/03)

Capsulation.

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week
3. Teach and Practice Staccato Breathing (Pierrakos, 1989; Wilner, 1999)
4. Explain How Cognitions Trigger Anger and EH (Beck, 1979; Ellis, 1977)
(psychoeducational)
5. Sequence of Anger Components for a Recent Anger Episode (Craske et al., 1992) (exercise)
6. Teaching Assertiveness (McKay et al., 1989) (psychoeducational)
7. Role-Play an Anger Event Using Assertiveness Skills (McKay et al.; Meichenbaum, 1996) (role play exercise and role reversal)
8. Anger Exposure Exercise, Using Visualization (exercise)
9. Assign Homework: Staccato breathing and Self-monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. At the beginning of the session self-monitoring was reviewed. The investigator reminded the subject that the Anger Events Inventory involved

"anger-in" as well as "anger-out." His self-monitoring should be based upon an awareness of tension in his body, even when he did not express anger verbally or physically:

T: You should fill out the forms, not just for the anger you express, but also for the anger, when your body gets tense, that you're holding in. For example, you may have a judgment or criticism, your jaw may tighten, or you may feel a burning sensation in your belly, but you don't say anything. So look for both forms of anger.

Asked about recent anger, the subject reported anger involving a coworker who made mistakes. The situation demonstrated that the subject became aroused when his expectations of the other person, his idea of what constituted good work, and his beliefs about what should be the case were frustrated. The subject's anger seemed to be triggered by "shoulds," "expectations" and "judgments" about others:

T: You named one incident this week. I think it was some anger that happened at work; is that correct?

P: Yes.

T: What triggered it or started it?

P: Well, like we were doing some work in the house and a guy, like, when he does work, he's just doing bad stuff, you know. I be trying to tell him that's all wrong, like he's doing it no good and stuff.

T: Uh-hmm.

P: And then like he still be trying to do the same thing, man. Then after I tell him, and then he'll do it, and then it comes out real good and stuff, man. But he's the kind of guy, like, he just do anything, I mean not, not real

good work, or, like, he just tacks something up. You know, I mean, you can't, you know, tack work like that.

T: Uh-hmm.

P: Even if he's painting and stuff, you know, I mean, he don't even paint right. He just puts the paint on the wall and then, you know, I mean, then you still see streaks and stuff ...

T: So what triggers you is that when you're working with this person, and he doesn't do it right, it doesn't look good?

P: Right, yeah.

T: So you have an idea in mind of what should be? You're not a perfectionist, but you know what would be ...

P: Right, right.

T: Acceptable.

The therapist asked the subject to assess the strength of his anger and the length of time he remained angry at the coworker. The purpose of these questions was to enhance the subject's anger awareness:

T: Exactly. Okay, so when that anger occurred with him, how strong was it?

P: Well, like, not really, I'd say around about five or six or something like that.

T: Okay. And how long would you say you felt the anger? I mean, did it last all day?

P: No, no, I think about an hour.

Asked if this incident with his coworker demonstrated an improvement in his coping skills, he responded that in the time between the second and the third sessions, he stopped himself from walking off the job in anger when things did

not go his way. This new behavior, different from how he handled similar situations in the past, was reinforced:

T: Okay. Now did you handle this anger differently than you might have in the past?

P: Sure.

T: How did you handle it differently?

P: I'm going to have to tell him, you know, about himself, and this, that, and another.

T: Uh-hmm.

P: And see, and then I started to, I started to walk out, but I said "no," you know, "because I want to get the work done."

T: Uh-hmm.

P: You know, I mean, before, man, like I would have said, you know, "the hell with it."

T: Okay. So that's good. So you were able to control your behavior?

P: Yeah.

In the next part of the session, relaxation and breathing exercises were emphasized. The subject was introduced to Stacatto Breathing in the third session. This breathing was created to free up stagnant energy in the body by John C. Pierrakos, M.D., who developed Bioenergetics and Core Energetics, two body therapies. After teaching the subject how to do the breathing (for directions see Appendix J), the therapist explained its purpose and the time of day that it is most often used (Pierrakos, 1989; Wilner, 1999):

T: It's called staccato breathing and it's designed to release tension from your body: your chest, your back, your diaphragm, your abdomen and your

pelvis. And it's often utilized in the morning, but you can also do it in the evening. It facilitates a flow of energy. It releases contractions in your body. One of the reasons you would use it in the morning is that when you sleep sometimes your muscles get tense. Actually, when you're sleeping, the muscles can tense. So it releases all that tension that you wake up with.

P: Yeah.

T: And also sometimes when we sleep, our brains release chemicals into our bloodstream. Some of them are like toxins or poisons, so that they upset us. That's why, sometimes you even wake up and you're in a bad mood. Your brain may have released chemicals into your bloodstream.

At the end of the Stacatto Breathing exercise, the subject was asked to describe his experience, emphasizing any changes he was aware of in his body. This line of questioning helped him become more conscious of the experience of relaxation versus tension in his body:

T: What was your experience doing it?

P: Well, I see that my breath, you know, my breath and my chest, you know, I'm trying to find the word. I mean, it's like, I know that I can feel it, you know, when I'm laying down.

T: Uh-hmm.

P: And my back, you know, because most of the time, like, I do that (subject stretches his shoulders back), like every day, for two minutes like that.

T: Uh-hmm. Right, so you noticed that helps when you do that.

P: Yeah.

T: Okay. I'll be curious about your experience: if you feel it makes you less tense, if you're more in touch with your body. It's a breathing that we use for tension and releasing contractions in the body. Obviously, it's not your normal method of breathing.

P: Right.

After the breathing exercise, the focus of the session changed to a psychoeducational emphasis. The role of thinking in anger-management was explained to the subject. It was important for him to understand the relationship between his thoughts and his anger; how his thinking affected his level of arousal. His thoughts could determine whether he became angry, the intensity of his anger, and how soon he was able to regain control:

T: We know that anger and fear result from physiological arousal of the body. But physiological arousal, itself, is not enough to account for your anger. We find that your thoughts also create anger. So how you interpret or think about an event or situation can contribute to how disturbed or upset you get. When a situation occurs and you get angry, your thoughts have actually started the ball rolling. So, for example, if you had a thought about the guy you work with, such as: "well, he's doing this to spite me" or "he doesn't care about me or this job."

P: Yes.

T: Then you know those kind of thoughts are going to get you pissed off.

P: Yes, right.

The subject was provided with explanations about personality types known to have high anger due to their habitual thought processes (Pierrakos, 1974). These

personalities are associated with the need to attain perfection, power, and fair treatment. When these needs are not met, anger and fear result:

T: And people who are very concerned about injustice experience the most anger. So people who are always saying "This isn't fair" or "Somebody is doing something that's going to hurt me," those people get more angry than other people.

P: Yeah.

T: People who are perfectionists have more anger than other people, because they always want things to be perfect.

P: Yeah.

T: People who need to be in authority or in power get more angry than other people, because if these people don't do what they want, they end up getting angry.

Asked to describe a recent anger experience, the subject chose one that involved a long wait for a table at a restaurant, following his grandson's eighth grade graduation. The cognitive components of his anger were based on his expectations, judgments of how others should have behaved, and thoughts about what should occur in the restaurant business:

P: I mean, man, and you know, like, when I'm ready to eat, I like to eat, you know, instead of waiting for a long time to eat something, you know.

T: Right. So the long wait for the table triggered your anger?

P: Yeah.

T: And the long wait for them to bring the food triggered your anger?

P: Correct. Right.

T: When you suggested McDonald's, people didn't seem to want to get up and go? I mean, did that trigger your anger?

P: No, no, no.

T: And who was your anger directed at? Was it at your daughter for choosing this restaurant, or was it at the restaurant itself?

P: No, it was, I mean it was the restaurant. I mean to me it's them at fault.

T: Uh-hmm.

P: You know, because I know it was like a hundred people around there, you know, just to eat.

Using this incident as an instrument by which to further explore the subject's anger, he was asked to describe the physical symptoms he experienced when his anger was triggered in the restaurant. In particular, he was aware of his hands shaking. The therapist helped him develop the conscious awareness he needed to change these behavior and thinking patterns:

T: Right. Okay. What were the symptoms in your body, that you were aware of?

P: Well, I mean my, like, my head and my hands were shaking, you know. So I went outside and I smoked a cigarette and, you know, just waited, man, because like they was in the lobby.

T: You said you had physical symptoms, something about your head and your hands?

P: Yeah.

T: What was going on in your head? What did it feel like? Was it hot? Was it tense?

P: Yeah, yeah, kind of tense, yeah.

T: What about your hands; were they were moving a lot?

P: Yeah, yeah.

T: So show me what happens with your hands when you get angry?

P: Like this, (subject demonstrates his hands shaking).

P: Now some people who was there, I mean, they came in, like, they wanted a table for, like, three or four or five. But like, we had seven, you know.

We had to wait to see if the big table was ready.

The therapist explored the cognitive basis for the subject's anger with him, emphasizing the effect of "should thinking," that was so apparent in the restaurant incident, on his behavior. The use of "should" promoted an angry reaction that could affect his blood pressure and cardiovascular health.

Therefore, the subject was directed to look at his use of "should" in this situation:

T: Okay. Now, prior to your anger, you're in this restaurant. You're waiting. Even before an hour and a half is up, you had to be having thoughts, something like "they should be faster" or "they should have hired more people to handle this crowd." What kind of thoughts were you having?

P: Well, really, like the lady on the door, I mean, she got the numbers for how many people would be at the tables.

T: Uh-hmm.

P: So like we had seven people.

T: Uh-hmm. So let me interrupt. What was the thought that you had? What did you think the restaurant should have done differently that would have made it better for you?

P: To me, like, like, I think that "when people come there, they should have tables and stuff for them," I mean, "because they know there's a big day."

T: So they should have been better prepared?

P: Right, right, right, right.

T: The thought was that: "they should have had more tables set up for larger groups"?

P: Right.

T: Because families were coming in.

P: Right, right, right, right, right.

T: So the thought began with a "should;" "they should have been prepared," "they should have done a better job." Those are the kind of thoughts that got you going?

P: Right.

T: Like you had expectations?

P: Right.

T: One was that the restaurant people should think ahead.

P: Sure.

T: You're saying "sure," but I want you to know that rather than saying: "it would be nice if they had thought ahead," you say they "should," and that "should" begins to get you angry.

P: Yeah, yeah, yeah, because, I mean, don't forget, I mean, that's their business.

T: Uh-hmm, okay. So the thoughts that seemed to get you irritated, annoyed, and angry had to do with your "shoulds." You know, when you think people "should" do what they're supposed to do, like, you say: "that is their business"?

P: Right, right, right.

Following the anger awareness exercise, skill training was introduced.

Assertiveness was taught because when people are able to exercise appropriate strategies to achieve their desired objectives, they are less likely to experience frustration, helplessness, fear, and anger. In this session assertive behavior was defined and the restaurant situation was used as a model where more appropriate coping behavior could have been exercised. The therapist modeled assertive communications, taking the subject's part with the restaurant manager.

T: Assertiveness is expressing yourself in a way that protects your rights and it also doesn't violate other people's rights. So it's a way of telling people what you want without getting angry, because if you get too angry, you're actually violating other people.

P: Oh yeah, yeah.

T: When we practice assertiveness, we don't blame or judge another. So, for example, in the restaurant, if you were going to be assertive, you might have gone up to the manager and said: "look, we've been waiting a long time, can you put two tables together, or what do you suggest?" You wouldn't have gone into blame: "well, it's your business, you should know how to do it, blah, blah, blah." So assertiveness is doing something, but in a tactful way, without going into blame or judgment.

In a second example of assertiveness, the subject's neighbors were used, because their behavior caused him tremendous stress and tension. A role-play was introduced in which the therapist took the role of the unruly neighbors. The subject practiced assertive communications in which he was asked to state the other's behavior that bothered him, how he felt in response to that behavior, and what he would prefer to happen instead:

T: All right, for our purposes today, we're just going to practice being more assertive with these people. So let's pretend I'm one of the people and I'm sitting on your steps talking, making noise. What would you say to them?

P: Well, like, I told them before about ...

T: Tell me, because I'm one of them right now. I'm sitting on your steps (therapist begins to sing and make noise).

P: Well, I'd say: "Hey, like, can you please stop that noise and, like, get off my step, man, because, like, I be trying to watch the TV and, I mean, I'm trying to rest, you know."

T: The only thing you left out was your feelings. You told them that you wanted them to get off your step.

P: Right.

T: And you gave them the fact: "you're making noise."

P: Right.

T: "I'm trying to watch TV and I'm trying to rest."

P: Right.

T: So you need to add a feeling, such as "it's frustrating to me," or "I feel annoyed."

P: Right.

T: Let me hear you say it.

P: "I'm annoyed and I can't rest."

In a role reversal following the role-play, the therapist took the role of the subject and asked the neighbors to move from the steps. The role reversal modeled assertive behavior appropriate in situations like those involving the neighbors.

P: All right, well, like, I be on the step cussing and drinking and stuff, man, all loud and stuff.

T: Okay, so I'm going to come out of my house and I'm going to say "hi" or "yo," whatever you say, and I'll say something like: "I know that it's really crowded over there and you need some space and some air, but I really need to rest. As you know, I'm not well since my stroke."

P: Right.

T: "I'm asking you to leave, because you're really making me uncomfortable and I can't get my rest."

In another intervention, following the role reversal, the therapist gave the subject feedback using her observations of his behavior when he was angry. Feedback was used to shape the subject's behavior. The feedback concerned his lack of eye contact, his tone of voice, and his facial expression, all of which reflected a negative attitude. The object of the intervention was to help the subject understand that his nonverbal behavior may have created further antagonism, adding more fuel to fire:

T: The one thing I noticed when you were you and I was the person was that you didn't have eye contact with me. You said what you wanted well, but you didn't really look at me. Is that typical for you, that you don't look at a person when you're talking to them?

P: Really, well, really like, like sometimes. I mean, like, if I get mad, I mean, if I get mad with that person, like, I'll be looking in their eyes and stuff, man, and so I mean then I may turn away and stuff, because, you know, I used to be, man, I would probably look at somebody and they look at me, man, and then ...

T: Then there could be a big fight?

P: Yeah, yeah and stuff, man.

T: So you may be better off not looking at them when you're really mad.

T: So try it one more time. I'm sitting on your step. I'm cursing. I'm drinking. So what are you going to say to me?

P: "Hey, can you please get off my step, because I'm trying to sleep" or "you know, like I'm watching TV."

T: Good. I'm interrupting you, because you're saying it, but you're saying it with an attitude (the subject had an angry tone of voice and an aggressive facial expression). The attitude has irritation. Can you say it as if you're a friend of theirs?

P: No.

T: Well, you need to try it.

In a third role-play involving assertiveness, the subject attempted to communicate with his coworker. The therapist continued to shape the subject's behavior using feedback, indicating that he portrayed a negative attitude through his tone of voice and facial expression:

P: Sure. Hey, hey, like, I'd say, "hey, something's wrong, I mean, listen, I'm going to do something else, man, because I mean, because you're painting, like, too long. We can finish on one thing and then we could go back to the wall and stuff, man. I mean, because of all the time that you're taking on this wall, we could have been doing that other thing."

T: Now lose your attitude at the end. Your attitude came in at the end when you got judgmental. "All the time we spent on the wall..."

P: Yeah, yeah, yeah.

A new anger management technique involving the exaggeration of situations and details that people are often unaware of when they are in high states of arousal was introduced. The directions were that the situation with the neighbors be exaggerated and described and experienced in detail. The objective was to help the subject focus on the triggering situation and remember it in more depth. This intense focus was followed by an additional intervention that allowed the subject to practice his new coping mechanisms:

T: So, basically, what I'm going to ask you to do is think about them. Shut your eyes a minute, and I want you to think about the 15 people who live in the house. I want you to think of a few of them. How many people are normally on your steps at one time: three, four, five, two?

P: About, like, three or four.

T: So I'd like you to imagine three or four of them sitting on your steps.

P: Uh-hmm.

T: Hear the noise they're making. Now, as I talk about this situation, how clear is it for you? If you're not able to have an image, if you can't really see them, that's a zero. If you can see them very clearly, that's an eight. So how clearly can you see them, right now?

P: An eight.

In the next step, the subject was asked to assess the strength of his anger and to identify a behavior he could engage in to cause it to decrease. In this case, he utilized a combination of assertive behavior and distraction to bring his anger score down. The therapist reinforced these new skills and she also suggested he use his thoughts to soothe and distract himself:

T: So they move for a little bit. See them move off for a little bit and just mark your feelings. Do they change, or are you still up at an eight in terms of anger?

P: Well, like maybe a five.

T: So you got three points down. Did you get three points down because you spoke to them and asked them to do something different?

P: Yeah, yeah.

T: Okay, but now at five, I want you to find a way of calming yourself more. Perhaps by something you think: "I can live with this," "they'll move soon," or "I'll just turn my TV up louder." You have to find a way to bring yourself down from a five. Bring it down to a three.

P: Yeah, yeah, that's what I do. Like I turn the TV up. I mean so I don't have to hear them.

T: That's good. That's what we call distraction. That's very good that you do that. So what could you tell yourself to bring this from a five to a three? What can you tell yourself, so you're not stuck at a five in terms of your anger? You know you're not going to say something that is not the truth.

In the final few minutes of the session, "self-talk" was emphasized. The subject learned that he could use self-talk to change his thought processes so he would not be as readily aroused as he had been in the past and he would not leap to anger as quickly:

P: Well, like, well, like I just look at them and then just don't say nothing.

T: Okay, but what would you be saying to yourself to calm down?

P: Well, really, like you don't want to hear that, you know. I mean, if I tell them what I have to tell them nicely, and go back in the house again, you know.

T: That's one part of it, is telling what you have to say nicely. The other part is calming yourself. We call it self talk. What words do you have to say to yourself to calm yourself down?

P: "Don't let them bother me."

The therapist reminded the subject that he could employ two interventions at once. He could calm himself using self-talk and he could also practice assertive communications. Modeling self-talk, the therapist provided an example, stating: "I won't let their behavior affect my health:"

T: But I would also have to find a way to calm myself. Maybe I would tell myself that, as much as I don't like the situation, I'm not going to let it affect my health.

P: Right.

T: And each time I get angry, I'm not hurting them, I'm hurting myself.

P: You're right.

T: So you need to find something you can say to calm yourself. So what might that be?

P: I mean, so what you're saying is, I mean, just don't say nothing?

T: I'm not saying that. I think both things are important. I think you have to be assertive, and I'm also thinking, at the same time as you're assertive, you have to be saying to yourself something to calm down, such as: "Why am I going to let these people make me angry, when it's only hurting me?"

At the end of the session, the therapist suggested a combination of distraction and assertiveness to manage anger. The subject could request his wife's help with the situation with his neighbors and go upstairs and turn on the television to calm himself. He could combine mechanisms to reduce his anger output:

P: Like, I go right in the middle room and just watch TV. So I mean they're making noise and stuff, excuse me, but then my wife can deal with it, because, like, she be downstairs all the time watching TV.

T: So can you, in your mind's eye, see yourself asking her to deal with this? Maybe you can say: "I just chased off the last group, would you tell this group to leave?"

Summary. At the beginning of the third session, self-monitoring and homework was reviewed, the agenda was set (Dattilio & Freeman, 1992; Meichenbaum, 1996), and the subject's improvement in managing his anger was reinforced. An anger awareness exercise involved a review of a recent anger incident that was triggered by the subject's "shoulds," "judgments," and expectations (Meichenbaum, 1996). The breathing and relaxation section introduced Stacatto Breathing and body awareness was established with the description of the resulting relaxation experience in the body (Pierrakos, 1989; Wilner, 1999). The psycho-educational focus examined the relationship between thought and anger, emphasizing the thinking of certain personality types who experience high anger (Beck, 1979; Ellis, 1977). A physical consequence of anger, trembling, was illustrated. Various role-play situations and role reversals were practiced, teaching and modeling assertive communications (McKay et al., 1989), and a feedback intervention was introduced that mirrored the subject's anger.

Other interventions included exaggeration of details, assertiveness skill training, distraction, and self-talk (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994). Home work and self-monitoring were assigned.

Session 4 (7/1/03)

Capsulation.

1. Set the Agenda (Dattilio & Freeman. 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week
3. Review Staccato Breathing and Make Adjustments (Pierrakos, 1989; Wilner, 1999)
4. Teach Four Cognitive Errors: Overestimation, Catastrophizing, Shoulds and Oughts, and Blame (Craske et al., 1992; McKay et al., 1989) (psychoeducational)
5. An Overestimation Exercise (Craske et al., 1992)
6. A Decatastrophizing Exercise (Craske et al., 1992)
7. A Should/Ought to Exercise (McKay et al., 1989)
8. Blame, Anger, Truth Exercise (Pierrakos, 1987)
9. Assign Homework: Staccato breathing and Self-Monitoring (Dattilio & Freeman. 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. In session four, Staccato Breathing was reviewed (Pierrakos, 1989; Wilner, 1999), one of the three relaxation and breathing exercises taught during the protocol. Created to release tension and stress in the seven segments of the

body, Stacatto Breathing was introduced for the first time during the prior session. The subject was asked to practice it three times for homework. In this session, he was given an opportunity for further practice and questions:

T: And remember this exercise can be done lying down or sitting up in a chair. So breathe in: one, two, three, four, five. Arch your back. Good, good, good. Okay, now exhale, "hah," and as you do that, let out all your breath, fold your shoulders in towards your heart, and squeeze tight. In fact, tighten your belly as well as your shoulders, tighten everything, and then relax, let go. Okay, so breathe in again. Breathe in: one, two, three, four, five. Arch your back. Feel the pull in your spine. Feel your shoulders going all the way back toward the wall. Hold it and then give a nice big exhale, "hah." As you do that, pull your shoulders in, tighten your chest, your shoulders, and tighten your belly as well. Squeeze tight, tight, tight. And then let go, release, relax, let go.

In the psychoeducational section of session four, four types of cognitive errors were emphasized: "overestimation," "catastrophizing," "shoulds and oughts," and "blame" (Craske et al., 1992; McKay et al., 1989). These errors are the products of distorted thought processes and based on mistakes in perception or interpretation of situations or behaviors. Cognitive errors often lead to high arousal, and negative emotions, such as anger, fear, jealousy, and envy. An exercise involving each of the cognitive errors was presented in the session. In this example, the therapist showed the subject how an exaggeration of an issue that bothered him led to more anger and upset, especially when he presented it to self and others as a catastrophe, "one of the worst things that could possibly happen:"

T: The second kind of error is when you catastrophize, and that's when you blow something out of proportion, like, for example, if you think something which is slightly negative is terrible, then you're going to be really upset. So when you catastrophize, you're not being very realistic. So, for example, if you were to say "well, if I don't get my license back, that's the worst thing that could ever happen."

P: Right.

T: Well, obviously that's bad, that's unpleasant.

P: Right.

T: It will make your life more difficult.

P: Sure.

T: It will be frustrating.

P: Sure.

T: But you know, it's not the worst thing that could ever happen. I mean, you know, a lot worse things could happen.

The use of "shoulds" and how they lead to high arousal and high anger was also discussed. The therapist provided feedback to the subject concerning "should" thinking that she had observed him use in prior sessions. An intervention helped the subject replace "should" with an alternative thought pattern, "it would be nice if:"

T: Another behavior that leads to problems is the use of "shoulds." If you have a lot of "shoulds" in your thinking, you're going to run into trouble with your anger. This is something I do notice with you. You sometimes think with "shoulds," like, "people 'should' not be sitting on my steps,"

“the waitress ‘should’ have seated us within a reasonable amount of time,” and “my wife ‘should’ not be on the phone.”

P: Uh-hmm.

T: So tell me where else do you have a “should” in your life? Do you think the guy you work with “should” not make so many mistakes?

P: Yeah.

T: Okay, so let's use that example.

P: Sure.

T: Now if you knew that thinking that way was bad for your health: that your health, your heart, and your blood vessels are going to suffer because you had a “should” for your coworker, how could you change your thought? Instead of thinking to yourself, “he ‘should’ do it this way,” could you think to yourself, “it would be nice if he did it this other way.”

P: Sure.

T: “But if he doesn't do it, I need to accept it or ask him to change it.”

P: Right. Yeah, well, see, all right. I would figure the same thing.

T: Uh-hmm.

P: If he messes up: “all right, that's on him.”

T: So that is different from, “he ‘should’ do it the way I think he ‘should’ do it.”

P: Right, right, right.

The subject was also educated about “blame.” He was shown that negative consequences for the receiver result from blame, in the form of shame and humiliation. In addition, the blamer suffered negative consequences, such as

high anger and health issues. The intervention involved substituting empathy and understanding for blame.

T: Okay. The other thing we want to get away from is blaming people. If I say to somebody, "you did it wrong; it's your fault," that's what we call blame. That's different from saying "I'm really angry and unhappy, because it's not what I wanted." What's the difference between those two statements?

P: Well, the last one is, I mean, I mean, you're trying to be more nice.

T: Uh-hmm. I said I was angry, but I didn't make the other person feel like an idiot.

P: Right, right.

T: Often, what we do, when we're angry, is try to humiliate the other person, and make him or her feel stupid and dumb, because then we feel better.

P: Yeah, yeah.

T: Now we do feel better for a minute when we act like that.

P: Sure.

T: Then later we feel guilty.

P: Right.

T: So, what we want to do is get away from blaming other people, and just recognize other people are going to do things that upset us, because they see things differently.

P: Right.

In an exercise designed to demonstrate and teach the consequences of overestimation, the subject overestimated the number of mistakes his coworker made, saying that he believed his coworker made mistakes "most of the time."

However, when the therapist employed a scale by which to estimate the number of times the coworker made a mistake, the subject thought mistakes occurred 25 percent of the time. By using the scale, he was able to correct his original overestimation in the direction of a more realistic number. By being more realistic, it was likely that his arousal, anger, and frustration decreased. This use of a scale exemplifies how evidence can be collected to correct cognitive errors:

T: And in overestimation, people tend to overestimate negative events. They think more negative events are going to actually happen than do actually happen. What's a typical event that would normally get you angry?

P: Well, well, probably, the guy, like, I work with.

T: Okay. So what would he do that would typically make you angry?

P: I mean, he just, I mean, he just do bad work.

T: How often do you work with him?

P: Maybe around every day

T: Would you assume that each day he's going to make the kind of mistake that will make you angry?

P: Well, really, I mean not every day, but most of the time.

T: Okay.

P: I mean because he wants to do work so fast and stuff, man, you know, I mean that's what gets me.

T: That he works very quickly?

P: Yes.

T: Sloppily.

P: Yeah, now you're talking.

T: So let's make a scale from zero to one hundred. I'm just going to draw a line down here. Now, here's this worker. Let's say you were going to work with him tomorrow.

P: Okay.

T: Do you think there will be absolutely no problem in his work, a zero, or do you think he will definitely have a problem in his work, a hundred? Where do you think he's going to fall on this scale tomorrow? What's your guess about his work for tomorrow?

P: I mean, at least about 25.

T: 25 percent?

P: Yeah.

T: Okay. So you think probably about here?

P: Right.

T: That he'll make a mistake.

P: Right, right, right.

T: So you are saying that there is a 75 percent chance he won't make a mistake?

P: Right.

T: And a 25 percent chance he will. So that sounds like you're being pretty realistic when it comes to him, that you are no longer overestimating (Earlier the subject said his coworker would make mistakes, not every day, but most of the time).

P: No.

Continuing with the topic "overestimation," the therapist emphasized the necessity of collecting evidence before making assumptions. She asked the

subject to look for concrete, specific, and observable information before he made assumptions, judgments, and interpretations. Problem-solving, a skill useful in the management of anger and a coping mechanism as well, is based on the ability to seek out verifiable information prior to making a decision. The following intervention focused on the subject's ability to collect evidence:

T: Now, what kind of evidence do you use to measure his work? When you say it's sloppy, what do you look at?

P: And plus, like, maybe that other guy might be in the next room.

T: Uh-hmm.

P: But then I have to go in there and look and see, you know.

T: So you're supposed to supervise him?

P: Yeah, yeah.

T: And when you are supervising him, what do you look at?

P: I mean his work. I mean the walls or the floors or paint.

T: Okay.

P: You know.

T: So how he applies paint?

P: Yeah.

T: If he hammers nails, whether they're in the right place?

P: Right.

T: Or in straight?

P: Yeah.

T: So in this case, it's pretty easy to find the evidence, if he's doing a good job or a bad job because it's very visible.

P: Right, right, right.

The next exercise focused on “decatastrophizing.” The subject provided an example of what he considered to be a catastrophe: since the stroke, his mind had not been as sharp as it used to be. When the therapist utilized a scale to help him estimate his ability to cope with this problem, he was able to see that the problem was not as bad as he initially thought. Using the scale, he corrected his fear about his loss of memory. By making it into a smaller problem, employing a more realistic approach, he could decrease the amount of arousal and anger that he had formerly experienced in relationship to this problem. This use of a scale exemplifies how evidence about one’s ability to cope with problems can be collected to reduce stress and tension. It helped the subject become aware that he had found some ways to cope with the perceived decrease in his mental abilities:

T: Now let’s try a decatastrophizing exercise. Can you think of something that has made you angry in the last 10 years?

P: Well, really, like, I really don't know, like, I mean like with that stroke that I had, man, I mean like my mind be soft, I mean, you know, with my mind and stuff, man. Just like this morning, like, I mean, I didn't have my phone on me, right?

T: Uh-hmm.

P: So I got my phone. So I was calling my wife to tell her, you know, that I left my phone. So then, I mean, like, I had to go in my pocket and then get the phone number (the subject does not always remember phone numbers when he needs them; therefore, he carries them in a notebook in his pocket).

T: Right.

P: I mean, then I went in my wallet and then I got the number.

T: Uh-hmm.

T: You are telling me that it makes you angry that, since you had the stroke, your mind is not as good.

P: Yeah.

T: And now you have to carry things in your pocket to help you. You don't remember the way you used to remember?

P: Yeah, right, yes.

T: I'm going to give you another scale where zero means you can't cope and one hundred means you cope well. Your mind is not as sharp as it used to be, and you can't remember things the way you used to, can you cope with it or not? Where are you on this scale of coping?

P: I think about half.

T: So you're kind of in the middle.

P: Right.

T: In some ways you don't cope that well with it, but you're ...

P: Right.

T: But you're starting to cope better?

P: Right.

T: Quite a bit. Okay, now, given that loss; I mean, it's painful to lose an ability.

P: Yeah.

After using the scale to establish that the memory problem was not as bad as he initially thought, the therapist helped the subject become aware of mechanisms he was already utilizing to cope with this problem in his daily life. In cognitive-behavioral therapy, clients are taught coping mechanisms to help

them deal with life problems. Those with fewer mechanisms for coping have more mental health problems (Nezu et al., 1998):

T: And you're not as sharp as the way you were. How are you coping with it? What are you doing to help yourself live with this?

P: Well, like I just have to do what I got to do. I mean that's the only thing I can do.

T: And what do you do? One thing you do is you reread parts.

P: Right, right.

T: The other thing you do is carry numbers and things you need to remember in your pocket.

P: Right, right.

T: Anything else you can do?

P: Uh-uh.

T: Well, how do you work with your mind to keep it as sharp as possible?

P: Well, what, well, well, I mean I've been doing work, I mean for many years. I mean, when I be looking, I mean, just like I look at the work, and then I'll see what's got to be done and, I just do it.

T: So that keeps your mind sharp.

P: Yeah.

An intervention to help the subject decrease his use of "shoulds" and his tendency to "blame" others when he experienced disappointment, involved increasing his empathetic behavior. The "empathy" intervention focused on his next-door neighbor. The subject explained that when he thought about the woman who lived in the next house, he felt frustrated. His expectations for her behavior were not met. The resulting gap between his standards for her behavior

and her actual behavior led to disappointment, anger, and arousal on his part. The purpose of this exercise was to build empathy and understanding, and to change the standards that the subject used to judge his neighbor. Empathy was increased through questions shaped to enhance the subject's understanding of his neighbor's situation and life choices:

P: Yeah. Yeah, well, well, like, I mean, the woman who married the guy there. They're always arguing and stuff, man. Like yesterday, like, I was in the middle room, and, man, I hear them, I mean, in the yard, arguing and stuff like this. So I would tell my wife: "damn, I mean every day, man." I mean like he could come there and say "hi" and stuff like this. And plus, I mean, the boy is not working or nothing, man. He just starts a fight, man. So like I told her, so she said: "well if that was me, I would have put him out" and stuff, man. He always comes in the house ...

T: Right.

P: Arguing and stuff, man.

T: So the person you're thinking about right now that you find annoying or irritating is his wife, because she doesn't put him out. She puts up with this?

P: Yeah, yeah.

T: I'm going to ask you some questions about her and I'm curious about your answers. The first question is: "when you think about her, what do you think influences her to act this way?"

P: Because I think that, like, she's one of those women that have to have a man living with her.

T: So she feels like she's not as much of a woman, if she doesn't have a man?

- P: Right, thank you. Yeah, I mean because since, like, they moved there, the men, like, she's had about 10 or more guys with her. But then she found this nut, and then they got married.
- T: So her need is to always have a guy, because she feels less if she doesn't have one.
- P: Yeah.
- T: I'm going to ask you another question about her. What beliefs do you think she has about life that influence her to act this way? What are her beliefs about life or herself that make her believe she needs to have a man?
- P: Well, I mean, because, I mean, she's just one of those people ain't what you call "bad."
- T: Uh-hmm.
- P: I mean, because she lets people take advantage of her.
- T: So basically her belief is that she needs to please other people?
- P: Right, yeah, right.
- T: And do what they want?
- P: Thank you. I mean plus, I mean, like, she's been like that for years.
- T: So what do you think happened to her in her life history? Maybe it happened to her as a child, and that might have influenced this behavior?
- P: No, well, see, I think her mother was the cause of that too, man, because, I mean, her mother always had a lot of people in the house. I mean, so she could, like, get some money. So after her mother died, I mean, she was doing the same thing.
- T: Okay.
- T: So this gal, in a certain sense, is modeling her life after her mother's?

P: Uh-hmm.

T: Okay, now the reason we're talking about this is that when you have a lot of "shoulds," you tend to lack empathy, to forget what it is to be in someone else's shoes. So if we said she "shouldn't" be with this guy, or any guy, it wouldn't fit her, because this is all she knows? She doesn't feel like much of a person, if she doesn't have a man.

A final exercise was introduced concerning blame. The subject was asked to differentiate blame, a judgment of wrongdoing, from anger, an emotion. He was also requested to identify the positive aspects implicit in a negative situation. He needed to develop the capacity to see the positive in situations, even those that he experienced as negative. In this exercise, he had to move between three chairs. One chair represented blame for the coworker; another reflected the expression of anger without blame in reference to the coworker's behavior; and the third chair affirmed his appreciation of the coworker:

T: Okay, we have three chairs. I'm going to name the chair you're in "the blame chair" and this chair over here, the pink chair, will be "the angry chair," and the blue chair will be the positive chair, or "the positive truth chair." So let's take the guy you work with. Okay? Now if you were in the blame chair, if you were going to blame him, what would you say?

Imagine that's him over there (the therapist points at the wall across the room). What would you say to him if you were going to blame him?

P: Well, like I would tell him: "man, I mean, you're doing the tiles wrong."

T: "You're doing it wrong, man." Tell him.

P: Right.

T: What would you be thinking? Would you be thinking: "you stupid idiot.

P: No, no, no.

T: You wouldn't be thinking anything?

P: No.

T: Just: "You're doing it wrong."

P: Right, right.

T: Move over to this other chair. Now in this chair, you're going to say you're angry or you're annoyed or you're irritated without blaming the person. How would you say that?

P: Well, I'll just tell him (stuttering) that he's wrong.

T: No, then you have go back to that chair (the blame chair). Go back to the blue chair. That's the chair where you can tell him "you're wrong."

P: Okay.

T: In this chair, you have to find some other way to say it without blame.

T: So blame him again. You're back in "the blame chair".

P: Yeah, well, "you're doing the tiles wrong, you know."

T: Okay, now try this chair again. In this chair, you cannot tell him anything about him. You can't tell him he did it wrong.

P: Yeah, well, I mean, "Can you do the tiles again?"

T: Great. "

T: Right there you became less humiliating to him.

T: Now go over to that other chair, all the way at the end. And from that chair, which is the positive chair, I want you to tell him something nice about himself.

P: Well, I mean, I mean, you want me to tell him that he's doing a, I mean, a good job?

T: Only when he does.

P: Yeah.

P: Yeah, well, yeah, well, like, I mean, like, some jobs, I mean I mean he does a good job.

T: Uh-hmm.

P: I mean sometimes, you know.

T: So you could say: "Sometimes I like working with you. When you do a good job."

P: Right. "Like when you do a good job, I like working with you."

Summary. In session four, the agenda was set (Dattilio & Freeman, 1992; Meichenbaum, 1996), homework and recent anger were discussed (Meichenbaum, 1994), and Staccato Breathing (Pierrakos, 1989; Wilner, 1999) was reviewed. The psychoeducation component introduced four cognitive errors: overestimation, catastrophizing, shoulds and oughts, and blame (Craske et al., 1992). Exercises designed to work with and transform each of the cognitive errors were introduced. Collecting evidence, developing empathy, and learning to be positive in negative situations were emphasized (McKay et al., 1989; Pierrakos, 1987). Homework and self-monitoring were assigned (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982).

*Session 5 (7/8/03)**Capsulation.*

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week
3. Teach the Meditation Exercise (Benson, 1993; McKay et al., 1989)
4. Discuss The Role of Irrational Beliefs in Hypertension (Craske et al., 1992; McKay et al., 1989))
5. Review Irrational Beliefs that Trigger Anger (McKay et al., 1989)
6. Learn Coping Statements to be Used with Irrational Beliefs (McKay et al., 1989)
7. Learn a Nonconfrontational Way to Express Negativity (McKay et al., 1989; Weisinger, 1985)
8. Experience an Anger Exposure Exercise With the Therapist in the Role of the Trigger
9. Assign Homework and Self-monitoring (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. At the beginning of the fifth session, the subject recounted a recent situation involving anger. He described an incident in which the police were using more force than was warranted in order to restrain a man. The therapist listened to the story and encouraged him to share his thoughts, hoping to achieve a better understanding of the beliefs and images that triggered the subject's anger. In particular, the subject's belief that people in authority abuse their power was demonstrated in this situation:

P: I mean, I saw that the cops, they beat, laid one guy up and they had him cuffed, you know. So, the guy, so they put him in the back of the wagon.

T: Uh-hmm.

P: And then the guy started (stuttering); he didn't want to go in, in the wagon.

T: Uh-hmm.

P: And then all the cops started beating them and stuff. Yeah, I mean, you know, the whole bunch of cops, man, and stuff, man. I mean, like, all the people, you know, ask what's wrong and stuff, man. So I was there, right there, man, and I'm saying to myself, I'm saying, you know, "why they do that?"

T: Right.

P: One guy.

T: Right, you're saying: "why? it doesn't make sense."

P: (Stuttering) bad, because all the cops did it. I mean it was at least about 30, and, plus, the guy had handcuffs in the back.

P: I mean, and, then, what is so bad, it's always the black cops.

T: Hmm.

P: I mean, I mean, like their own people.

T: Right.

P: I mean (stuttering), like, I know you got a job to do and stuff like this. I mean, but they come around to the neighborhood, and, I mean, they think they're like God, you know, stuff like this, man. And, I mean, plus, man, like, even though white cops come, I mean, around the neighborhood, they're not like the black cops.

T: Uh-hmm.

T: So it seems like the black cops are more abusive than the white cops?

P: Yeah, yeah, yeah, yeah, and, I mean, what makes it so bad to me is, like, in every neighborhood, I mean, like, people is talking about it, I mean, around my neighborhood and everywhere. I mean, like, I think that those black cops, man, they want to be, you know, big shots and stuff. You know, but if they would take those guns off, I mean, off of them, and that stick, I mean, they wouldn't be that bad.

T: Right.

P: Because they think, you know, "I got this badge and I got this gun." I mean, like, when you look, I mean, they're always shooting somebody. Just like they shot a homeless man.

T: Uh-hmm, right.

The therapist and the subject noted that the subject was able to handle this situation with the police differently than he handled similar incidents that occurred in the past. In former times, he would have confronted the police with hostility. In this case, he substituted anger control for impulsive behavior. He watched their activities. He was aware of feeling anger, but he chose not to react::

T: When this happened with the police, you found yourself getting angry? I mean, it sounds like a realistic situation in which to feel angry. Do you think you handled it differently for yourself than you would have in the past? Did you see any difference in yourself, your anger or how you handled your anger?

P: (stuttering) I mean, I mean, you know, like, before, like, I would have said something to the cop.

T: Okay.

P: I mean, about their (stuttering) ... "Why you want to beat somebody with cuffs?"

T: Right.

P: Being around this stuff, man, you know, like, I was just watching this stuff, man, and I was getting angry, but I said, you know.

T: But you didn't become part of the scene yourself?

P: Yes, yes.

The therapist saw improvement in the subject's ability to manage his anger and reinforced it. Although the anger scores on the standardized tests were still high at the midstudy, test-taking session on 7/1/03 (Tables 8-10), the subject's description of his handling of current irritations demonstrated change. The therapist hypothesized that the subject's behavior was changing before the belief systems and attitudes that he held since early childhood and that were measured by the standardized tests. In other words, the subject's behavior was changing before his attitudes. The therapist spoke to the subject about this issue during a conversation about the homework:

T: As I look at the forms I sent home with you, it seems like you're not getting angry as much as you did in the past.

P: Uh-hmm.

T: On the other hand, when you took those tests (the standardized tests) last week, it still seems like you have an angry mindset. Your scores on the tests weren't dropping so much. You're changing how you're behaving, which I think is good. But I'm wondering if you're allowing the attitudes you have about life to begin to change. In other words, anger is

formulated by our thoughts, and we'll talk more about that. So it seems to me that you have a lot of thoughts about what's unfair, and that things should be the way you want them to be. We'll talk more about that today. So we want your behavior to continue to change, which it is, but we also want you to start catching yourself when you're judging people, when you're putting other people down, when you're saying that a person is crazy or whatever, because all those thoughts are still making you angry.

The therapist introduced the subject to meditation (Benson, 1993) in the fifth session, the final breathing and relaxation method taught during the protocol. Directions for Benson's method for mediation (Appendix J) were provided and practice commenced:

T: What meditation means is focusing. So the whole idea of meditation is to focus on one thing, which means that all of the other stimuli around you go away, because you're just focused on one thing. Usually the one thing that you focus on when you meditate is your breath. So we're coming back to breathing again but in a different way. I'll give you the directions and then we'll try it in here for a few minutes. So generally when you meditate, you sit in a quiet place and you get comfortable. Usually your feet are on the floor, your hands are on your lap, and you close your eyes. And then you'll become aware of your breathing, because breathing is the main focus of meditation. And in meditation, different than in staccato breathing, you don't change your breath. You just let it be however it is. So you're just observing, you're breathing, however it is.

Following meditation practice, the therapist asked the subject questions about the breathing experience during the meditation. She focused on his breathing in

order to enhance his body awareness. The goal was to help the subject become conscious of his ability to relax his muscles as well as of his parasympathetic nervous system's response:

T: Were you able to concentrate on breathing?

P: Yes.

T: What did you observe about your breathing?

P: Well, really (stuttering), like, it was kind of, when I was doing it, like, I seemed (stuttering) better or something like that.

T: So you seemed to be breathing better?

P: Yeah.

T: Where did your breath go in your body? How far down or which side of your body?

P: In the middle.

The psychoeducational focus of the fifth session involved the role of irrational beliefs in facilitating anger. The therapist provided an example of a belief about danger that when applied to situations that were not inherently dangerous promoted anger and aggressive behavior. The physiological consequences were the same, because the body reacted to the imagined danger:

T: Irrational beliefs are guided more by how we felt as a kid than by reason. We get these beliefs as children. Sometimes they're passed down in our families. We have beliefs that keep us connected to our families, even though family members are dead, and even though the beliefs may not fit our current lives.

T: Your thought process and your beliefs can all be used to either increase anger, if you have the kind of thoughts or beliefs that make you angry, or

they can decrease anger, if you have thoughts that help you become less angry. They can help you to control your anger so you don't go over the edge. So that's what we want to look at. When people have high blood pressure, if they have beliefs such as: "the world is a dangerous place," then they're always going to feel threatened.

Another irrational belief that was reviewed during the session concerned fairness. In the discussion about "the fairness belief," the therapist told the subject that when he expected fairness from people, who held a different idea of fairness than he did, he was setting himself up for disappointment. He did not seem willing to change this belief. Because he thought things "should be fair," and they were not, he maintained an emotional state that could threaten his health:

T: Then there is another belief that we're going to call "the fairness belief." This belief is that there are absolute standards of fair behavior that everyone knows. So that everyone knows what's fair, they should act that way. Therefore, this person who has the fairness belief acts as if he is keeping count, sort of a balance book. "Well, I did this so the other person should do as much." They're always checking to make sure things are equal.

P: Right.

T: Things have to be equal, and if they're not, the person is going to be angry or upset. Have you ever had that belief, expecting things to be fair?

P: Yeah, yeah, I think, like, I think of people. I mean they be fair; I mean I'll be fair to them too. You know what I mean?

T: Uh-hmm.

P: I mean there's some people, I mean they won't be fair, you know, because they want to do what they want to do, and damned if somebody else. You know what I mean?

T: So if you have that belief, and it sounds like you have had that belief, you may run into problems. What's the problem with that belief?

P: Well ...

T: When does it get you into trouble?

P: Well, well, I mean, I mean, I try to tell them, you know, what I mean, like it's wrong, or just because somebody believed things because, see, well, like me, I think everybody got their own mind.

T: Uh-hmm.

P: And so people want to say what they want to say, and then, I mean, and some people, I mean, they want people to say what they want them to say, you know. Me, like, I cannot stand that. I don't think it's fair, you know, when people do that.

T: Here's the problem. If you have a belief about what's fair and people don't do it the way you want it, then you end up angry. Correct?

P: Yeah, yeah.

T: Everyone has a different idea of what's fair.

P: Right, right.

T: So if you hold a belief that things should be fair, and maybe somebody else also holds the same belief, but they don't look at fairness in the same way you do.

P: Right, yeah, yeah.

T: Like those cops had their own idea of fairness, when they were beating up that guy.

P: Yeah, right.

T: And they would have probably said what they were doing was fair. I don't know how they would come to that, but they might.

P: Yeah.

T: My point is, if you hold a fairness belief, you're going to be angry a lot, because people are not going to have the same idea of what's fair as you do. Even your wife probably doesn't see fairness the same way you see it.

Another irrational belief that was reviewed in the fifth session was "the change belief." The subject acknowledged that in the past he tried to force people to change, thinking that they would do what he wanted in response to his angry outbursts. He said that he no longer coerced people to change; he was now able to accept people as they presented themselves:

T: The third belief is called "the change belief." This belief is that you can actually change another person. If they're doing something you don't like, just pressure them into change. People sometimes use criticism to try and force others to change. We know that criticism doesn't work, because people only change if they want to change, not because they're forced to change. Yet the people who hold the change belief think that if they criticize you, yell at you, tell you you're wrong, then you'll change. Have you ever had the belief that if you pressured somebody enough, they would change?

P: Well, well, I used to do that.

T: So you remember, when you did that.

P: Right.

T: Thinking that if you applied more pressure, and yelled at them a little more.

P: Right.

P: I don't do that no more. I mean, you know, I let them do what they want to do, now.

“The shouting belief” was the final irrational belief associated with anger addressed in this session. Shouters use anger to punish others, believing that punishment is appropriate because the others wronged them in some way. The subject admitted to being a shouter in the past, but he no longer saw himself in that role. He professed to using self-talk and positive thinking to transform his behavior, admitting that he believed his health would suffer if he continued to yell and shout:

T: We have people who have a “shouting belief.” The shouting belief is that when people cause you hurt or pain, you should punish them by shouting at them. These people are very loud and shout at other people. They use their anger as a form of revenge. So if you do something I don't like, I can shout at you: “what are you doing?” And that's supposed to punish you for hurting me.

P: Yeah.

T: So have you ever had the shouting belief, or employed the shouting belief as one of your behaviors?

P: I mean, I mean, like, I did it before. I mean, but just like I said, like now, like, I don't even, you know, try to, I mean shouting and stuff like this,

man. I mean, like, I try to walk away, man, because I know, like, my pressure might go up. You know, I'd be thinking about strokes, and, I mean, stuff like that, man. I mean, but before, like, maybe I didn't think about it.

T: Right.

P: But you know, I'll be thinking now of things like my health. I mean, it's bad, and other people don't care, but you know.

T: Uh-hmm.

P: So, like, I don't even do it (shout) now. I just walk away.

T: Good. So you're changing in that way.

P: Yeah.

T: Because before when you shouted at people, you thought that because they hurt you, they deserved every bit of anger you could unleash at them.

P: Right, right (stuttering). Anymore I just look at them, and then I'm just relieved and stuff, man.

Following the psychoeducational piece concerning irrational beliefs, anger-management exercises were introduced. The first exercise involved coping statements and affirmations used to help reduce anger. The therapist provided the subject with positive statements that he could carry with him in his pocket. If he reviewed them during tense situations, his anger would decrease:

T: These are statements that help you cope more positively, if you use them in difficult situations. It is like stopping and taking some deep breaths, but, instead, you will be looking at these statements. "This may upset me but I know how to deal with it" is one sentence. "I can find a way to say

what I want without getting angry." "I am responsible for what happens to me." "I am responsible for taking care of my own needs." "I can't expect people to act the way I want them to." "I am free to want but the other is free to say no." "Others are not obligated to meet my interests." "Others' needs are as important as my needs." "We can negotiate to make this a win-win situation for both of us." "People change only when they want to, not because I want them to." "When someone disappoints me, it does not mean he or she does not care." "Aggression and cruelty will not get me what I want."

The next anger-management technique utilized involved communications skills. The subject was taught non-confrontational anger, a pattern of speaking in which the annoying behavior is critiqued, but not the person who initiated the behavior. Rather than shaming or judging the person who was thought to have caused the problem, the speaker was asked to take responsibility for his emotional response to the other's behavior:

T: We're going to do two more things here today, having to do with anger. One is learning to express anger in a way that doesn't make other people angry. We call that non-confrontational anger. In other words, when you are angry, you don't get in somebody's face; that would be confronting them. You don't want to resort to name calling or criticism or telling people bad things about themselves. The non-confrontational pattern is to express anger by saying: "when you do X, I feel Y". "When you do something, I feel something, because of something."

The therapist asked the subject to describe a situation involving anger from the past that they could use to practice non-confrontational anger. He seemed to

resist sharing a past anger incident, saying that he couldn't remember any past situations that triggered his anger. Whether his inability to remember such an incident was a consequence of shame about his past behavior, physiological trauma resulting from his stroke, or his belief that he was no longer that "angry" person, was unclear to the therapist:

T: So it is important to learn how to express anger. Think of a situation that makes you annoyed.

P: Well, really, I can't think of nothing right now.

T: Really? You can't think of anything that annoys you right now? Nothing with your neighbors, with the guy you work with, with your wife, with your kids? Then think of a past annoyance. What's annoyed you in the past?

P: Well, you know, I mean, like (stuttering,) I mean, that's the past, man, like, I don't even try to, you know, bring it back, you know.

T: But we need something to practice on, so you have to bring something back, otherwise we can't practice. It doesn't have to be big. What's a small annoyance? Just think of something that got on your nerves, that made you uncomfortable.

After the subject identified a negative situation, the therapist helped him recognize his feeling state. In non-confrontational anger the communicator provides information about the behavior that annoys him as well as the feelings it engenders in him. When it became apparent to the therapist that the subject was not conscious of his feelings, she helped him identify them through cues that were occurring in his body. After he noticed that his hand was moving, he was able to work backwards to identify the emotion that he was experiencing:

P: Well, like, somebody can just be talking and they, I mean, they don't even know what they be talking about.

T: When they talk without knowing what they're talking about, what do you feel?

P: Well, I mean they don't really know what they're talking about.

T: But what do you feel?

P: Well, um ...

T: What's your emotion?

P: Well, like, I'll be, you know, I mean, you know, my hand will be moving.

T: That's a sign. When your hand starts moving, are you feeling angry or annoyed?

P: Yeah.

T: Or irritated?

P: Yeah, yeah.

T: Which one?

P: Well, just annoyed.

Anger-management was addressed in session five using a role-play technique as well. Focusing on the situation with the abusive cops, the therapist attempted to mirror the actual scene as closely as possible. She played the role of the police. During the role-play, the subject became annoyed with the police; in his view they were wrong. Following the exercise, the therapist explained that "the fairness belief" was contributing to the subject's anger. They repeated the role-play and this time the subject was less reactive toward the police. He was able to calm himself:

T: When you say the cops are cussing the guy, what are they saying? Like what does cussing mean?

P: I mean they be calling names.

T: Like what kind of names?

P: I mean "dumb xxxxxx" and I mean "you mother," you know what I mean, stuff like this, man.

T: Right, so I'm going to act like the abusive cop. I want you to use some of your thoughts to calm yourself down. Either talk to yourself about your health or tell yourself that adding more anger to the situation isn't going to help anything.

P: Oh, yes.

T: (The roll-play begins.) "Dumb xxxxxx, dumb xxxxxx, ah, ah, ah, ah, ah (therapist pretends to hit). There, there, you idiot, you stupid ah, ah, ah, ah, ah." As I'm being the police, what are you feeling?

P: Well, me, I mean, I mean, like, I think it's wrong.

T: Okay.

P: I mean, I don't care, I mean, because I hate to see people take advantage of other people.

T: Right.

P: I mean anybody.

T: Right.

P: I mean, I mean, especially when it's one person. Then, I mean, even like with gangs, why would you beat up one guy, when they got, like, ten guys?

- T: To go back to that fairness belief, you have an attitude about life that things should be fair.
- P: Yeah.
- T: You may need to say to yourself: "things are not always fair". This is a good example.
- P: Yeah right.
- T: Here's the bad guy with the firecrackers, we get him out of the house, cuff him and then pounce on him. (The therapist plays the cops) "ah, you mother xxxxxx, mother xxxxxx, ah, ah, you stupid xxxxxx, what's wrong with you, ah, ah, ah." Were you able to tell yourself that life's not fair? What did you do with that situation?
- P: Well, I mean, like, I was (stuttering) watching, and so when all those cops and stuff, man, I was just looking at them. After they left and then I went home.
- T: When I did this (took the role of the cops), did you feel calmer? How did you feel?
- P: Calmer.

Summary. At the beginning of the session the agenda was set, homework was reviewed, and recent anger events were shared (Dattilio & Freeman, 1992; Meichenbaum, 1996). The subject recognized the improvement in his anger-management skills, particularly in reference to a situation involving the police. That the subject's impulsive behavior decreased prior to a change in his attitudes was noted. Meditation (Benson, 1993; McKay et al., 1989) was introduced and the subject focused on his breathing and on the cues signaling

relaxation in his body. The role of irrational beliefs was discussed in the psychoeducational section of the session (McKay et al., 1989). Beliefs included "the danger belief," "the fairness belief," "the change belief," and "the shouting belief." Anger-management exercises emphasized positive affirmations and coping statements, the communication of non-confrontational anger, and the recognition of feeling states in the body (McKay et al., 1989; Weisinger, 1985). The session ended with an anger-management, role-play highlighting an interaction with the police. Homework and self-monitoring were assigned (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994).

Session 6 (7/15/03)

Capsulation.

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week
3. Review the Meditation Exercise and Make Adjustments [see session number 5] (Benson, 1993; McKay et al., 1989)
4. Anger Exposure Role-Play Exercise, Using Therapist as Trigger (Meichenbaum, 1996)
5. Client Pretends to Coach Someone with a Similar Problem (Meichenbaum, 1996)
6. Assign Homework and Self-Monitoring (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
7. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. By the sixth session, the subject noticed a dramatic difference in his behavior. He found that he was calmer, he no longer directed rage toward his neighbors, and he stopped hollering. The therapist reinforced the new behavior, asking him if was aware of the changes:

T: Are you seeing some differences from when we started or not?

P: Yeah, sure, yeah.

T: Can you say what or how? How is it different?

P: No, I mean (stuttering) you know, coming around here, like, and I been, you know, listening, and you know, like, I felt better, you know, when, when I be talking to people and stuff, man. You know, because I don't let people get on my nerves and stuff, because I'm just, just ...

T: So you're calmer in some way?

P: Yeah, yeah.

T: And you don't let people get on your nerves as much?

P: No more, no.

T: That's good.

T: You didn't even feel slightly irritated at the neighbors or anything?

P: No.

T: You're making some big progress.

P: Yeah.

T: (shuffling papers). She (therapist refers to subject's wife) must be pleased because at the beginning of this study, she told me, on the telephone, that you were a pretty angry guy at one time. So she must be seeing some pretty dramatic changes.

P: Yeah, oh yeah, yeah, (stuttering) because I could see a difference too.

T: Uh-hmm.

P: Like, I used to always, anything could get on my nerves. Like, I'd always be hollering or, like, getting mad and stuff but now, like, I don't even do that, you know. I just, like, walk away.

In regard to his improvement, the subject stated that he no longer reacted in anger to irritations that bothered him in the past. Although he could have been denying his anger, it was possible to surmise that he believed these sessions helped him resolve his problem with anger. He suggested that his use of distraction techniques and self-talk helped him transform his behavior and his attitudes toward the neighbors.

T: Okay. So, you didn't have any anger for this week. Is that correct?

P: Uh-huh, not at all. I mean none at all. You know, nothing at all.

T: That's pretty good, In the past, even if you didn't have any big anger events, you had some annoyances at your neighbors or at the person you worked with.

P: Yeah, yeah. I don't do that, you know, I mean, like, I don't even, like, my neighbors, I might be on the step or something like that, man, and like, I just look at them. Then I just look or watch TV, you know, I mean, instead of getting, you know, all upset. You know what I mean? Because, like, man, a neighbor could really get on my nerves and stuff.

T: So it seems like your whole approach to anger and things that bother you has changed.

P: Sure.

T: And you just kind of either remove yourself or you tell yourself it's not worth getting excited about.

P: Right, right, right, right.

The therapist spoke to him about the necessity of continuing the anger-management work even with the decrease in angry behavior. It would be necessary to practice the techniques even when the sessions ended. Behavior change is a life-long practice that must continue even when the therapy is terminated. As this was the third to the last session, the therapist began to prepare the subject for continued work on his own:

T: We will continue talking about how to cope with anger situations, because, it's like anything else, you have to keep working at it to change it. You can't just practice for a couple of weeks or you will be back where you started shortly.

P: Yes.

T: This is kind of a lifelong practice. If you are to get hold of your anger, and you'll need to practice these experiences even when we stop working together.

P: Right, right.

T: So, even though there's nothing making you mad right now, we'll look at some past anger, so we can prepare for situations when they do come up again. There will always be aggravating neighbors. There will always be police arresting somebody in an undesirable way. We don't live in a perfect world.

In a review of the homework for this session, including the self-monitoring, the therapist noticed that the subject's SBP was higher at one point during the week in comparison to the other readings during that week. She asked the subject if he had any idea why his blood pressure may have been higher on that

occasion. He suggested that the raise in pressure was due to more exertion than usual. Although he may have been accurate, the therapist used the situation to ask the subject if he had experienced stress recently, emphasizing the relationship between stress and high blood pressure:

T: Let's look at this blood pressure record. On the 13th and 14th, your systemic, which is the higher number went up a little bit. Do you remember why it might have gone up? Were you under any stress that day?

P: No.

T: What were you doing? It would have been yesterday, which was Monday, Sunday and Monday.

P: I mean nothing really. You know, maybe I went downstairs and then I came back upstairs, and then I probably took my pressure, you know.

T: I see. So you might have moved more than usual.

P: Yeah, yeah. See because sometimes, like, I'll forget, and then I'll just test it upstairs, you know.

T: It's still within fairly normal limits, but it's just a little higher.

In the anger-management section, the therapist employed two inter-related techniques, graded exposure role-play and response prevention. In a graded exposure role-play the interaction becomes more intense at each repetition of the situation. In the response prevention part of the exercise the subject is expected to behave in such a way that the impulse to respond according to negative patterns is prevented. In this example, the therapist attempted to trigger the subject with her choice of words, attitude, tone of voice, and body posture. The

subject controlled his hostile response by employing previously learned coping mechanisms:

T: What you need to do is learn to control your emotions, which you're learning, in response to certain situations that have aggravated you in the past. We're going to do something called a graded exposure role-play. We'll just do this a few times, it will help you tolerate feelings of anger or any feeling that upsets you. If you can be repeatedly exposed to a situation that makes you angry, without getting really angry, pretty soon you'll be able to handle the situation.

T: What we'll do here is: I will either make a threat or express judgments to you and you have to maintain your composure. The behavior we're talking about is called response prevention. In other words, we're going to prevent you from being the old you and responding the way you used to, so that you don't become part of the problem. When I try to provoke you, I want you to work on calming yourself down, telling yourself to relax, being aware of your breathing, and do whatever you need to do to calm yourself down. You need to be able to look directly at me without taking action against me or making any inappropriate negative comments in response.

(The scenario begins.) "You 'mother-xxxxxx.' Who are you to look at me like this? You think you're so much better than I am. You're not better than I am. You're not better than I am, you 'mother-xxxxxx.' You leave me alone. You get it; you leave me alone. I don't have to live next to trash like you. I can live anywhere I want."

Analyzing his reaction to the graded role-play exercise, the subject acknowledged that in the past he would have responded by fighting. He used breathing techniques to calm himself. He used self-talk to reinforce the idea that his allegiance was to himself and to his physical health. He believed that if he didn't take care of himself, then no one else would either:

T: What was that like for you?

P: Well, (stuttering) I mean, like, what you're saying just now, well really, I mean, it don't make me no difference, because I know how you is, and so I don't want to get upset just because you is ignorant.

T: Did you feel you were successful in doing that?

P: Sure.

T: You looked pretty successful.

P: Yeah.

T: So you thought thoughts to yourself that helped. It looked like you were also in touch with your breathing.

P: Yeah.

T: And keeping your body relaxed.

P: See, see, see, because well, say, like, years ago or, like, a couple months ago, man, I mean, I would have been arguing or even fighting.

T: Uh-hmm.

P: I mean, since I've been doing this, I've been thinking about it, because, I mean, these people who make people angry, that's why I got to come to a doctor. I mean, you know, there are other people, I mean, I mean, (stuttering) I mean, what do they care?

T: Uh-hmm.

P: I mean about me.

T: Right, exactly.

P: So I be saying they don't care about me and I mean really they don't even care about themselves.

T: Uh-hmm.

P: I know they ain't going to worry about me.

T: Right.

P: Suppose I get a heart attack or something.

T: Right.

P: Like they gonna say "sorry," like, you know what I mean.

T: Uh-hmm.

The response prevention and graded exposure role-play was repeated. The therapist attempted to trigger the subject and was not successful. The subject remained relaxed without his usual physiological symptoms. His hands didn't tremble, shake, or even move. The subject expressed pleasure that he no longer desired to engage in a physical fight and the therapist agreed, reinforcing this behavior, that this was indeed a positive event:

T: So I'm going to be your neighbor. (The scenario begins with the therapist invading the subject's space.) "Don't you look at me that way, you 'mother-xxxxxx.' Who do you think you are? You think you're so good, huh; you think you have it altogether. Well, you don't. You don't. I'm as good as you, you 'mother-xxxxxx.' I'm as good as you are." (The scenario ends.) Okay. Wow, you're getting really good. How does that feel?

P: Good.

T: Are you able to control it?

P: Right, right.

T: Wow.

P: Right, because I mean, I'm attending to what you're saying. See, like before, like, my hands would have been moving.

T: Right, right. You wouldn't have hit me but you would have wanted to.

P: Yeah, yeah, yeah. But now, man, like, my hands would be just like that. (The subject shows that his hands are relaxed.) Plus, I don't even think about it.

T: That's amazing.

P: You know.

T: That's really amazing.

P: Yeah.

T: That's wonderful.

P: Yeah.

T: So let's sit down. We're done with this exercise. It's really powerful to know that you've changed that much. That's incredible.

P: Yes. Yeah, yeah, because, I mean, as soon as someone (stuttering), people be hollering at me, man, I mean, my hands would move.

T: Right.

P: I mean, I mean, and I'd be, you know.

T: Itching.

P: To hit him.

T: Right.

P: But now, I mean, my hands, don't even move no more.

T: That's amazing. That's wonderful.

Asked for another example of recent anger, in order to continue the work with anger-management exercises, the subject said he could not think of anything. He said that he no longer had the problems with anger that he had in the past. His answer could reflect resistance or he could believe that he had changed and that anger was no longer a problem for him. Because the end of the protocol was approaching, the therapist reminded him that his problem with anger would be a life-long issue for him. She believed that the new behavior resulting from these sessions needed to be reinforced if it were to become habitual:

T: Yes. For our purposes right now, we need to know what made you angry in the past. I mean, when you take the anger tests that I give you, your scores come up high. You say: "I've been an angry person, I shouted at people, I did this, this and this."

P: Oh, yeah.

T: What made you do it? I know you didn't do it without reason.

P: I didn't.

T: Somebody must have done something or said something that really upset you.

P: Yeah, yeah, I mean, I mean, (stuttering) that was, you know, like, maybe a couple months ago that this happened, maybe even years ago. I mean now, it don't even bother me.

T: Right, and we're trying to make sure it won't bother you in the future.

The final anger-management technique employed in the session involved role reversal. The subject was asked to play the role of the therapist and counsel the therapist, who took the role of the subject. The objective of the exercise was to

reinforce and review the new learning that took place during the protocol.

Learning is often enhanced through teaching or counseling others on the subject of interest. In this case, the subject counseled the therapist, telling her that her anger could cause her health to deteriorate. He also suggested that she was capable of taking control and changing her behavior by telling herself "no" to certain responses in specific life situations:

T: We're going to do one more exercise before we stop for today. In this one, imagine it's me who has the problem with anger. Imagine that I'm the one who's gone off when people have done things or said things to me that I haven't liked. I've either gone off and hit them or wanted to hit them so badly that my hands have shaken. I want you to counsel me. What advise would you give me? If I came to you and you were the therapist or the counselor.

P: Well, what would I tell you? I would say: "hey, well, why don't you try to get yourself together. I mean, really, it's not worth it, I mean, when you get angry or you want to fight. I mean it's really bad for you and stuff."

T: (In role.) "Yes, I mean, I have started to have health problems."

P: "Yeah."

T: "And they're probably related."

P: "Yeah."

T: "Well, doc, when you say get yourself together, I don't know what you mean. How do I get myself together?"

- P: I mean, I mean, (stuttering) what I'm talking about, like, when I'm saying get yourself together, I say, I mean, like, don't get angry and start getting mad. I mean, don't wind up fighting and stuff like this."
- T: "But I can't help myself. I mean, it just comes over me. I don't know how to stop getting angry. Can you give me any advice?"
- P: "Well, don't get angry."
- T: "You mean just don't get angry?"
- P: "Yeah."
- T: "I have control over that?"
- P: "Sure."
- T: "Hmm."
- P: "Yeah, that's right."
- T: "You mean just tell myself don't get angry?"
- P: "Right."
- T: "So I just have to say that to myself?"
- P: "Right."
- T: "So next time somebody says something to me, rather than jumping at them, I just say those words over in my head, 'don't get angry'?"
- P: "Right."
- T: "All right, I'll try it and I'll come back next week and let you know how it worked."

Summary. The agenda was set (Dattilio & Freeman, 1992), homework was reviewed, recent anger events were discussed (Meichenbaum, 1996), and the meditation was reviewed (Benson, 1993; McKay et al., 1989). The subject's

improvement was noted and continued practice at home, even when these sessions ended, was advised. Anger-management exercises, including graded role-play and response prevention practice, were introduced (Meichenbaum, 1996). The subject relied on breathing, self-talk, and relaxation during the response prevention tasks. Even during the most intense role-play situation, the subject managed to remain calm. The therapist reinforced this behavior and reminded him of the necessity of life-long practice, particularly in the case of assertiveness, breathing, anger-management, and relaxation skills. In the final exercise, the subject counseled the therapist, as if she were the patient with the anger problem, an exercise that reinforced the principles he learned during the protocol (Meichenbaum, 1996). Homework and self-monitoring were assigned (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994).

Session 7 (7/21/03)

Capsulation.

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week
3. Review Any Difficulties that Occurred With the Relaxation Exercises
(DiTomasso, 2000)
4. Practice A Relaxation Exercise In The Session
5. Practice Anger Exposure Exercises -- Goal to Erase All Anger Responses
(Weisinger, 1985)

6. Provide Closure To The Therapy Protocol (Meichenbaum, 1996)
 - A. Identify High-Risk Situations
 - B. Rehearse Responses to Anticipated Stressful Situations
 - C. State When, How, Where, and Why He Will Use the Coping Strategies
 - D. Review the Successful and Unsuccessful Efforts at Anger Management
7. Discuss and Implement Relapse Prevention Techniques (Meichenbaum, 1994)
8. Assign Homework and Self-monitoring (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
9. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. At the beginning of the seventh session the subject said that both he and his wife were pleased to note a difference in his behavior. He no longer reacted aggressively to people who provoked him.

T: And nothing happened at home that annoyed you?

P: No, no.

T: You're doing well then aren't you?

P: Sure. Yeah. I'm (stuttering) I mean, even my old lady say the same thing.

T: Great! All right, well that's good.

T: You didn't respond annoyed or resentful toward anything?

P: Right, right.

T: Is that different from the past?

P: Real different.

T: Uh hum,

P: Yeah, Real different.

T: How was the past so different?

P: I mean, cause I would get angry and be cussing and stuff like this man. But now, like, I don't even pay, you know, people no mind now. I mean, no more, because I know they be provoking me and stuff, man. I mean, before man, like, I be, you know, getting mad and stuff man.

T: Now you don't pay people any mind?

P: No. That's what I should have did, like, before.

T: So, your weeks are really quite different now.

P: Yeah. Right.

In the seventh session, the therapist reintroduced the topic of relapse, explaining that after behavior changes occur and one's anger is under control there could be slippage or a return to an earlier dysfunctional pattern of behaving. The subject maintained that he would not have that experience and that even with drinking he had been able to control his behavior:

T: So I don't know if you ever quit something and then had a relapse and started doing it again. Has that ever happened? Well, anger is like that. You could learn how to manage it, but you could have relapses. In other words, you could fall back into your old patterns. We want to make sure that doesn't happen by preparing for it. Is there anything you've ever given up, but then had a relapse?

P: Not really, but, like, I used to drink a lot. But now, like, I might take a drink like maybe once a month or something.

T: Right.

P: But you know, because I know that about my pressure, like, I don't even mess with it that much, you know, not like I used to.

T: Right. So you haven't really had to worry about relapses too much?

P: Uh um.

In the breathing and relaxation section of the seventh session, the three relaxation exercises that the subject learned and practiced were discussed. The subject told the therapist that he preferred Stacatto Breathing, an exercise that releases stress and tension from seven segments of the body and decreases muscular blocks in the body that impede natural breathing (Pierrakos, 1989; Wilner, 1999):

T: Which one do you prefer?

P: Uh, well, I mean, I mean that one that, you know, you know, you breathe in, in, in, out.

T: The one where you go (The therapist breaths in several sniffs, heavily.)

P: Yeah. Yeah. Yeah.

T: That's your preference.

P: Yeah.

T: So we're going to try a couple of those today. Then we're going to talk a little bit about anger. Actually let's start out with that one. It's called staccato breathing.

P: Right.

After the breathing practice, the first anger-management exercise required the subject to become aware of symptoms and feelings that signaled his anger. Once he identified these feelings, he was asked to use them as a sign indicating that he needed to relax. The situation with the police abusing the person they were arresting was reviewed. Rather than reacting negatively and escalating the situation, the subject was able to think about the police differently: "They're

doing their job.” He replaced impulsive acting-out behavior with a substitute, shaking his head and/or walking away:

T: We’ll think of a situation that has made you angry in the past. I want you to see all the, the dynamics of it and then when you start to feel things in you body, I want you to immediately start to breathe through it and talk to yourself about it saying: “I don’t want to get angry here.” So which situation should we use? Your neighbors, your employee, something with the police?

P: Well, like, like, either one, don’t make a difference.

T: Which one makes you mad usually?

P: Probably the, probably the cops.

T: So, I’m going to describe the situation for you. When you start to feel something in your body, put your hand up. If you feel yourself getting tense, your heart beating, or yourself getting sweaty, raise your hand. Okay. So the situation is there’s some trouble on a corner. Somebody calls the police and not just a couple of cars show up but maybe 10 cars, 15 cars. There’s like 30 police. Black police; white police. They handcuff one guy. They start to put him in the paddy wagon. He fights them because he doesn’t want to go, but he’s handcuffed. About eight police get out their battering rams, and they start abusing this guy. Hitting him. Cussing at him. Calling him names. “You dumb xxxxxx.” You’re just watching that. Are you having any feeling in your body right now as I’m talking about it?

P: Well, well, well, really, you know, none now.

T: In the past have you had feelings?

P: Quickly.

T: Okay. How come you're not having anything right now?

P: Well, well, well, see, (stuttering) when, like, I mean, like, when I be looking at people, especially the cops and stuff, man, I know, like, they be doing their job too, man, but, I mean, like, (stuttering) I just don't like the way that they do it, I mean, their jobs and stuff. So man, what I do now is, man, like, I just look at them. I mean, plus, I just walk away because they gonna do what they wanna do anyway. So, so, like so that's stopping me from getting all upset and stuff like this man. So, (stuttering) like, I don't even worry about it now more. Then, I mean, if, if, I'm around, and plus they see me standing there man, they gonna look at me real funny. You know?

T: Now have you had any chance to test this out? Have you seen any cops recently?

P: Yeah. Yeah, I, I, mean like I, I, (stuttering) done seen, you know, cops and stuff man, I mean, stopping people and stuff like this. Plus, I just look at them and shakes my head man. I mean because some of them people is wrong. But, but the cops, they will stop, like, somebody, I mean, that ain't doing nothing. So, I just look at them. You know what I mean?

T: So it sounds like you have a pretty good handle on being able to calm yourself when you see something that used to bother you.

P: Yeah. Yeah.

T: Particularly with the police.

P: Oh yes.

Even though the subject was still annoyed by his neighbors' behavior, he told the therapist that he was able to manage his anger using a distraction technique; he went upstairs to watch television. In addition, he turned to outside help. In this case, his wife sat outside and discouraged the neighbors from sitting on their steps.

T: Have you been able to deal with your neighbors? I'm assuming that they're still out there sitting on your steps.

P: Yep. Yeah, just like, I mean, like, yesterday, I mean, (stuttering) all of them was on the step and stuff. So, my wife, I mean, went out on the step, and, and, (stuttering) I, I mean, so they moved and stuff, man. She was out there for about, about, say five hours and stuff, man. I mean so many people be next door, so they move out on our steps and stuff, man. So, like, I looked out and then I went upstairs in the middle room and I, I mean, just watched TV. You know what I mean, because they gonna do it anyway, I mean, 'cause there's so many people in the house man.

T: Right.

P: So I don't even bother with them. I'm gonna be like that.

T: So you're more excepting of what you can't change?

One of the main areas of emphasis in session seven was relapse prevention. However, the subject believed that he would not have a problem with relapse. Rather than viewing his thoughts about relapse as a sign of resistance, the investigator suggested that this behavior was consistent with the subject's view of himself. He believed that if he made up his mind to do something, he would succeed. On the other hand, there was a possibility that the subject was reluctant

to identify situations that could trigger his anger and cause a relapse. He might fear that if he named them, they would actually occur:

T: So let's think a minute and see whether there are situations you really have to watch out for; where you could have a relapse if you are not careful?

P: Well, not really, I mean, I mean, I, I, I, I mean (stuttering), I ain't gonna be worrying about that, I mean things like that no more, because, like, I said before, it's not helping me.

T: Right. Even though you don't expect it to happen and I agree with you it's not likely it will happen, we have to be prepared. So what would the situations be that we should prepare for? If it were going to happen, where would it most likely happen? Where would you be most likely to get angry in your life, even though you do not believe it will happen?

P: Well, well, I mean, really, I, I can't even, I mean, say. You know?

T: Right, so, should you be careful around police? Would that be a high-risk situation for you?

P: I mean, I mean, not really.

T: Okay. So we don't have to worry about you and the police any more?

P: No. No.

T: All right, what if somebody tells you you're dumb? Should you worry in that situation?

P: I mean, I mean, cause I know that I ain't dumb.

T: Okay. So if someone calls you a "mother-xxxxxx"? Is that a high-risk situation?

P: No. No. Because all I do now is look at them and shake my head, man. I, I, mean, then I just go, man. Instead of me, you know, getting all upset about it, man. I mean dumb, it be dumb stuff.

Even though the subject was unable or reluctant to think of situations in which he could relapse, he was able to name three mechanisms to help him control his anger: breathing, distraction, and thought substitution. By rehearsing the skills he would use if a relapse occurred, he was preparing for that event, even though he did not do it in the manner the therapist proposed:

T: So which responses have worked best for you, have helped you so that you don't get upset?

P: Well, I, I mean, like, I just, breathe and, you know, man, like I look at people now and I just walk away.

T: Okay.

P: Don't want to be arguing and stuff.

T: Breathe, look at people, walk away.

P: Yeah.

T: And is there anything that you say to yourself in you own head?

P: "It ain't worth it."

The therapist made another attempt to have the subject consider relapse as a possibility. Using herself as an example, she cited a situation that could trigger her anger, and explained what her response would be, if triggered. This intervention involved self-revelation and modeling. It seemed to help the client consider relapse as a realistic possibility. Coping mechanisms were also reviewed, including breathing, distraction, support, and pleasure.

T: So, here are some suggestions. First of all, identify situations that could trigger a relapse. Now according to you, there's none. You don't expect to have a relapse.

P: Right.

T: That may or may not be correct. I know for myself, certain things do trigger me no matter how much I work on them. If I think someone is trying to control me or tell what to do, that triggers me. The best I can do at this point is to catch it before I get myself in trouble by saying something.

P: Right. Okay. Yeah. Yeah.

T: So, if you know what situations get to you, you can be on watch for them, which I have to in my own life.

P: Uh hum.

T: Then you can practice behaviors to avoid responding with anger, and some of them, such as leaving the situation, you've been doing.

P: Yeah, yeah. Right.

T: Doing the breathing is another, and you've been doing that. Calling a friend. When you watched that incident with the police you called your wife. Sometimes it helps to call somebody up.

P: Right.

T: And tell them what's going on.

P: Right. Right.

Two behaviors that have enhanced both the quality of life and the quantity of life for cardiovascular patients, including those with hypertension, are support from significant others and engaging in pleasurable activities (Lepore, Allen, &

Evans, 1993; Orth-Gomer, Rosengren, Wilhelmsen, 1993). Therefore, the therapist asked the subject about his support systems and about aspects of his life that provided him with pleasure, emphasizing their necessity. Using questions, her goal was to affirm their importance:

T: So, use your wife, and other people in your life to talk to about things; talking is a stress release too. Some people like to write. I don't know if you do any journal writing or keep notes.

P: No.

T: That's not you?

P: No.

T: Calling people or talking helps. I think. Enlist support. So who else? Is your wife the biggest support in your life, or do you have other people to help you when you get upset about situations?

P: Well, well, well, like my daughter, when you know, like, I talk to her.

T: The other thing that helps people with anger problems is to have a better balance of pleasurable activities. Sometimes when we're too responsible and you're very responsible, you work a lot,

P: Yeah, Yeah.

T: ... and you have a lot of obligations to other people, you start to take life a little too seriously.

T: Something that might help you prevent relapse is if you can bring more pleasures into your life. I know you get pleasure from your job, but, are there any other pleasures you can bring into your life? What makes you laugh or makes you relax?

P: Oh yeah, well, like, well, most of the time, I like to go to the park and I be watching you know the basketball or the baseball and stuff, man. Plus I sit in the park, I mean, a lot and just be watching the people in the park and stuff man.

T: So that's pleasurable for you?

At the end of the session, the benefits of anger-management for the subject were reviewed. The objective was to help the subject see the value of anger control in his life and to motivate him to continue to review the material and practice the exercises. At one point, the therapist mentioned that when he no longer acted out of anger in social, public, and family situations, he would live free of shame. He agreed, responding he no longer does "different dumb things:"

T: So, what do you think the benefits of anger management are? What are the benefits if you really handle your anger?

P: You, you, I mean, I mean, what I think, since I been, you know, going through this, like, I learned a lot of things about my anger and stuff. You know, I mean, the things that, like, I didn't never know. Because I figured, well, if somebody do something to me, I am going to do something back to 'em and stuff like this. Since I been doing, this, you know, I mean I can see my problem was anger. I mean, plus that's been like that, I mean, for years.

T: So what are the benefits of changing and not being like that?

P: I mean, I mean, I mean, the benefits 'cause it helps me.

T: How does it help you? Help you in what way?

P: Well, I mean, I mean, like not to be angry and I mean, I mean, then not do different dumb things and stuff, man.

Summary. After setting the agenda and reviewing homework (Dattilio & Freeman, 1992), the subject's improvement was discussed. According to him, he did not experience any recent anger (Meichenbaum, 1996). The three relaxation and breathing exercises were reviewed (DiTomasso, 2000) and when asked he mentioned that his favorite was Stacatto Breathing. After doing the breathing, an anger-management exercise that involved exposure and emphasized paying attention to cues that signaled his anger was introduced (Weisinger, 1985). Although the exercise triggered emotion, neither his hands nor body trembled. Relapse prevention was discussed with the therapist asking about situations that would trigger relapse. Mechanics to control anger in case of relapse were reviewed (Meichenbaum, 1996). When the subject expressed reluctance to consider relapse as a valid concern, the therapist used a situation from her life as an example. The importance of support systems and pleasurable activities as they related to anger-management was reiterated. The session ended with a description of the benefits of anger-management from the subject's point of view. Homework and self-monitoring were assigned (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994).

Session 8 (7/25/03) – Termination

Capsulation.

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week

3. Review Any Difficulties that Occurred With the Relaxation Exercises
(DiTomasso, 2000)
4. Practice A Relaxation Exercise In The Session
5. Practice Anger Role-Play -- Goal to Erase Anger Responses (Beck, Freeman, & Associates, 1990)
6. Provide Closure To The Therapy Protocol (Meichenbaum, 1996)
 - A. Identify High-Risk Situations
 - B. Rehearse Responses to Anticipated Stressful Situations
 - C. State When, How, Where, and Why He Will Use the Coping Strategies
 - D. Review the Successful and Unsuccessful Efforts at Anger Management
7. Discuss and Implement Relapse Prevention Techniques (Meichenbaum, 1994)
8. Assign Homework and Self-monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
9. Say Good-bye and Prepare for One Month Follow-up Session
10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Excerpts. In the eighth and final session of the protocol, the subject described his progress in dealing with his coworker. According to him, when the coworker made a mistake, he remained calm, although he would ask the coworker to repeat the task:

T: Have you had to deal with your coworker who used to do things that upset you?

P: Yeah.

T: And is he still doing things wrong?

P: Well, I mean he doing like some things, but I just tell him, you know, what to do. Then he don't listen too much, but I don't get angry, I mean, like I used to do. So I just tell him, you know, just do it over again or something like that.

T: That's great. So that's a very good strategy. You remain calm and you just tell him "Okay, you have to do that over."

P: Right. Right.

T: No, Uh un.

In a reverse role-play involving the coworker, the therapist took the subject's role and the subject played the role of the coworker. Appropriate assertive communications were modeled. The subject agreed that his behavior had changed toward the coworker. The subject's communications were no longer angry and judgmental:

T: In that case, I was taking your role. Did I do it differently from how you did it in the past? I didn't say anything nasty to him.

P: Yeah.

T: I just gave him very clear directions.

P: Oh, oh, yeah. That's what I do now. You know, like, I don't, you know, cuss him out and stuff like this, man. I mean, like, sometimes when he is doing something wrong, like, I take a look him and I shake my head. So like he know that something is wrong, I mean, instead of me cussing at him and going through changes and stuff, man. I mean, I like the boy, I mean, but he just do a job just to do a job, see. But then, I mean, the people will come around and look at it, and they say: "hey Mike, you know, that don't look good."

T: Right.

It is important for clients to identify high-risk situations for relapse. The subject believed that if someone initiated a physical action against him, he would have to defend himself. The therapist suggested an alternative way to handle this situation before responding in kind:

T: Let's talk for a minute about the future. I mean, obviously, you want to maintain what you've accomplished so far. So you need to know what situations could trigger you. What do you have to watch out for? What are your high-risk situations? Even with all of the work we've done in the last 8-weeks, in what situations could somebody "piss you off"? When are you going to have to be really careful that you don't get too angry?

P: Well, well, really, I mean, just as long as they don't put their hands on me.

T: So the highest risk situation for you is if somebody put their hands on you?

P: Yeah, because, I mean, if somebody gonna do something, I mean, to me, I can talk to I mean, I can't just let them do something while they trying to, I mean, hurt me.

T: Now is there any chance of that happening?

P: No.

T: When was the last time that happened to you? When did somebody put their hands on you?

P: No, that been years ago.

T: So you don't really hang out in the kind of place that you're going to run into that type of person.

- P: No, because, see, like, I'm too old for that other, you know, stuff, man. Because, like, I don't even go, like, to the bars no more. I mean, because I went when I was, you know, young, but now next month, like, I be 62, and plus my health and stuff, man.
- T: So basically if you stay away from the bars there's much less chance that anybody's going to put their hands on you?
- P: Yeah.
- T: But do you feel if somebody did (put their hands on the subject) you would have to hit them?
- P: Well, like me, I got to defend myself now. You know.
- T: Would it be all right just to say: "take your hands off my body."
- P: Hey, well, hey, well, well, like, I tried but, you know, people, I mean, they think that you may be scared, when you don't say nothing. Or like you know what I mean, because a lot of people like that.
- T: So you don't want them to think that you're scared.
- P: Oh, oh, right because well I'm going to tell them. I say, "Hey." I say, "Look here, I don't want to fight."
- T: Good.
- T: If someone put their hands on you, you would make sure they knew that you weren't frightened, and you would simply say: "I don't want to fight, but it doesn't mean I can't fight."
- P: Right.
- T: "So if I have to fight I will."
- P: Right. Right.'

T: So that's a high risk situation and that has less chance of happening now, since you're not hanging out in the bars.

P: Right.

Because the subject was reluctant to name high-risk situations that could lead to relapse, the therapist named them for him, giving him examples of the types of situations that might result in anger and high arousal. She wanted the subject to be aware of anger risks in the future. He responded that he would cope by withdrawing from situations that triggered his anger:

T: Okay. (Laughing) Before you said "nothing," you were thinking about nothing. All right, you're not really anticipating any stressful situations. Yet you know I know you a little now, and I know that when people do "dumb" things, you respond. So if you are in a restaurant and you order and it takes 45 minutes that's going to bother you. If you go to the bank and the teller is rude to you, that's going to bother you. If people treat you inhumanely or without dignity that will bother you. So how are you going to deal with just these little things that happen to all of us everyday, sometimes several time a day, such as when people are rude to us? It might not be personal, but it sure feels personal when it's happening. You know, if you're hungry and you place an order and you're paying good money, you want your food and yet there is a good chance something will get in the way and you'll have to wait. How are you going to deal with these minor stresses? Because the minor stresses, such as the ones I just listed, can lead to heart attacks and strokes.

P: Uh-hmm.

T: The issue is when to watch for relapses. There's a couple of different kinds of relapses you could have experienced. One of them was what I called the anger-out relapse, where you get frustrated and say or do things that you might regret later. You could say some nasty things to people or maybe even threaten them with a fist or something. It could be very menacing and scary to certain people, when you get that way. The other relapse you could have is when you don't voice your anger. People or things bother you, but you hold it in. That anger that you hold in, that can also affect your health. So if your wife does something and you don't like it, and you think about it a lot and you dwell on it, or if the guy at work, does something and you dwell on it, you're not hurting them ...

P: Right.

T: They're not there.

P: Right.

T: You live with yourself 24 hours a day.

P: Thank you.

P: Yeah, yeah, well, just like the restaurant, if I go there and, I mean, if I gotta wait a long time, like, I just leave and go to another restaurant. You know what I mean, I mean food to me is food.

T: So let's say you left. Would you leave with an attitude or would you be very assertive and say to the waitress: "I'm not going to stay here because you're taking too long." Could you say that without an attitude?

P: No, no, because after, like, a long time, I mean, I'm just gonna leave.

T: So you wouldn't say anything to anybody.

- P: No. No. Because don't forget, like, I'm the one who gotta spend my money. You know so. Bye.
- T: The idea, though, is to try to deal with these stresses without making yourself too angry on the inside. I'm wondering, if you just left without saying anything if you wouldn't still feel angry on the inside?
- P: No.
- T: What about if a bank teller was rude to you or too slow, how would you handle that person?
- P: Well, like I just go to the next bank.
- T: All right, so you're just going to remove yourself from situations that bother you.
- P: Right.
- T: ... where people don't treat you well.
- P: Right, because there's more than one branch of the bank. You know, what I mean.
- T: So when you run into stressful situations, which, mostly for you, have to do with places where people don't treat you fairly or nicely, you'll just leave and find another.
- P: Yeah. Sure.
- T: Sounds good.

The therapist reinforced the use of social supports to prevent relapse. The subject had two, his wife and daughter, but he said that he liked to consult with himself. Like many cardiovascular patients, he could be over-responsible, emotionally closed, and unwilling to turn to others for help or advice (J. C. Pierrakos, Personal Communication, December 11, 1998).

T: So you have to work on those things to prevent relapses. You need to use your social supports, your wife and your daughter, so when things bother you, you can talk to both those people. Do you have anyone else? Can you talk to your doctor or any of the physicians here?

P: Uh um.

T: What about a minister?

P: Uh um.

T: So you're really pretty dependent on your wife and your daughter for people to talk to.

P: I, I mean and plus my own self.

T: Right. Okay.

P: You know what I mean? Uh, you know?

T: So you can go over things with yourself.

P: Right.

T: That's good. I think it's important to be able to do that. That you have that capability is good, especially if yourself is a balanced healthy self.

P: Hey. Right. Right. Right. Right.

T: (Laughing) You don't want to be talking to the part of you that's not too healthy.

P: No. No.

By the end of the protocol, the subject's attitudes concerning anger seemed to shift. He realized anger was not an appropriate response to life's stressors. When asked about the benefits of this work, he said that he believed the eight-sessions helped him to be more himself and to be a better person. In this section, anger-management strategies were reviewed:

T: Okay. Now let's say you found yourself getting angry. What kinds of things might you say to yourself to calm yourself down? If you had to tell yourself stuff to make yourself calmer, what would you say?

P: Well, like, I tell myself: "Butch, it ain't worth it."

T: So you could just say, "it ain't worth it" over and over again.

P: Right. Right. Right.

T: What are some of the benefits of helping yourself so you're not so angry? What would you get out of that?

P: Well, I like being me.

T: Okay. Good. I like that. That's the best answer you could give: "being me."

P: Yeah.

T: What are the strategies, besides "it ain't worth it" will you use? What other things that we learned are you going to use when you start to get angry.

P: I mean, don't let nobody be, what you say, intimidating.

T: What about some of the breathing exercises? The staccato breathing; would you use some of those strategies to help you calm down?

P: Well, well, like I feel as though that I, you know, I'm kind of a better person now.

T: Okay.

P: Really.

Summary. In the final session of the protocol, the agenda was set, homework was reviewed, recent anger was discussed, and the subject was affirmed for his

improvement in dealing with it (Dattilio & Freeman, 1992; Meichenbaum, 1996). Reinforcement of behavior change was an integral part of the program. In addition, the relaxation exercises were reviewed and practiced (DiTomasso, 2000). During a role-play reversal that dealt with anger, assertive communications skills were practiced (Beck et al., 1990). Relapse situations most likely to trigger the subject's anger and rage were identified (Meichenbaum, 1996). Coping mechanisms were reviewed and the difficulty the subject had telling others what was bothering him was noted; rather than communicating directly, his preference was to leave the situation. Continued practice was assigned and directions for the one-month follow-up period were provided. The assignment to self-monitor during the follow-up period was given (DiTomasso & Colameco, 1982).

Chapter 3

Results

The investigator hypothesized that when cognitive-behavioral interventions for the expression or control of anger were introduced to an essential hypertension (EH) patient with clinically significant levels of anger in an eight-session therapy protocol, blood pressure (BP) measures would decrease, coping mechanisms would be enhanced, and the behavior associated with anger would be transformed to a more rational and reasoned communications approach, demonstrated by scores falling between the 25th and the 75th percentile on the State-Trait Anger Inventory-2 [STAXI-2] (Spielberger, 1999). The research questions were: 1) To what extent would a high-anger, male EH patient improve his ability to express or control anger appropriately after receiving an eight-session protocol designed for anger-management; and 2) To what extent would BP measures decrease following the protocol? Four types of measures were used to assess these changes: psychophysiological, standardized, subjective, and qualitative. The results are discussed in the following sections.

Psychophysiological Measures

The psychophysiological measures used included medical and self-monitoring of BP (NIH, 1997). Blood pressure readings provided by the physician's assistant were conducted in the clinic setting at baseline, following each session of the protocol, and once during the one-month, follow-up period (Table 1). The medical readings were compared with the self-monitored readings to establish reliability and to identify the existence of "white coat" contamination. Table 2 compares physician assistant and self-monitored BP averages for the four phases of the study.

The two medical BP readings that were taken during prestudy, on 3/13/03 and 4/22/03, averaged 131/76 and fell into the high-normal/normal range (NIH, 1997). The medical BP average for the first half of the study, sessions 1-4, (6/10/03 - 7/1/03) was 117.5/75, and the medical BP average for the second half of the study, sessions 5-8, (7/8/03 - 7/25/03) was 117/75, both in the optimal range (NIH). The medical BP reported at poststudy, on 8/15/03, was 120/84, the systolic blood pressure (SBP) in the optimal range and the diastolic blood pressure (DBP) in the normal range.

An analysis of the weekly medical BP measures (Table 1) shows that: 1) a pre-intervention reading of 142/82 was reported on 4/22/03, the SBP indicating Stage 1 hypertension, and the DBP in the normal range (NIH, 1997); 2) seven of the eight medical readings taken during the study fell into the optimal category (SBP<120,DBP<80); 3) a higher reading was obtained at the end of session two (6/20/03), SBP = 131, high-normal, and DBP = 80, normal; and 4) at poststudy,

the DBP of 84 was higher than the DBP readings during the protocol. The medical results show that SBP decreased from high normal at baseline to optimal during the study and poststudy periods, and the DBP remained in the optimal range until poststudy when it increased to normal.

The subject took his Blood Pressure (BP) three times per week, after a baseline period of a week, during which he took it for six days (Table 3). The three daily measurements were averaged to determine the weekly averages, reported in Table 4. Through the sixth week of the study, the weekly averages varied, decreasing and increasing. Following session one, the weekly average BP was 119.16/65.50, after session three it was 113.50/70.33, and after session four it was 123.83/72.83. However, following session six, the self-monitored, weekly averages decreased. The SBP did not rise above 114.16 and was as low as 105.83, and the DBP did not rise above 71 and was as low as 62.50. This decrease in BP parallels a decrease in the anger scores on the standardized tests, discussed at a later point in this chapter.

The six baseline, daily measures, the 24 study measures, three for each of the 8-weeks of the protocol, and the 12 poststudy scores, three for each of the four week, poststudy period, are presented in Table 3. When the daily scores were examined individually, the highest measures were found at baseline (6/5/03: 125.5/71; 6/8/03: 144/78), following the first session (6/15/03: 122/71), following the second session (6/22/03: 128/69), and following the fifth session (7/13/03: 127/71; 7/14/03: 126.5/73.5). After the sixth session, the daily BP readings decreased to 114/71 and below, remaining at the optimal level.

The self-monitored BP averages for the four phases of the study (Table 2) were: baseline period (5/27/03 - 6/10/03) [121.58/69.66], SBP normal and DBP optimal; first half of the study, week one through four (6/10/03 – 7/7/03) [116.58/67.16], both SBP and DBP in the optimal range; second half of the study, week five through eight (7/8/03 – 8/3/03) [113.95/67.99], in the optimal range; and poststudy period, week 10 through 14 (8/4/03 – 9/4/03), [109.78/65.66], in the optimal range. Although the subject took his prescribed BP medication throughout the study, his average self-monitored BP decreased from 121/67.66 at baseline to 109.58/65.33 at poststudy, supporting the hypothesis that an anger-management protocol for a high anger EH patient leads to a decrease in BP.

The self-monitored, BP averages for the four phases of the study were compared with the medical BP averages for the same periods (Table 2) in order to establish reliability and/or “white coat” hypertension. Although the self-monitored measurements were lower than the medical measurements, they reflected a similar pattern. Both were higher at baseline (Medical = 131/76; Self = 121.58/69.66) than during the eight-week protocol (Medical = 117.5/72 and 117/75; Self = 116.58/67.16 and 113.95/67.99). A difference was found at poststudy (Medical = 120/84; Self = 109.78/65.66); the self-monitored SBP and DBP decreased, the medical DBP rose. The higher medical BP reading may reflect “white coat” hypertension due to fear associated with negative medical findings. However, the difference may also reflect the devices utilized to measure BP. The clinic used a calibrated instrument and the subject used a digital instrument.

The results show that SBP and DBP levels decreased during and after the eight-week protocol, remaining at a decreased level through the one month follow-up period. These results were strongly visible in the self-monitored BP records (Tables 2, 3 and 4); however, they were seen in the medical readings as well (Tables 1 and 2).

Standardized, Self-report Instruments

The standardized instruments used in this study to measure anger and coping skills included the State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999), the Multidimensional Anger Inventory [MAI] (Siegel, 1986), the Mahan and DiTomaso Anger Scale [MAD-AS] (Mahan, 2001), and the Social-Problem Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996). They were utilized at baseline (5/27/03), midstudy (7/1/03), termination (7/25/03), and one-month follow-up (9/4/03). The findings are described below.

The State Trait Anger Inventory-2 [STAXI-2] (Spielberger, 1999). The STAXI-2, a 57 item, self-report inventory that has six scales, five subscales, and an overall anger expression index, assessed the subject's ability to handle anger within normal "anger-in" and "anger-out" limits [Table 9] (Spielberger, 1999). The "State Anger" (S-Ang) scale measured the strength of current angry feelings and the extent that the subject wanted to express them (Spielberger, 1999, p. 2). The subject's S-Ang scores decreased from the 97th percentile at baseline, to the 60th percentile at mid study, to the 40th percentile at end-study, and the 40th percentile

at poststudy, showing a decrease from high anger, the 97th percentile, that interferes with optimal functioning, to normal anger levels, between the 25th and 75th percentiles [Table 9] (Spielberger), supporting the hypothesis.

Table 9

Percentile Corresponding to Scores on the STAXI-2 Subscales Across Phases of the Study

	<u>Week 1</u>	<u>Week 6</u>	<u>Week 10</u>	<u>Week 14</u>
	Baseline	Midstudy	*End-Study	Poststudy
Scales	5/27/03	7/1/03	7/25/03	9/4/03
S-Ang	97	60	-	40
S-Ang/F	85	65	-	40
S-Ang/V	95	50	-	50
S-Ang/P	98	50	-	50
T-Ang	95	96	-	1
T-Ang/T	85	95	-	30
T-Ang/R	65	85	-	4
AX-O	97	97	-	3
AX-I	90	75	-	40
AC-O	15	10	-	60
AC-I	80	15	-	45
AX INDEX	90	96	-	25

Note: The legend for the subscales is:

- S-Ang State Anger
- S-Ang/F State Anger/Feeling
- S-Ang/V State Anger/Verbal
- S-Ang/P State Anger/Physical
- T-Ang Trait Anger

T-Ang/T	Trait Anger/Temperament
T-Ang/R	Trait Anger/Reaction
AX-O	Anger Expressed Outwardly
AX-I	Anger Expressed Inwardly
AC-O	Anger Control Out
AC-I	Anger Control IN
AX INDEX	Total Scale Score

The End-Study scores (7/25/03) were invalid due to subject testing error.

The three S-Ang subscale scores decreased over the length of the study, as can be seen in Table 9. The "Feeling Angry" (S-Ang/F) score, measuring the intensity of current angry feelings, decreased from the 85th percentile at baseline, to the 65th percentile at midstudy, to the 40th percentile at end-study. It remained at the 40th percentile at poststudy. The "Feel Like Expressing Anger Verbally" (S-Ang/V) score, measuring the verbal communication of anger, decreased from the 95th percentile at baseline, to the 50th percentile at midstudy, end-study, and poststudy. The "Feel Like Expressing Anger Physically" (S-Ang/P) score was at the 98th percentile at baseline and at the 50th percentile at midstudy, end-study, and poststudy. The subject's scores decreased on all S-Ang subscales from high, irrational anger associated with EH and coronary heart disease (CHD), to scores in the normal range, supporting the hypothesis that a cognitive-behavioral, anger-management protocol reduces anger in a high anger, EH patient.

The "Trait Anger" (T-Ang) subscale measured how often angry feelings were experienced over time (Spielberger, 1999, p.2). The subject's T-Ang score was at

the 95th percentile at baseline and at the 96th percentile at mid study. It decreased to the 1st percentile at midstudy and at poststudy (Table 9). Scores that fall into the <25th percentile, reflect denial and repression (Spielberger, 1999, p.15). On the "Angry Temperament" (T-Ang/T) subscale (Table 9), measuring whether temperament disposed the subject to experience anger without provocation, he scored at the 85th percentile at baseline, the 95th percentile at midstudy, the 4th percentile at end-study, and the 30th percentile at poststudy. The high anger at baseline and midstudy decreased at end-study, reflecting denial, but returned to the normal range at poststudy. In the "Angry Reaction"(T-Ang/R) subscale (Table 9), that measures frequency of angry feelings in frustrating situations, the subject scored in the 65th percentile at baseline, the 85th percentile at midstudy, the 0 percentile at end-study, and the 4th percentile at poststudy. On this measure, the subject showed normal anger at baseline, high anger at midstudy, and low anger or denial, at end-study and poststudy. The T-Ang scores portray a decrease in the amount of inappropriate anger, but suggest that it is due to denial or repression (Spielberger, 1999, p. 15) rather than healthier coping mechanisms.

During the end-study assessment period, on 7/25/03, the subject did not understand the instructions for the STAXI-2 test, Part III, "How I Generally React When Angry or Furious"(Psychological Assessment Resources, 1999). He blackened the first circle in each column (the circles had the number 1 embedded in them), believing that he was showing minimal or no anger, without thoroughly reading the questions. Therefore the results for this section of the STAXI-2 (7/25/03) are dubious. To resolve this problem, the end-study scores for the scales, AX-O, AX-I, AC-O, AC-I, AX-Index, for 7/25/03, are given less weight, and the scores for the poststudy, for 9/4/03, are given more. In addition,

the results from the other standardized tests, the MAI, MAD-AS, and SPSI, were used to gauge the state of his anger at end-study.

The "Anger Expression-Out" (AX-O) scale measured the frequency with which the subject expressed angry feelings in an aggressive style (Table 9). The subject's scores on this scale were at the 97th percentile at baseline and midstudy, indicating high anger that was both socially inappropriate and threatening to his cardiovascular health. By end-study and poststudy, the subject's scores had decreased to the 1st percentile and 3rd percentile consecutively, suggesting that the change in his score was due to denial (Spielberger, 1999).

The "Anger Expression-In" (AX-I) scale measured the frequency that the subject experienced angry feelings but suppressed them [Table 9] (Spielberger, 1999). The subject's score on the AX-I scale was in the 90th percentile at baseline, the 75th percentile at midstudy, the 1st percentile at end-study, and the 40th percentile at poststudy. The high anger at baseline, decreased to the normal range by midstudy, and remained in the normal range at poststudy. The score of 1st percentile at end-study could be a result of error.

The "Anger Control-Out" (AC-O) scale looked at the subject's ability to control anger so that it was not expressed outwardly toward others [Table 9] (Spielberger, 1999). At baseline, the subject's score on the AC-O scale was at the 15th percentile, indicating an attempt to control his anger through denial or repression. It decreased to the 10th percentile at midstudy, indicating an even stronger attempt to avoid his anger. At end study this scale could not be scored due to subject error, and by poststudy it increased to the 60th percentile, the normal range, suggesting that the subject had attained better control of his anger. The "Anger Control-In" (AC-I) scale, measured the subject's ability to control his

anger by attempting to calm down or relax [Table 9](Spielberger). The subject's score on this scale was in the 80th percentile at baseline, in the 15th percentile at midstudy, not scorable at end-study, and in the 45th percentile at poststudy. A decrease in AC-I from a baseline high to a poststudy normal showed that the subject learned mechanisms to relax.

The hypothesis that an 8-week, cognitive-behavioral, anger-management protocol for a high anger EH patient would lead to a decrease in the Anger Expression Index, (AX-Index), an index that reflects the integration of the AX-O, AX-I, AC-O, and AC-I scales, was supported. The AX-Index score was at the 90th percentile at baseline, the 96th percentile at midstudy, the 90th percentile at end-study (due to testing error), and the 25th percentile at poststudy, the normal anger range (Table 9).

The Multidimensional Anger Inventory [MAI], (Siegel, 1986). The MAI, a 38-item, self-report inventory, was designed to assess cognitive, behavioral, and affective aspects of anger that are relevant to cardiovascular disease and hypertension (Siegel). Dimensions of anger assessed by the five subscales included frequency, duration, magnitude of anger, mode of expression ["anger-in" and "anger-out"], hostile outlook, and range of anger eliciting situations (Table 10).

The subject's score on the "Anger Arousal" (AA) subscale, which explored frequency, duration, and magnitude of anger, was above the 85th percentile at baseline (5/27/03) and midstudy (7/1/03) and below the 15th percentile at end-study (7/25/03) and poststudy (9/4/03) [Table 10]. The "Range of

Anger-Eliciting Situations" (RAS) subscale identified how characteristic it was for the subject to become angry in given situations. The subject's score was above the 85th percentile at baseline (5/27/03) and midstudy (7/1/03) and below the 15th percentile at end-study (7/25/03) and poststudy (9/4/03) [Table 10]. On the "Hostile Outlook" (HO) subscale, which focused on attitudinal aspects of anger, such as suspicion, guilt, negativism, and resentment, the subject scored above the 85th percentile at baseline (5/27/03) and midstudy (7/1/03) and below the 15th percentile at end-study (7/25/03) and poststudy (9/4/03) [Table 10]. The "Anger-Out" (AO) subscale indicated how often the subject expressed his anger or annoyance, including physical aggression. The subject's score was above the 85th percentile at baseline (5/27/03) and midstudy (7/1/03), below the 15th percentile at end-study (7/25/03), and at the 40th percentile at poststudy (9/4/03) [Table 10]. The "Anger-In" (AI) subscale looked at how often the subject held in his anger. His score was above the 85th percentile at baseline (5/27/03) and at midstudy (7/1/03) and below the 15th percentile at end-study (7/25/03) and at poststudy (9/4/03) [Table 10].

The subject's total MAI score was above the 85th percentile at baseline (5/27/03) and at midstudy (7/1/03) and below the 15th percentile at end-study (7/25/03) and at poststudy (9/4/03) [Table 10]. The five subscales, as well as the total MAI score, indicate that the subject scored in the high anger category, during the prestudy and the midstudy period. These scores also placed him in the range of cardiovascular and hypertensive risk (Siegel, 1986). By end-study and poststudy the subject's scores decreased to normal anger in all areas, illustrating normotensive health patterns and supporting the hypothesis.

Table 10

Percentile Corresponding to Scores on the MAI Subscales Across Phases of the Study

	<u>Week 1</u>	<u>Week 6</u>	<u>Week 10</u>	<u>Week 14</u>
	<u>Baseline</u>	<u>Mid-Study</u>	<u>End-Study</u>	<u>Post-Study</u>
Scale	5/27/03	7/1/03	7/25/03	9/4/03
AA	>85	>85	<15	<15
RAS	>85	>85	<15	<15
HO	>85	>85	<15	<15
AO	>85	>85	<15	40
AI	>85	>85	<15	<15
Total MAI	>85	>85	<15	<15

Note: The legend for the subscales is:

- AA Anger Arousal
- RAS Range of Anger Situations
- HO Hostile Outlook
- AO Anger-Out
- AI Anger-In
- Total MAI Total Scale Score

The Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001). The Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001) emphasized multidimensions of anger, measuring the physical, cognitive, and behavioral components as well as the frequency, severity, expression, and impact upon the subject. Although the MAD-AS contained seven subscales: "Anger Dyscontrol," "Angry Cognitions," "Verbal Expression of Anger," "Physiological Arousal," "Anger Justification/Blame," "Externalization of Anger," and "Difficulty with Anger Resolution," the total scale score was utilized in this study. Normed on psychiatric patients, rather than cardiovascular and hypertensive patients, its data was used to support the findings from the STAXI-2 and MAI. The results (Table 11) show that the subject's scored at the 98th percentile at prestudy (5/27/03) and at the 96th percentile at midstudy (7/1/03), placing him in a high anger group with scores comparative to those of inpatient psychiatric patients with Cluster B personality traits (Mahan, 2001). At end-study (7/25/03) and poststudy (9/4/03), the subject's scored at <.8 percentile and the .5 percentile [Table 11], respectively, representative of normal or low anger, and a normal, non-psychiatric group. The results indicate that the subject's anger decreased by the end of the 8-week protocol through the poststudy period [Table 11].

Table 11

Percentile That Corresponds to Raw Scores on the MAD-AS Across Phases of the Study

	<u>Week 1</u>	<u>Week 6</u>	<u>Week 10</u>	<u>Week 14</u>
	Baseline	Mid-Study	End-Study	Post-Study
<u>Scale</u>	5/27/03	7/1/03	7/25/03	9/4/03
MADAS	98	94	<.8	0.5

Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996). The Social-Problem Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996) is based on the theory that those who solve problems effectively experience less psychological distress and cope with problems in living more efficiently than those less skilled in problem-solving. The SPSI-R consists of 52 items and five scales: "Positive Problem Orientation" (PPO), "Negative Problem Orientation" (NPO), "Rational Problem Solving" (RPS), "Impulsivity/Carelessness Scale" (ICS), and "Avoidance Style" (AS) (D'Zurilla et al). Findings regarding the subject's scores, in comparison to the normed populations, are described in this section and presented in Table 12.

The PPO scale reflected the subject's ability to see a problem as a challenge, believe that he could solve it, and create a plan to do so in a reasonable amount of time (D'Zurilla et al., 1996). At baseline (5/27/03), the subject's raw score, 16, indicated that he had a more positive orientation toward problem solving than the average elderly adult [Age 60 - 80] ($M = 11.64$, $SD = 3.62$). It decreased to 10 at midstudy (7/3/03), slightly less than average, returned to 16 at end-study

Table 12

Raw and Standard Scores for the SPSI Subscales for the Four Phases of the Study

Scale	<u>Baseline</u>		<u>Mid-Study</u>		<u>End-Study</u>		<u>Post-Study</u>	
	Week 1		Week 6		Week 10		Week 14	
	5/27/03		7/1/03		7/25/03		9/4/03	
	Raw	SS	Raw	SS	Raw	SS	Raw	SS
PPO	17	122	10	93	16	118	19	130
NPO	33	136	26	124	6	90	4	86
RPS	37	95	43	101	49	108	80	141
ICS	29	142	20	120	15	108	7	90
AS	19	130	13	112	16	121	4	86
SPST	8.33		9.69		13.26		18.1	

Note: Raw equal's raw scores and SS equals's standard scores. The following legend provides the explanation of each subscale.

- PPO Positive Problem Orientation
- NPO Negative Problem Orientation
- RPS Rational Problem Solving
- ICS Impulsivity/Carelessness
- AS Avoidance Style
- SPST Social Problem Solving Total

(7/25/03) and increased to 19 at poststudy (9/4/03), depicting a very positive orientation toward problems [Table 12] (D'Zurilla et al., 1996). The PPO standard scores of 122 at baseline, 93 at midstudy, 118 at end-study, and 130 at poststudy, indicated that the subject began in the "Above Norm Group Average" range [115 – 129] and finished at poststudy in the "Very Much Above Norm Group Average" range [130 – 144] [Table 12] (D'Zurilla et al., 2002).

The NPO scale depicted the subject's perception of problems as threats, his doubt in his ability to solve them, and his frustration at having problems in his life (D'Zurilla et al., 1996). The subject's raw score at baseline (5/27/03) was 33. It decreased to 26 at midstudy (7/1/03), to 6 at end-study (7/25/03), and to 4 at poststudy (9/4/03) [Table 12]. His NPO scores at baseline and midstudy were higher than average for normal elderly adults [Age 60 – 80] ($M = 12.06$, $SD = 8.78$) and more in line with adult cancer patients ($M = 22.03$, $SD = 9.77$) and depressed outpatients [$M = 29.07$, $SD = 8.64$] [Table 12] (D'Zurilla et al.). At end-study and poststudy, his scores decreased to normal and below normal levels, indicating that he no longer perceived problems as threatening or doubted his ability to deal with them. Translated into standard scores, the subject's score was 136 at baseline, 124 at midstudy, 90 at end-study, and 86 at poststudy. These scores placed him in the "Very Much Above Norm Group Average," (130 – 144) at baseline, in the "Above Norm Group Average," (115-129) at midstudy, and in the "Norm Group Average," (86-114) at end-study and poststudy [Table 12], suggesting that his perception of problems as negative had changed during the course of the study (D'Zurilla et al., 2002).

The RPS scale measured whether the subject was capable of applying effective problem-solving principles and methods, such as gathering facts and

identifying obstacles (D'Zurilla et al., 1996). The subject's RPS raw score was 37 at baseline (5/27/03), 43 at midstudy (7/1/03), 49 at end-study (7/25/03), and 80 at poststudy (9/4/03) [Table 12]. By midstudy, the subject had surpassed the mean for normal elderly adults [Age 60 –80] ($M = 41.82$, $SD = 13.98$) (D'Zurilla et al., 1996) and even more so by poststudy [Table 12]. By the end of the protocol, he was able to solve problems well (D'Zurilla et al.), suggesting that his anger was contained so that it did not interfere with his problem-solving. The standard scores for the RPS scale support this analysis. They increased from 95 at baseline, to 101 at midstudy, to 108 at end-study, and to 141 at poststudy (Table 12). Although he began in the "Norm Group Average" [86-114], and remained there through end-study, by poststudy, he was in the "Very Much Above Norm Group Average" [130-144] (D'Zurilla et al., 2002).

The "Impulsivity/Carelessness Style Scale" identified whether the subject considered few solutions and acted upon his initial thought or idea (D'Zurilla et al., 1996). The subject's raw score at baseline (5/27/03) was 29, higher than the mean for depressed out-patients ($M = 21.04$, $SD = 7.92$) (Table 12) (D'Zurilla et al.). His raw ICS scores decreased over the time of the protocol, to 20 at midstudy (7/1/03), to 15 at end-study (7/25/03), and to 7 at poststudy (9/4/03) [Table 12]. The mean ICS score for normal elderly adults [Age 60 – 80] was 11.43 ($SD = 6.34$) (D'Zurilla et al.). The subject fell below the mean by poststudy, suggesting that he had learned to control his impulsive behavior during the anger-management protocol. His standard scores on the ICS scale were 142 at baseline, 120 at midstudy, 108 at end-study, and 90 at poststudy (Table 12). At baseline and midstudy, he was in the "Very Much Above Norm Group Average"

[130-144] and at end-study and poststudy in the "Norm Group Average" [86-114], showing that he had curbed his impulses (D'Zurilla et al., 2002).

The AS scale identified the subject's propensity to avoid problems rather than confront them (D'Zurilla et al., 1996). On the AS scale, the subject's raw score was 19 at baseline (5/27/03), 13 at midstudy (7/1/03), 16 at end-study (7/25/03), and 4 at poststudy (9/4/03) [Table 12]. The subject's scores were relatively high at baseline, midstudy, and end-study, analogous to cancer patients ($M = 16.19$, $SD = 6.34$) and depressed patients ($M = 18.04$, $SD = 6.10$). These scores suggest that he had difficulty confronting his problems, even during the protocol (D'Zurilla et al., 1996). By poststudy his raw score decreased to 4, showing that he was less avoidant than those in the average elderly group (Age 60 – 80), [$M = 8.71$, $SD = 5.17$] (D'Zurilla et al., 1996). The subject's standard scores changed from 130 at baseline, to 112 at midstudy, to 121 at end-study, and to 86 at poststudy (Table 12). He moved from the "Very Much Above Norm Group Average" (130 – 144) to the "Norm Group Average" (86 – 114), to the "Above Norm Group Average" (115 – 129), to the "Norm Group Average," indicating less avoidant behavior by the end of the study (D'Zurilla et al., 2002).

The Social Problem-Solving Total (SPST) score, a global indicator of a person's problem-solving ability, was 8.33 at baseline (5/27/03), 9.69 at midstudy (7/1/03), 13.26 at end-study (7/27/03), and 18.1 at poststudy (9/4/03) [Table 12]. His total score increased during the length of the study, indicating better problem-solving skills and better coping skills as his capacity to control and express his anger appropriately increased. When translated to standard scores, the subject's SPST changed from 74 at baseline and 82 at midstudy, both scores in the "Below Norm Group Average" problem-solving range (71 - 85), to

102 at end-study, the “Norm Group Average” range (86 – 114), to 129 at poststudy, the “Above Norm Group Average” range (115-129) [Table 12]. His problem-solving and coping skills increased throughout the study, reflecting more constructive and effective problem-solving behavior (D’Zurilla et al., 2002).

Subjective Assessment

The Degree Of Subjective Anxiety Scale [SUDS] (Wolpe, 1973) was used to identify the degree of anxiety or discomfort the participant experienced during the eight therapy sessions (Table 13). This instrument was used at the end of each session to determine if the therapy was associated with a rise in BP, rather than the expected decrease in BP. The results of the SUDS (Table 13) were that subjective anxiety decreased between the first half of the protocol, sessions one through four, (6/10/03 – 7/1/03), and the second half of the protocol, sessions five through eight, (7/8/03 – 7/25/03), from an average of 21.25 to an average of 8.75 [Table 13]. In general, the subject experienced minimal anxiety and discomfort, during the protocol. In sessions 1, 2, 5, 6, 7, and 8, his SUDS score was below 15. The subject’s highest SUDS scores were on week 3 (Score = 35) and week 4 (Score = 25).

Qualitative Assessment

The Anger Events Inventory, a qualitative instrument developed by the author, was used in this study for self-monitoring (Appendix B) and

Table 13

Weekly Scores on the SUDS and Averages for Midstudy

And End-Study

<u>Session</u>	<u>Date</u>	<u>Score</u>	<u>Averages</u>
1	6/10/03	10	
2	6/20/03	15	
3	6/25/03	35	
4	7/1/03	25	MS 21.25
5	7/8/03	15	
6	7/15/03	10	
7	7/21/03	5	
8	7/25/03	5	ES 8.75

Note: The legend is:

MS equals Midstudy

ES equals End-Study

significant-other observations (Appendix C) concerning the number and kind of irrational, violent, or impulsive angry acts, and the number and kind of unexpressed or withheld angry experiences, as well as the intensity and duration of each. The wife, who lived at home with the subject, provided collateral data, giving an additional picture of anger in the home environment (DiTomasso & Colameco, 1982; Knelp et al., 1993). As can be seen from Table 5, the subject filled out the Anger Events Inventory 5 out of 42 possible times, three times during baseline, on 6/4/03, 6/5/03, 6/8/03, and two times during the study proper, 6/23/03 and 7/4/03. The wife wrote personal statements on her forms 39 out of the 42 possible days (Tables 5 and 7). She utilized the form as it was designated on three days: 6/23/04, 6/30/04, and 7/4/03. The wife reported anger on 11 days, 3 during the study and 8 during the poststudy period (Table 5).

A comparison of the data from the five-subject Anger Events Inventory forms and the three-partner Anger Events Inventory forms is presented in Table 6. Regarding symptoms of anger, the subject described: "pounding/racing heart" (6/4/03, 6/23/03), "trouble sleeping" (6/5/03), "lightheaded" (6/8/03), "trembling" (6/23/03, 7/4/03), "jumpy" (7/4/03), and "shaking" (7/4/03). His wife described his symptoms as: "on edge" (6/23/03) and "irritability" (6/30/03, 7/4/03). According to the subject, the incidents that triggered his anger were: people sitting on his steps (6/4/03), people playing loud music (6/5/03), coworker painting wrong (6/8/03), coworker not doing his job (6/23/03), and police brutality (7/4/03). The wife attributed the subject's anger to: getting cold from the fan (6/23/03), a work-related incident (6/30/03), and police brutality (7/4/03). Her answers show some correspondence with his; however, on 6/23/03 they each provided a different reason for his anger.

The subject did not explain what thoughts preceded his anger on 6/4/03 and 6/5/03. On (6/8/03) and (6/23/03), his thought was: "felt like walking out," and on 7/4/03, his thought was: "this is unfair"(Table 6). The wife did not provide a thought for 6/23/03; for 6/30/03, she suggested that a judgment about his coworker preceded the anger, and for 7/4/03, she believed the subject's thought processes concerned fairness and authority abusing power.

In response to how easy or difficult it was to get angry, the subject's scores decreased from 2 (very easy) [6/4/03] to 3 (easy) [6/5/03, 6/8/03], to 4 (slightly difficult) [6/23/03], to 6 (difficult) [7/4/03] (Table 6). His wife graded his anger as 3 (easy) [6/23/03], as 3 (easy)[6/30/03], and as 1 (extremely easy) [7/4/03]. For strength of anger, the subject gave himself a 6 (strong) on 6/4/03, a 5 (high medium) on 6/5/03, 6/8/03, and 6/23/03, and a 7 (severe) on 7/4/03 (Table 6). His wife gave him a 1 (mild) on 6/23/03, a 5 (high medium) on 6/30/03, and a 7 (severe) on 7/4/03 (Table 6). They graded the strength of his anger differently on 6/23/03, however, they were most likely addressing different incidents.

The subject described his anger as "anger-in" on 6/4/03 and "anger-out" on 6/5/03, 6/8/03, 6/23/03, 6/30/03, and 7/4/03 (Table 6). In all three incidents the wife characterized his anger as "anger-out" (6/23/03, 6/30/03, 7/4/03) (Table 6). They both saw the subject as more impulsive and explosive than contained. In reference to the recipient of the subject's anger, on 6/4/03 and 6/5/03, the subject wrote that it was directed toward his neighbors, on 6/8/03 and 6/23/03, it was directed toward his coworker, and on 7/4/03, it was directed toward the police (Table 6). His wife believed that his anger was directed toward herself on 6/23/03, toward his co-worker on 6/30/03, and toward the police on 7/4/03 (Table 6). For the final category, length of anger, the

subject described his anger lasting 15 minutes on 6/4/03, 12 hours on 6/5/03, 30 minutes on 6/8/03, leaving it blank on 6/23/03, and 30 minutes on 7/4/03. The wife thought his anger lasted two minutes on 6/23/03, nine hours on 6/30/03, and she left it blank on 7/4/03 (Table 6).

The wife reported anger on 11 days, whereas the subject reported anger on 5 days, and the anger they reported occurred at different points in the study (Table 5). During the baseline period (6/3/03 – 6/9/03), the subject filled out the Anger Events Inventory three times. For the same period, the wife reported “no anger,” writing: “he had a very good day, no outbursts of anger (Table 7).” In contrast, during the 30-day, poststudy period, the subject reported “no anger” on all 12 forms he returned (Table 5) and the wife reported “anger” on 8 of the 12 forms she returned (Table 7). In terms of symptoms of anger, there is some correspondence, with the subject choosing words such as “jumpy” and the wife choosing words such as “on edge.” They also agreed on events triggering his anger (coworker, police) and thoughts preceding the anger (judgments, fairness), but they lacked agreement on others (neighbors, fan). They differed on the ease with which the subject got angry. He saw it as more difficult for him to become angry as the study progressed; whereas she saw no change. They graded the strength of his anger similarly, “strong” and “severe” and both saw him as having more “anger-out” than “anger-in.” They agreed on some recipients (coworker and police), but not on others (neighbors and the wife, herself). They each perceived that his anger varied in time lasting hours or minutes depending on the situation (Table 6).

Validity

The sessions were tape-recorded so that the results of the study could be transcribed and validated. A doctoral level psychologist reviewed the transcripts of the tapes independently in order to ascertain whether the sessions reflected the written protocol. She was provided with an outline describing what was to be covered in each of the eight-sessions and a typed transcript of each session (typed by a medical transcription service). She read each transcript and wrote down the page number on which she found the item listed in the outline for each session (Table 8). Her results validated the study, showing that all topics in the outline were covered in the eight-sessions.

Summary

The psychophysiological assessment showed a decrease in BP over the length of the study. The physician's assistant readings reported that the SBP decreased from high normal at baseline to optimal through poststudy. The DBP was optimal until poststudy when it increased to normal, possibly due to "white-coat hypertension." From session six through the poststudy period, the weekly self-monitored BP averages decreased consistently. The SBP did not rise above 114.16 and was as low as 105.83 and the DBP did not rise above 71 and was as low as 62.5. The self-monitored BP average decreased from 121/67.66 at baseline to 109.58/65.33 at poststudy, supporting the hypothesis that an anger management protocol for a high anger EH patient leads to a decrease in BP.

The subject's State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999) total scale and subscale scores decreased from high anger, above the 75th percentile at baseline, to normal anger, between the 25th and the 75th percentile, and in some cases to below normal, signifying denial, by poststudy. The AX-Index score decreased from the 90th percentile at baseline, reflecting high-anger, to the 25th percentile at poststudy, representing the normal anger range.

The Multidimensional Anger Inventory's [MAI] (Siegel, 1986) total scale score and subscales scores demonstrated high anger at prestudy and midstudy. By end-study and poststudy the scores reflected normal anger. Findings from the Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001) showed that the subject's scores decreased from the 98th percentile at prestudy to the .5 percentile, at poststudy, representative of normal anger, and non-psychiatric groups.

The Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996) total scale score increased during the study, indicating better problem-solving skills and better coping skills as the subject's capacity to control and express his anger appropriately increased. When translated to standard scores, the subject's SPST changed from 74 at baseline, to 82 at midstudy, to 102 at end-study, to 129 at poststudy, showing an increase throughout the protocol in problem-solving ability and coping skills (D'Zurilla et al., 2002). The subject's standardized test scores (STAXI-2, MAI, MAD-AS, SPSI) did not change until after the fourth week of the protocol. This finding mirrored self-monitored BP, which did not stabilize at the optimal level until the second half of the protocol (weeks 6 through 8).

The results of the SUDS showed that subjective anxiety decreased between the first half of the protocol and the second half of the protocol. Although the subject's anxiety was <25 percent, it decreased in the second half of the protocol, along with the standardized test scores and BP measurements.

The Anger Events Inventory, a qualitative instrument, showed differences and similarities between the subject's responses and his wife's responses. For symptoms of anger, events triggering the anger, strength of the anger, "anger-in" and "anger-out," and recipients of the anger, there was some correspondence. For the ease with which the subject got angry and the amount of time the anger lasted, they differed. In addition, the wife reported anger on 11 days and the subject on 5 days, at different points during the protocol.

A doctoral level psychologist, who reviewed the transcripts of the taped sessions independently in order to ascertain that the sessions reflected the written protocol, validated the study, showing that all topics in the outline were covered in the transcripts.

Chapter 4

Discussion

The investigator hypothesized that when cognitive-behavioral interventions for the expression or control of anger were introduced to an essential hypertension (EH) patient with a clinically significant level of anger in an eight-session therapy protocol, blood pressure (BP) measures would decrease, coping mechanisms would be enhanced, and the behavior associated with anger would be transformed to a more rational and reasoned communications approach, demonstrated by scores falling between the 25th and the 75th percentile on the State-Trait Anger Inventory-2[STAXI-2] (Spielberger, 1999). The research questions were: 1) To what extent would a high-anger, male EH patient improve his ability to express or control anger appropriately after receiving an eight-session protocol designed for anger-management and 2) To what extent would BP measures decrease following the protocol? Four types of measures were used to assess these changes: psychophysiological, standardized, subjective, and qualitative. Conclusions supporting the hypotheses that

anger-management sessions lead to a decrease in anger levels and BP levels and an increase in coping skills were suggested by the data. These conclusions are discussed in the following sections of this chapter.

Psychophysiological

The psychophysiological measures used included medical and self-monitoring of BP (NIH, 1997). Blood pressure readings were conducted in the medical clinic at baseline, following each session of the protocol, and once during the one-month, follow-up period (Table 1). The subject took his Blood Pressure (BP) three times per week, after a baseline period of a week, during which he took it for six days (Table 3). The medical readings were compared with the self-monitored readings to establish reliability and to identify the existence of “white coat” contamination. Table 2 compares physician assistant and self-monitored BP averages for the four phases of the study. The medical results show that SBP decreased from high normal at baseline to optimal during the study and poststudy periods, and the DBP remained in the optimal range until poststudy when it increased to normal. The higher medical DBP reading at poststudy may reflect “white coat” hypertension due to fear associated with negative medical findings. However, the difference may also reflect the devices utilized to measure BP. The clinic used a calibrated instrument and the subject used a digital instrument.

Following session six, the self-monitored, weekly BP averages decreased. The SBP did not rise above 114.16 and was as low as 105.83, and the DBP did not rise

above 71 and was as low as 62.50. This decrease in BP parallels a decrease in the anger scores on the standardized tests. Although the subject took his prescribed BP medication throughout the study, his average self-monitored BP decreased from 121/67.66 at baseline to 109.58/65.33 at poststudy, supporting the hypothesis that an anger-management protocol for an EH patient with a clinically significant level of anger leads to a decrease in BP. The results show that SBP and DBP levels decreased during and after the eight-week protocol, remaining at a decreased level through the one month follow-up period. These results were strongly visible in the self-monitored BP records (Tables 2, 3 and 4) and they are seen in the medical readings as well (Tables 1 and 2).

In addition, according to visual inspection of the results, the psychophysiological measures, particularly the self-monitored BP readings, but also those provided by the medical assistant, show that the subject's SBP decreased more than his DBP, Although each was in the optimal category through the final weeks of the study, the self-monitored SBP showed a greater decrease, falling from 121.58 to 109.78, whereas the DBP fell from 69.66 to 65.66. The decrease in SBP is not uncommon according to the literature (Melamed et al., 1993); more empirical studies have found a change in the SBP than in the DBP in relationship to stress and anger.

Standardized

The standardized instruments used in this study to measure anger and coping skills included the State-Trait Anger Expression Inventory-2 [STAXI-2]

(Spielberger, 1999), the Multidimensional Anger Inventory [MAI] (Siegel, 1986), the Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001)], and the Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996). They were utilized at baseline (5/27/03), midstudy (7/1/03), termination (7/25/03), and one-month follow-up (9/4/03).

The State Trait Anger Inventory-2 [STAXI-2] (Spielberger, 1999). The STAXI-2, a 57-item, self-report inventory that has six scales, five subscales, and an overall anger expression index, assessed the subject's ability to handle anger within normal "anger-in" and normal "anger-out" limits [Table 9] (Spielberger, 1999). Post-test scores were used for this analysis due to the subject's error in test-taking at end-study. During the end-study assessment period, on 7/25/03, the subject did not understand the instructions for the STAXI-2 test, Part III, "How I Generally React When Angry or Furious" (Psychological Assessment Resources, 1999). He blackened the first circle in each column (the circles had the number "1" embedded in them), believing that he was showing minimal or no anger, without thoroughly reading the questions.

The "State Anger" (S-Ang) scale measured the strength of current angry feelings and the extent that the subject wanted to express them. It showed a decrease from high anger, the 97th percentile at baseline, that interferes with optimal functioning, to normal anger levels, between the 25th and the 75th percentiles [Table 9] (Spielberger, 1999) supporting the hypothesis. The three S-Ang subscale scores: "Feeling Anger" (S-Ang/F), "Feel Like Expressing Anger Verbally" (S-Ang/V), and "Feel Like Expressing Anger Physically" (S-Ang/P) decreased over the length of the study, as can be seen in Table 9. The subject's

scores decreased on all S-Ang subscales from high, irrational anger associated with EH and CVD, to scores in the normal range, supporting the hypothesis that a cognitive-behavioral, anger-management protocol reduces anger in a high-anger, EH patient. The trait anger scores, reflective of temperament in time, did not display this same trend. Two of the trait subscales, T-Ang and T-ang/R were extremely low at post-test, 1st percentile and 4th percentile, indicating denial and repression of anger (Spielberger, 1999, p. 15). This same trend could be seen in the "anger-out" subtest, discussed below.

The "Anger Expression-Out" (AX-O) scale measured the frequency with which the subject expressed angry feelings in an aggressive style (Table 9). The subject's baseline score was indicative of anger that was both socially inappropriate and threatening to his cardiovascular health. The decrease in his score to the 3rd percentile at poststudy suggested that the change in his score was due to denial (Spielberger, 1999). Therefore, it is possible to conclude that the subject did not have as much success learning new mechanisms to cope with "anger-out" as he did with "anger-in." The "Anger Expression-In" (AX-I) scale measured the frequency that the subject experienced angry feelings but suppressed them [Table 9] (Spielberger, 1999). The high anger at baseline, decreased to the normal range by midstudy, and remained in the normal range at poststudy. At poststudy the "anger-in" subtest score was in the 40th percentile, indicating normal anger. The subject's "anger control-in" scores and "anger control-out" scores also moved into the normal range by poststudy. The "Anger Control-Out" (AC-O) scale looked at the subject's ability to control anger so that it was not expressed outwardly toward others [Table 9] (Spielberger). Whereas the subject registered in the 15th percentile at baseline on the AC-O scale, at

poststudy his score was in the 60th percentile, the normal anger category. This score indicated some control over an impulsive expression of aggression toward others. The “Anger Control-In” (AC-I) scale, measured the subject’s ability to control his anger by attempting to calm down or relax [Table 9](Spielberger). The AC-I scale score was at the 45th percentile at poststudy showing that he learned how to relax at stressful points.

The hypothesis that an eight-week, cognitive-behavioral, anger-management protocol for a high-anger EH patient would lead to a decrease in the Anger Expression Index, (AX-Index), an index that reflects the integration of the AX-O, AX-I, AC-O, and AC-I scales, was supported. The AX-Index score was at the 90th percentile at baseline, the 96th percentile at midstudy, the 90th percentile at end-study, (due to testing error), and the 25th percentile at poststudy, the normal anger range (Table 9). The subject’s placement in the 25th percentile at poststudy is just within the limits of normal anger; below the 25th percentile reflects denial and repression (Spielberger, 1999). Findings from the STAXI-2 indicated that the anger-management protocol, although it fulfilled the hypotheses, of a reduction in anger level to between the 25th and 75th percentiles on the STAXI-2 may not have had the same effect on all aspects of the subject’s anger. Future research needs to assess patients’ unique “anger-in” and “anger-out” needs, and whether their anger is more trait or state related.

The Multidimensional Anger Inventory [MAI], (Siegel, 1986). The MAI, a 38-item, self-report inventory, was designed to assess cognitive, behavioral, and affective aspects of anger that are relevant to cardiovascular disease and

hypertension (Siegel). Dimensions of anger assessed by the five subscales included frequency, duration, magnitude of anger, mode of expression [“anger-in” and “anger-out”], hostile outlook, and range of anger eliciting situations (Table 10). The subject’s total MAI score was above the 85th percentile at baseline (5/27/03) and at midstudy (7/1/03) and below the 15th percentile at end-study (7/25/03) and at poststudy (9/4/03) [Table 10]. The five subscales, as well as the total MAI score, indicated that the subject scored in the high anger category, during the prestudy and the midstudy period, placing him in the range of cardiovascular and hypertensive risk (Siegel, 1986). By end-study and poststudy the subject’s scores decreased to normal anger in all areas, illustrating normotensive health patterns and supporting the hypothesis.

Similar to the results of the STAXI-2, the results of the MAI showed that the subject did not make the exact same progress in each area. On the “anger-out” scale of the MAI, his score decreased to the 40th percentile at poststudy, but not to the <15th percentile as on the other subscales. This supports the suggested conclusion that the subject has made progress in the area of “anger-out,” but not as much as with the other aspects of his anger.

The Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001). The Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001) emphasized multidimensions of anger, measuring the physical, cognitive, and behavioral components as well as the frequency, severity, expression, and impact upon the subject. Although the MAD-AS contained seven subscales: “Anger Dyscontrol,” “Angry Cognitions,” “Verbal Expression of Anger,” “Physiological Arousal,” “Anger Justification/Blame,” “Externalization of Anger,” and “Difficulty with

Anger Resolution," the total scale score was utilized in this study. The results (Table 11) at baseline and midstudy placed him in a high-anger group with scores comparative to those of inpatient psychiatric patients with Cluster B personality traits (Mahan). At end-study and poststudy the subject's scores were representative of normal or low anger, and a normal, non-psychiatric group. The results indicate that the subject's anger decreased by the end of the eight-week protocol through the poststudy period (Table 11).

Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996). The Social-Problem Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996) is based on the theory that those who solve problems effectively experience less psychological distress and cope with problems in living more efficiently than those less skilled in problem-solving. The SPSI-R consists of 52 items and five scales: "Positive Problem Orientation" (PPO), "Negative Problem Orientation" (NPO), "Rational Problem Solving" (RPS), "Impulsivity/Carelessness Scale" (ICS), and "Avoidance Style" (AS) (D'Zurilla et al.).

The PPO scale reflected the subject's ability to see a problem as a challenge, believe that he could solve it, and create a plan to do so in a reasonable amount of time (D'Zurilla et al., 1996). At baseline, the subject's score indicated that he had a more positive orientation toward problem-solving than the average elderly adult. Although it decreased at midstudy, by poststudy his score depicted a very positive orientation toward problems [Table 12] The NPO scale depicted the subject's perception of problems as threats, his doubt in his ability to solve them, and his frustration at having problems in his life (D'Zurilla et al.). The NPO scores at baseline and midstudy were higher than average for normal elderly

adults and more in line with adult cancer patients and depressed outpatients. At end-study and poststudy, his scores decreased to normal and below normal levels, indicating that he no longer perceived problems as threatening or doubted his ability to deal with them. The RPS scale measured whether the subject was capable of applying effective problem-solving principles and methods, such as gathering facts and identifying obstacles (D'Zurilla et al.). By the end of the protocol, he was able to solve problems well (D'Zurilla et al.), suggesting that his anger was contained so that it did not interfere with his problem-solving (Table 12). The "Impulsivity/Carelessness Style Scale" identified whether the subject considered few solutions and acted upon his initial thought or idea (D'Zurilla et al.). The subject's raw score at baseline was higher than the mean for depressed out-patients (D'Zurilla et al.). By poststudy, his scores suggested that he had learned to control his impulsive behavior during the anger-management protocol (Table 12). The AS scale identified the subject's propensity to avoid problems, rather than confront them (D'Zurilla et al.). On the AS scale, the subject's scores were relatively high at baseline, midstudy, and end-study, analogous to cancer patients and depressed patients, suggesting that he had difficulty confronting his problems, even during the protocol (D'Zurilla et al.). By poststudy his score decreased showing that he was less avoidant than those in the average elderly group [Table 12] (D'Zurilla et al.). The Social Problem Solving Total (SPST) score is a global indicator of a person's problem-solving ability. His total score increased during the study, indicating better problem-solving skills and better coping skills as his capacity to control and express his anger appropriately increased [Table 12] (D'Zurilla et al., 2002). The subject's test scores supported

the hypothesis that coping skills would increase following an anger-management protocol.

Subjective

The Degree Of Subjective Anxiety Scale [SUDS] (Wolpe, 1973) was used to identify the degree of anxiety or discomfort the participant experienced during the eight therapy sessions (Table 13). This instrument was used at the end of each session to determine if the therapy was associated with a rise in BP, rather than the expected decrease in BP. The results of the SUDS (Table 13) were that subjective anxiety, although never high, decreased between the first half of the protocol, sessions one through four, and the second half of the protocol, sessions five through eight. This case study, although exploratory in nature, seems to suggest that an anger-management protocol for EH patients may also decrease anxiety. The relationship between anxiety and anger, its affects on EH patients, and the appropriate methodology to work with it, are topics worthy of future research.

Qualitative

The Anger Events Inventory, a qualitative instrument developed by the author, was used in this study for self-monitoring (Appendix B) and significant-other observations (Appendix C) concerning the number and kind of irrational, violent, or impulsive angry acts, and the number and kind of

unexpressed or withheld angry experiences, as well as the intensity and duration of each. The wife, who lived at home with the subject, provided collateral data, giving an additional picture of anger in the home environment (DiTomasso & Colameco, 1982; Knelp et al., 1993). The wife reported anger on 11 days (the wife's descriptive reports are provided in Table 7), whereas the subject reported anger on 5 days. The anger they reported occurred at different points in the study (Table 5). During the baseline period (6/3/03 – 6/9/03), the subject reported anger three times. For the same period, the wife reported "no anger," writing: "he had a very good day, no outbursts of anger (Table 7)." In contrast, during the 30 day, poststudy period, the subject reported "no anger" on all 12 forms he returned (Table 5) and the wife reported "anger" on 8 of the 12 forms she returned (Table 7). In terms of symptoms of anger, there is some correspondence, with the subject choosing words such as "jumpy" and the wife choosing words such as "on edge." They also agreed on events triggering his anger (coworker, police) and thoughts preceding the anger (judgments, fairness), but they lacked agreement on others (neighbors, fan). They differed on the ease with which the subject got angry. He saw it as more difficult for him to become angry as the study progressed; whereas she saw no change. They graded the strength of his anger similarly, "strong" and "severe" and both saw him as having more "anger-out" than "anger-in." They agreed on some recipients (coworker and police), but not on others (neighbors and the wife, herself). They each perceived that his anger varied in time, lasting hours or minutes depending on the situation (Table 6).

Because of the different ways that the subject and his wife responded to the Anger Events Inventory (Appendices B and C), it is suggested that this area be

emphasized in future research. Topics for consideration include: 1) whether the wife should be involved in the protocol and if so at what strategic points; 2) what belief systems and attributions about the subject's behavior shape the wife's conclusions; and 3) how much weight should the wife's responses receive versus the subject's descriptions of his own behavior?

Validity

The sessions were tape-recorded so that the results of the study could be transcribed and validated. A doctoral level psychologist reviewed the transcripts of the tapes independently in order to determine whether the sessions reflected the written protocol. She was provided with an outline describing what was to be covered in each of the eight-sessions and a typed transcript of each session (typed by a medical transcription service). She read each transcript and wrote down the page number on which she found the item listed in the outline for each session (Table 8). Her results validated the study, showing that all topics in the outline were covered in the eight-sessions.

The results of the STAXI-2, MAI, MAD-AS and SPSI, along with the BP measures, support the hypotheses of 1) decreased BP, 2) improved coping skills, and 3) decreased anger scores. The decrease in anger is specifically reflected by scores falling between the 25th percentile and the 75th percentile on the STAXI-2. The strength of a case study, such as this one, is that it has the ability to look at independent variables that work with unique behavior patterns. However, there are several limitations. One is that it lacks external validity and the ability to

generalize the results. Findings may not generalize to EH patients who: visit different physicians, take alternative medications, take no medication at all, or suffer from other illnesses besides EH. In addition, generalizability to EH patients from different areas of the country or from different countries, as well as to those who are members of other socio-economic classes, genders, races, ethnic groups, and religions may be limited.

Problems also exist with the use of pre-and post-testing. The inventories used in this study were not available in alternative forms. Therefore, the results could be prejudiced by a testing bias. There is no way to rule out error from pre-testing and its influence upon the results. Also, the interface between mind and body, in terms of measurement strategies, may be ambiguous. Data about an increase in coping and a decrease in anger may not be supported by the physical data, such as a drop in blood pressure, or vice versa. In fact, anxiety about the protocol, could conceivably be associated with a rise in BP even if anger is reduced. A final limitation involves the many techniques introduced during the eight-week protocol. It is impossible, in this exploratory research to analyze which were effective and which were less effective.

Although the outcome of this study is positive for this particular subject, it is advised that further research be conducted. One model for further research is presented in the Proposed Empirical Study section of this dissertation. It involves a multiple baseline, time-lag experimental design. If enough subjects were to participate, the design would have greater power. Future research could explore which therapeutic techniques are most capable of introducing change in the desired direction, as well as whether there are confounds due to the utilization of many techniques. Another question involves the appropriate length of an

anger-management protocol. In this study most of the changes occurred after the sixth week of the program, suggesting that an eight-to ten-week protocol is more appropriate than a four-or six-week protocol. Also an examination of the relationship between anger and anxiety, as it effects EH patients, merits further exploration. In this study, anxiety decreased when anger scores decreased.

Cognitive-behavioral methodology is appropriate for “anger-out” and “anger-in” subjects and for state anger and trait anger. However research needs to indicate which techniques are most effective in each case. This subject had more problems with “anger-out” and with trait anger and he may have needed a protocol designed to emphasize these areas. Another area touched upon in this study that is worthy of further exploration includes the significant other as an observer. Should the spouse be more involved in the protocol, at what point, and how do her attributions and belief systems affect the results? In addition, more research needs to occur concerning the resistance CHD and EH patients display toward therapy. According to experts (Davison, 2000; Mann, 1999; Pierrakos, 1998), such patients tend to depend on themselves and are often unwilling to confide in others. Would a self-directed workbook approach or a series of taped sessions be a more appropriate approach for EH patients? In conclusion, this case study, although exploratory in nature, has suggested fertile territory for future research.

Literature Review

Hypertension, defined as a systolic blood pressure (SBP) of 140 mm Hg or greater and a diastolic blood pressure (DBP) of 90 mm Hg or greater or taking antihypertensive medication (NIH, 1997) places individuals at significant risk for stroke, myocardial infarction (MI), and congestive heart failure (Rosen et al., 1994; Siegel, 1991). Weiss and colleagues (1991) estimated that 60 million Americans need treatment for essential hypertension (EH), identifying it as the most serious health problem in North America.

A wide range of theory and research in the area of psychosomatics and behavioral medicine conclude that there is a relationship between anger and EH (Clay, 2001; Rosen et al., 1994; Smith, 1992; Smith & Christensen, 1991; Suinn, 2001; Tavis, 1989; Weiss et al., 1991; Wolman, 1988). Anger and fear have been identified, alone or in combination, as contributing factors to heart disease and EH (Christensen & Smith, 1993; Pierrakos, 1987; Rein et al., 1995; Rosen et al.; Siegel, 1991; Wolman). However, fewer studies look at psychosocial methodologies for decreasing anger in hypertension patients (Bennett & Carroll, 1994; Blanchard, 1992). Most of the literature focuses on anger as it relates to cardiovascular disease (CVD), including EH, rather than on the clinical treatment for EH patients with an anger component to their personalities (Barefoot, 1991; Bennett & Carroll; Rosal, Downing, Littman, & Ahern, 1994; Siegel, 1991; Spielberger, 1999).

Because cognitive-behavioral theories suggest that thoughts are capable of triggering anger (Beck, 1999; Ellis, 1977; Ellis & Tafrate, 1998; Goldfried &

Sobocinski, 1975) and that belief systems about unfairness, threats to one's welfare, and perceptions of betrayal tend to precede angry reactions (Ellis & Lange, 1996; McKay et al., 1999), methods known to transform thought processes and change belief systems are integrated with relaxation exercises that have been used to decrease physiological symptoms of arousal, establish better coping mechanisms, and, improve overall health (Beck, 1999; Bellg, 1998; Friedman et al., 1987; Oldenburg, Allan, & Fastier, 1989) into an eight-week anger-management protocol.

The review of the literature that supports this study encompasses the following topics: 1) the relationship between psychology and medicine (Belar & Deardorff, 1995; Dare, 1993; Lewis & Lewis, 1972; Reich, 1973; Wolman, 1988); 2) pioneering psychosomatic research in the area of cardiovascular disease (Friedman & Rosenman, 1974; Pierrakos, 1974; Rosen et al., 1973); 3) current empirical research depicting the role of anger, hostility, Type A personality, and suppression of anger in EH (Everson, Goldberg, Kaplan, Julkunen, & Salonen, 1998; Melamed et al., 1993; Miller, 1993; Nyklicek et al., 1997; Spicer & Chamberlain); 4) current empirical research depicting the role of support, lack of support, and harassment in the development of an EH profile (Lepore, Allen, & Evans, 1993; Oxman et al., 1995); 5) current empirical research depicting the role of stress in EH and CHD (Davison et al., 2000); 6) current empirical research depicting the role of family interactions in EH (Kiecolt-Glaser, Malarkey, Chee, Newton, & Cacioppo, 1993; Malarkey et al., 1994); 7) current empirical research depicting the role of gender, life stage, and Type A personality in EH (Lawler, Harralson, Armstead, & Schmied, 1993; Lai & Linden, 1992; Vitaliano, Russo, Bailey, Young, & McCann, 1993); 8) nonpharmacological treatment modalities

used with EH patients, including methods for tension reduction (Blumenthal, Siegal, & Appelbaum, 1991; Benson, Marzetta, & Rosner, 1974; Dixit, Agrawal, & Dubey, 1994; Nakao et al., 1997; O'Conner, Buring & Yusuf, 1989; Oldridge, Guyatt, Fischer, & Rimm, 1988; Young, 1994); 9) studies involving a cognitive-behavioral approach with stress-management and cardiovascular patients (Bellg, 1998; Davison, Williams, Nezami, Bice, & DeQuattro, 1991; Dubbert, 1992; Oldenberg et al., 1989; Ornish et al., 1990; Russek & Schwartz, 1996; Suinn, 2001; Trzcieniecka-Green & Steptoe, 1994); 10) noncompliance of EH patients during treatment (Bellg; McGrady et al., 1995; Rosen et al., 1994); and 11) research providing an opposing view (Jorgensen, Johnson, Kolodziejci, & Schreer, 1996; Lindquist, Beilin, Knuiman, 1997; Suls et al., 1995; Tulen et al., 1993).

Psychology and Medicine

From the beginning of Western civilization, disease processes and psychology have been linked (Gatchel, 1993; Lewis & Lewis, 1972). In early Greece, the mind, also thought of as the soul, and the body were believed to interact (Wolman, 1988). Theories held by physicians who lived at that time, such as Hypocrites, suggested that psychological factors affected the course of an illness and vice versa (Wolman). However, scientific medicine, born in the 18th century, separated the mind from the body, resulting in a view of illness that was strictly physical (Pierrakos, 1974). Rene Descartes popularized this dualistic attitude, leading to the development of biomedical reductionism (Wolman). Until the

early 1900s, when Freud's influence provided a turning point, this philosophy dominated Western medicine (Gatchel; Pierrakos, 1974).

By the beginning of the 20th century, mind and body were again viewed as complementary, and the human being as a "psychosomatic unity" (Pierrakos, 1974, p. 7). Fields of study, such as psychosomatics, psychophysiology, behavioral medicine, and health psychology, grew up around concepts, such as holism, integration, and mutual influence (Agras, 1992; Epstein, 1992).

Psychosomatic medicine supported the theory that mental health could not be separated from the physical body (Lewis & Lewis, 1972). Body and emotions were seen as a unity with emotions resulting from certain biochemical reactions in the body, and, once present, causing other chemical reactions to occur in the body (Reich, 1973). The goals of psychosomatics as defined by Weiner (1982) involved "an exploration and analysis of the role that social and psychological factors played in the predisposition to, initiation of, response to, and maintenance of disease processes" (p. 31). Testifying to the difficulty of understanding disease processes, particularly their etiology, without recognition of psychological influences, Beck (1979) writes:

The problem of psychological versus physiological causation becomes even more complex when we consider the etiology of the psychosomatic disorders. In these cases, it is possible to observe a definite lesion, such as a peptic ulcer or dermatitis, or to see evidence of disturbed physiology with apparatus designed to measure changes in BP or heartbeats.

Moreover the investigator can wisely propound that 'hyperactivity of the autonomic nervous system' is responsible for the trouble. The visibility and tangibility of the disorder proves that it is indeed real -- an opinion

dramatized by the knowledge that the ulcer patient may bleed to death. When we question what produces the autonomic hyperactivity, however, and explore the circumstances leading to the disorder, our confidence in exclusively physiological explanations is shaken. (p. 187)

At first, modern psychosomatic thought reflected the psychoanalytic perspective (Pierrakos, 1974). After studying patients who exhibited hysterical states and displayed conversion symptoms, Freud observed that when socially unacceptable impulses could not find an appropriate expression through behavior, they were discharged unconsciously into the physiological organism (Gatchel, 1993). Freud's followers supported this viewpoint, teaching that specific illnesses are caused by internal conflicts and that repressed psychic energy can be discharged directly into the autonomic nervous system (Gatchel; Reich, 1973).

More recently, health psychology has been defined as the area of study that examines the combined effect of peoples' emotions, belief systems, behavior, lifestyle, and coping mechanisms upon their state of health or disease (Carver, Scheier, & Pozo, 1991; Rosen, et al., 1993). Wolman (1988) writes that there are "usually certain psychological factors in the etiology of many nonpsychological diseases and in the treatment of patients irrespective of the nature of their sickness" (p. 3). In their writing, Belar and Deardorff (1995) define health psychology as:

the application of knowledge and methods from all substantive fields of psychology to the promotion and maintenance of mental and physical health of the individual and to the prevention, assessment, and treatment of all forms of mental and physical disorders in which psychological

influences either contribute to or can be used to relieve an individual's stress or dysfunction. (p. 1)

Agras (1992) characterizes health psychology as focusing upon "causation and process" in contrast to the objectives of behavioral medicine that emphasize "prevention and treatment" (p. 499).

Health psychology has been legitimized by the *Diagnostic and Statistical Manual of Mental Disorders* of the American Psychiatric Association, DSM-IV, (1994). Category 316.00 refers to "Psychological Factors Affecting Medical Conditions" (p. 675), listing emotions, cognitions, perceptions, mental disorders, stress, psychological symptomology, and personality traits as having possible links to disease processes. Another DSM-IV section, Category 293.90, "Mental Disorders Due to a General Medical condition" (p. 165), focuses on psychological symptomology resulting from biomedical conditions in the body.

An area of study akin to health psychology, although narrower in definition, is psychophysiology. Gatchel (1993) credits Harold G. Wolff (1898-1962) with originating the study of psychophysiology, emphasizing the relationship between stress and disease processes, investigating gastric secretions in particular. Psychophysiology focuses upon measurable and conscious physical behavior, emphasizing quantification, reliability, intervening variables, coping mechanisms, genetics, and learning mechanics, rather than unconscious processes (Gatchel & Blanchard, 1993). Psychophysiology's contribution to behavior science involves the use of equipment to measure physiological processes such as BP, heart rate, and skin temperature, creating less reliance on the clinical interview that is more subjective in nature (Gatchel & Blanchard; Moorey & Hodes, 1993; Williamson, Veron-Guidry, & Kiper, 1998). In this study,

psychophysiological methods are utilized in the measurement of BP, both in the clinic and at home.

In early stress studies, psychophysicologists utilized a linear and unicausal model that assumed that stressful events triggered “the fight or flight response” to cue the central nervous system to respond to a threat in order to achieve its continued survival (Bilodeau, 1992; Craske et al., 1992). In response to this information, the hypothalamus released an excessive amount of toxic chemicals into the bloodstream over an extended period of time, adversely affecting immune and organ functioning (McKay et al., 1989; Pelletier, 1977, 1993). Current studies indicate a more complex interaction, supporting bi-directional communication (Affleck et al., 1998; Maier et al., 1994; Russek & Schwartz, 1996). Additional modifications in the construct involve the introduction of the Diathesis-Stress Model of Illness (Cotton, 1990; Gatchel, 1993), claiming that people respond to stress idiosyncratically, because of differences in their genetic history, family background, and role models. Whereas, stressful situations may cause inadequate homeostatic restraints for some individuals, they will not for others (Cotton). Under the same conditions, one person may demonstrate a rise in BP, another high blood sugar leading to diabetes, and a third a lack of physiological consequences.

Pioneering Psychosomatic Research and Cardiovascular Disease

The psychosomatic influence at the beginning of the twentieth century linked CHD and EH with personality analysis and emotion (Pierrakos, 1987; Gatchel,

1993). In a review of the early pioneers, Pierrakos (1974) reported on the work of Cannon, Osler, Alexander, Dunbar, and Menninger. Cannon's research results, circa 1910, indicated that when animals experienced fear and anger, their BP levels raised (Pierrakos, 1974). During the late 1800s, Osler found a correlation between angina pectoris and stressful changes in his patients' life situations (Pierrakos, 1974). In the 1930s, Alexander reported finding unbounding hostility, domination, aggression, and ambition in heart patients (Pierrakos, 1974). The founder of the American Psychosomatic Society, Helen Flanders Dunbar published results indicating the existence of different emotional personalities in coronary, arthritic and ulcerative patients (Pierrakos, 1974). Finally, Pierrakos (1974) wrote that the Menningers' research resulted in "overwhelming evidence connecting cardiovascular disease with emotional causes" (p. 8). Early psychosomatic research presented a picture of cardiovascular patients, having specific personality patterns, emotional responses, and lifestyles, caught in a viscous circle between fear and anger, with these emotions damaging the heart and circulatory system (Gatchel; Pierrakos, 1974). In the current study, the relationship between personality, emotion, and the cardiovascular system will be assessed empirically, through high anger scores on the State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999).

Further ground breaking research relating to cardiovascular disease took place in the early 1970s with a study by Friedman and Rosenman (1974) of 3,500 corporate men who were categorized into two groups according to personality, Type A and Type B. The type A male was described as extremely aggressive and competitive. He struggled with others in order to win and was obsessed with obtaining possessions and power as fast as possible. In comparison, the Type B

male demonstrated a more relaxed, less pressured, and less competitive lifestyle (Friedman & Rosenman). Two to five times more cardiovascular disturbances were found in the Type A male than in the Type B male and corresponding medical reports showed increased cholesterol and insulin, as well as an excess of norepinephrine, in the Type A personality (Pierrakos, 1974).

Other theories introduced in the 1970s were, in part, a reaction to the overwhelming influence of psychoanalytic theory on psychosomatic medicine (Gatchel, 1993). In a review article, Gatchel reported that individuals who were unable to identify and share feelings were more prone to designated illnesses than people who were able to label and express emotions. He also identified people who thought they were in the presence of ever threatening danger as candidates for EH. In this study, the inability to share feelings will be related to the construct "anger-in" and beliefs concerning threats to one's existence, that seem to trigger anger, will be resolved through the use of cognitive-behavioral treatment techniques. In the 1970s, psychological research became more empirical and behavioral, placing subjects in emotionally stressful situations in order to measure physiological responses, such as secretions, BP, heart rate, and body temperature (Gatchel). Empirical methods to measure BP levels in response to anger-management training will be utilized in the current study as well.

Current Empirical Studies

The premise of the current study, that an association between cardiovascular disease, particularly EH, and emotional style, specifically anger, exists, is

supported by current empirical research (Christensen & Smith, 1993; Lahad et al., 1997; Miller, 1993; Suinn, 2001) and by earlier psychosomatic research (Pierrakos, 1974, 1987; Rosen et al., 1994). This section reviews relevant, current research that supports an association between cardiovascular disease, emotion, and life experiences. It is divided into the following five subsections: 1) the role of anger, hostility, type A personality, and inhibition of anger in EH (Deary et al., 1994; Lai & Linden, 1992; Miller, 1993; Miller et al., 1998; Spielberger, 1999); 2) the role of support, lack of support, and harassment in EH (Lepore et al., 1993; Oxman et al., 1995); 3) the role of stress in EH (Sinha, Lovallo, & Parsons, 1992; Trzcieniecka-Green & Steptoe, 1994); 4) the role of the family in EH (Malarkey et al., 1994); and 5) the role of gender, life stage, and Type A personality in EH (Lindquist et al., 1997; Vitaliano et al., 1992).

The role of anger, hostility, Type A, and anger inhibition. In an empirical examination of the relationship between anger, fear, and the cardiovascular system, Sinha et al. (1992) hypothesized that fear would affect systolic blood pressure (SBP) and that anger would affect diastolic blood pressure (DBP). Twenty-seven male subjects, ages 21 to 35, were screened for imaging ability, taught how to relax, trained to use the imagery technique, subjected to imagery induction techniques, and asked to apply specific emotional situations to their personal lives in two experimental trials. The laboratory experiment was divided into seven subsections, one for each emotion measured. Relaxation techniques were used between each emotional segment in order to return subjects to baseline before beginning the next scenario. Before, during, and following the imagery induction, cardiovascular responses were measured. These included

SBP, DBP, stroke volume, cardiac output (CO), peripheral vascular resistance, and myocardial contractions. The results indicated that anger, rather than fear, had the greatest effect on the cardiovascular system, causing strong increases in both DBP and SBP and increased CO. Sadness produced more moderate increases in DBP, but a decrease in CO, and fear, activity, and joy produced an increase in SBP, but left DBP unchanged (Sinha et al.). According to this study, anger, more than other emotions, has an effect on heart disease, but contradictory to the hypothesis, it affected SBP as well as DBP. Inter-rater reliabilities for the emotional imagery scripts ranged from .78 to .95, indicating a high degree of reliability in the findings as they applied to each imagined situation (Sinha et al.). The finding that anger is related to both DBP and SBP supports the current study's hypothesis that anger management therapy will be associated with a drop in DBP, SBP, or both.

Studying a sample of 537, middle-aged, normotensive men from Finland, Everson et al. (1998) demonstrated strong epidemiological evidence of a positive relationship between anger style and subsequent EH, independent of known risk factors, such as smoking, diet, or alcohol. Each subject completed a medical examination and psychological questionnaires, including Spielberger's "anger-in" and "anger-out" scales, at the beginning of the study and again four years later during a scheduled follow-up assessment. At the four-year follow up, 104 (19.4 percent) subjects were diagnosed with EH, exhibiting SBP equal to or greater than 165 mm Hg and DBP equal or greater to 95 mm Hg. Each one point increase in either an "anger-out" score or an "anger-in" score was associated with a 14 percent increased risk of EH (Everson et al., p. 733). Therefore, extreme anger in either direction, expression or repression, had adverse cardiovascular

consequences. The authors write: "The pattern of findings observed here is consistent with the idea that expressions of anger or hostility that deviate from the norm in either direction (i.e. withholding or repressing feelings and outright displays of anger and aggression) may be related to elevated risk of hypertension or other cardiovascular disorders" (p. 733). Further statistical analysis showed that "anger-out" had slightly more cardiovascular risk than "anger-in" and that men with a higher degree of "anger-out" plus a cynical outlook on life were two and a half times more likely to become hypertensive (Everson et al.). Subjects who reported being in control of their anger, without strong expression or repression, had a lower risk of becoming hypertensive. The investigators observed few confounds due to obesity, smoking, alcohol, or physical activity, hypothesizing that a resentful emotional style prolongs anger in both the "anger-in" and "anger-out" conditions and leads to a sustained elevation in BP. Everson et al.'s findings support this study's use of a protocol for "anger-in" and "anger-out" EH patients, because their findings, contrary to those of others (Mann, 1999; Spielberger, 1999) indicated that "anger-out" had a greater impact than "anger-in" by a slight margin.

Julkunen et al., (1993) hypothesized that hostility was the Type A personality component most related to cardiovascular problems. Results from the study of 92 patients, 76 men and 16 women, all below age 65, who were examined eight to ten days after the occurrence of the MI and again one year later, showed that those with a poor prognosis following MI were more easily aroused and often experienced anger. Assessment tools included the Jenkins Activity Survey, The Finnish Type A Scale, the Anger Expression Scale, developed by Spielberger, and the Differential Personality Inventory (Julkunen et al.). Findings were that anger,

either openly expressed or suppressed, was related to a poor prognosis following MI. The frequency that the anger was experienced was the most important factor. However, when all the components of Type A personality were subject to a factor analysis, a weak, non-significant trend resulted. Anger was the only significant component. This study, like that of Everson et al. (1998), suggested that there was a need to design a protocol that served both "anger-out" and "anger-in" EH patients.

In a large cross-sectional study of 1,532 British men and women, ages 55 to 74, suffering from peripheral arterial disease, Deary et al. (1994) found that male patients had more hostility, a greater tendency to engage in angry confrontations, and a preference for dominance over passivity, than the control group. Hostile acts were found to increase with the severity of arterial disease, emphasizing the role of "anger-out" in cardiovascular disease. The Bedford Foulds Personal Deviance Scale was used to measure hostility, dominance, and the willingness to engage in angry confrontations and the Bortner Inventory was used to measure Type A characteristics (Deary et al., p. 200). Like Julkunen et al.'s (1993) finding that the Type A personality was not necessarily indicated for heart disease, in this study, Type A scores were found to decrease with disease severity (Deary et al.). The results suggested that hostile personality is an independent risk factor and not, as originally thought, part of the Type A complex of events. In addition, the hostility scores of women subjects with peripheral arterial disease were no higher than the controls, a result suggesting differences between men and women in relationship to the role of anger in heart disease that are discussed in greater depth in the section on life stage and gender.

Melamed et al. (1993) explored the relationship between Type A behavior, hostility, and cardiovascular reactivity in a field study that measured reactivity to a noise stressor among 143 men employed in a heavy machinery workshop setting. Data collected included clinic heart rate and BP levels, ambulatory heart rate and BP measurements, individual noise exposure ratings, and information about tension and body position during the ambulatory ratings (Melamed et al.). Type A personality was measured using a modified version of the Thurstone Temperament Schedule Activity Scale. The Type A group of workers, who were identified as extremely competitive, impatient, aggressive, hostile, and exhibiting a sense of time urgency, experienced a raise in DBP levels and in heart rate in response to noise stressors, but not in SBP levels (Melamed et al.). These results were similar to Sinha et al.'s (1992) findings showing a rise in DBP rather than in SBP. These results were not expected, because a rise in the SBP has been "the most well documented in laboratory studies" of BP (Melamed et al., p. 190). Melamed et al.'s results support the earlier findings of Friedman and Rosenman (1974) that Type A personalities exhibit cardiovascular reactivity and heightened DBP in response to tensions in the environment. Therefore "anger-out," one characteristic of Type A behavior, was considered in this investigator's design of a treatment protocol, although more studies report a relationship between "anger-in" and cardiovascular reactivity than between "anger-out" and cardiovascular reactivity (Spielberger, 1999).

Examining the effects of harassment and hostility on cardiovascular, neuroendocrine, and emotional arousal of 52 white men subjected to "psychologically challenging tasks" in the laboratory, Suarez et al. (1998, p. 78) found that those who scored in the highest quartile of the Cook and Medly

Hostility Scale exhibited enhanced and prolonged BP, heartrate, forearm blood flow, forearm vascular resistance, norepinephine, testosterone, and cortical responses when harassed. Their results were significantly higher than those of low hostility subjects who were also harassed, and nonharassed subjects in the high hostility and low hostility groups. The procedure involved a 10-minute baseline period in which physiological data was recorded. The baseline period was followed by a wordunscrambling task, with 8 seconds' time provided per word. The word task was divided into three, three and a half minute segments. The investigators offered a monetary reward for the person with the most correct answers. The study also included a harassment condition. In the harassment condition, the technician was first made angry by the investigator (an incident overheard by the subject) and he was then subsequently rude to the subject. In the nonharassment condition, the technician was professional and courteous to the subject. A Likert scale was used to obtain emotional responses to the study and physiological data [SBP, DBP, mean arterial pressure, and heart rate at baseline] was collected during the three-task segments and at recovery. Findings were that interpersonal stress in the laboratory was associated with excessive SNS and hypothalamic-pituitary-adrenal activity among high hostility men (Suarez et al., p. 84). The investigators concluded that men who experience high hostility may show excessive cardiovascular and neuroendocrine responsivity to harassment. In addition, they (Suarez et al.) found that, for high hostility men, a negative interpersonal experience was associated with anger arousal, writing about "the joint effect of hostility and emotional arousal, and more specifically anger, in triggering excessive sympathetic overflow" (p. 85).

A similar study (Miller et al., 1998) focused upon hostility, sodium consumption, and cardiovascular response under stressful conditions. The investigators reported that of the 100 male, undergraduate subjects, the 15 who scored high on hostility on the Buss-Durkee Hostility Inventory and were harassed during a laboratory experiment exhibited greater cardiac output (CO), SBP, and forearm blood flow than did nonharassed, high hostility and low hostility participants or harassed, low hostility subjects. Measurements at baseline, during the experiment, and at follow-up, involved SBP, DBP, CO, stroke volume, heart rate, and total peripheral resistance. The task involved 180 mathematical equations presented for three seconds each with a solution that the subject had to identify as correct or incorrect. The harassment procedure was the same as that of Suarez et al. (1998). The findings supported the hypothesis that “cardiovascular hyper-reactivity in hostile individuals is an interaction between personality predisposition and interpersonal conflict” (Miller et al., 1998, p. 75).

Also emphasizing SNS reactivity, Christensen and Smith (1993) used a sample of 60 undergraduate men, predicting that hostile individuals would show exaggerated physiological responses to stressors in comparison to nonhostile persons. The researchers engendered hostility by placing subjects in situations that called forth suspiciousness and mistrust, asking hostile subjects to disclose personal information to another person. The Cook-Medley Hostility Scale differentiated high and low hostility subjects and physiological responses were identified through the measurement of BP and neuroendocrine levels. The results indicated that hostile individuals in uncomfortable interpersonal situations experienced a rise in SBP and DBP, physiological changes that could make them

more vulnerable to disease processes (Christensen & Smith). The authors theorized that those high on hostility face a dilemma: the threat from self-exposure in interpersonal situations could lead to cardiovascular problems, whereas the threat from choosing not to reveal themselves could lead to psychological problems (Christensen & Smith). The relevance of these studies (Christensen & Smith; Miller et al., 1998; Suarez et al., 1998) to the current study is the conclusion that challenging and stressful life conditions, such as harassment or forced personal revelations, may influence the physiology of men who are high in anger and hostility, resulting in EH, unless anger-management strategies are used to thwart that process.

Many studies provide evidence that inhibited, unexpressed, and out-of-awareness anger is connected to cardiovascular problems (Emmons, 1991; Mann & James, 1998; Pennebaker, 1991). These studies provide support for designing an "anger-in" as well as an "anger-out" protocol for use in this investigation. In his review of the literature, Wolman (1988) writes that CHD and EH seem "to be more related to suppressed anger and hostile feelings than to any other emotion" (p. 135). Spielberger (1999) wrote: "a major reason for constructing the anger expression scales was to develop an instrument that would facilitate the investigation of how various components of anger contribute to the etiology of hypertension and coronary heart disease" (p. 33). His review of the literature in support of the STAXI anger scales found that "angry feelings often are associated with feelings of anxiety that may inhibit the expression of anger" (p. 32); "that individuals who tend to suppress anger have higher systolic (SBP) and diastolic (DBP) blood pressure" (p. 33); and that "AX/In scores were

found to be better predictors of blood pressure for both females and males than any other measure" (p. 34).

In a study of 105 men, ages 45 to 60, who had recently survived MI, Denollet et al. (1995) focused on the subjects' tendency to substantially inhibit emotional expression, believing that this reticence could be damaging to the subjects' health. All subjects participated in 36 sessions of aerobic exercise training and were provided with eight group counseling sessions that included spouses focusing on health education. Approximately three weeks after the MI, personality was assessed using the Social Inhibition Scale of the Heart Patients Psychological Questionnaire. After a two-to five-year follow-up period, 15 subjects had passed away. The rate of death for those with distressed personalities, who inhibited the expression of emotions, was significantly greater than for other subjects (Denollet et al.). Denollet et al. found that the interaction of emotional distress and inhibition of feelings "had an adverse effect on prognosis" (p. 588).

Data supporting anger inhibition has been provided by Miller (1993) who examined cardiovascular reactivity in anger-defensive individuals. Basing his study on Alexander's "Specificity Hypothesis," he suggested that frequent anger that is suppressed causes "intense and prolonged blood pressure responses ... a major determinant of hypertension" (p. 78). Forty male undergraduate subjects were paid \$6 an hour and presented with four different tasks: an isometric handgrip task, a film task showing a primitive passage to manhood, a forehead coldpack task, and a shock avoidance video game task. The Marlowe-Crowne Social Desirability Scale assessed defensiveness, the Spielberger Anger Expression and Trait Anger questionnaires assessed "anger-in" and "anger-out,"

and self-rating scales following each task assessed state anger and anxiety. After baseline measurements were established, heart rate and SBP and DBP were measured one time per minute during the study. The investigator reported that state anger was moderately high on all tasks for all subjects. However, the defensive/low anger subjects, those who inhibit anger, reported less state anger to all stressors, including the shock avoidance video game task, even though their anger-defensive style was significantly associated with elevated cardiovascular activity and SNS responses on the shock avoidance video game task (Miller). The results suggested that "anger-defensive individuals are likely masking their angry reactions across a range of anger-provoking situations because of a desire to remain and appear unemotional" (Miller, p. 83).

Suls et al.'s (1995) meta-analyses of studies involving anger and EH concluded that anger experience was positively correlated with elevated BP, even though the relationship was very small and the results from the studies included in the sample were quite variable. Their findings were that representative samples, samples of people who did not self-select to become research subjects, and are therefore most like the general population, have higher SBP when they suppress or inhibit anger. In contrast, the expression of anger was associated with a lower SBP and no change in DBP for all subjects. Sulz et al.'s investigation supports the "anger-in" rather than the "anger-out" theory in the EH literature, reporting that "the notion that extreme tendencies to express anger are related to elevated pressure did not receive support" (p. 6). In addition, Sulz et al.'s results discounted the argument that the association of anger with high BP was the result of "the white-coat hypothesis," reporting that those with "white-coat" reactions were less angry than people with sustained high BP (Suls

et al.). The authors concluded that the psychosomatic hypothesis relating anger to hypertension survived, but with limited confidence due to the small size of the association, variability across studies, and unreliable BP measures, especially in studies that measured BP one time only (Suls et al.).

Powell et al. (1993) looked at Type A personality factors and behavior in women, finding that suppression of emotion was a factor in heart disease. Because premature CHD death is the second leading cause of death in white women and the leading cause of death in black women, the investigators studied 83 female subjects, ages 30 to 63. Assessment involved an examination of hospital records, a history, a physical examination, a review of sociodemographic data and social role status, a video-taped structured interview to observe Type A characteristics, an unstandardized eight-item depression scale, and a vital status search if the subject could not be traced (Powell et al.). Findings showed predictors of death or recurrence of MI in women involved divorce, employment without a college degree, and reverse Type A behaviors, such as low time urgency and low emotional arousability. The authors concluded that women with heart disease are not representative of the inverse of Type A behavior, but rather reflect an inability to express emotion (Powell et al.).

Lai and Linden (1992) looked at anger expression style, cardiovascular reactivity, and gender, investigating physiological responses in a sample of 105 male and female subjects. Subjects were harassed during a laboratory experiment in order to differentiate those who suppressed anger from those who expressed anger. The investigators predicted that when anger suppressors and anger expressors were both harassed, the expressors would display more rapid cardiovascular recovery. The strongest finding was that men reacted more

strongly to tasks performed under anger on all cardiovascular indices and that opportunities to release anger facilitated heart rate recovery in men, and to a lesser degree DBP recovery in men. Women with unexpressed anger had better SBP recovery rates. This study supports the theory that unexpressed anger can lead to serious health problems, but only in men.

Spicer and Chamberlain (1996) investigated the relationship of cynical hostility, "anger-in," "anger-out," and anger frequency with resting BP. Subjects were 64 men and 76 women volunteers, all normotensive. BP readings were taken using a standard approved procedure and anger was assessed using the Cook-Medley Hostility Scale, the Anger-In and Anger-Out Subscales of Spielberger's Anger Expression Scale, and Spielberger's Trait Anger Scale (Spicer & Chamberlain). Findings were that hostility and anger are distinct but related, with individuals who are more hostile displaying anger more frequently and suppressing anger more frequently. Men were more hostile than women. Older people were less likely to experience anger or to express it, although BP was higher in older people and in men. Resting BP is higher in men and women who are less likely to suppress anger and in women who are more cynically hostile.

The association of expressed and repressed hostile and aggressive attitudes with post-menopausal women with MI was investigated (Lahad et al., 1997). A sample of 277 women suffering from MI and 988 controls were given the hostile-affect and aggressive-responding factors of the Cook-Medley Hostility Scale during a telephone interview. The hostile-affect factor measures negative emotions concerning social relationships that for the most part remain unexpressed. The aggressive-responding factor indicates respondents' tendencies to use anger and aggression to solve problems and to view these

behaviors as reasonable responses. The results showed a significant relationship between MI and hostility-affect scores based on emotional inhibition or repression. There was a modest protective effect with findings from the aggressive-response scale for women who express their anger. These results conflict with those of Lai and Linden (1992), who found that women with unexpressed anger had better SBP recovery rates. This study links repression or denial of hostility to increased risk for MI in women, and open expression of hostility with a decreased risk of MI in women (Lahad et al.).

In a study concerning denial and repression of BP symptoms, a sample of 262 Dutch schoolteachers, 162 men and 100 women, were asked about their health status, current illnesses, perceived physical symptoms, job related stressors, and job related psychological symptoms (Nyklicek et al., 1997). The subjects were divided into three groups: treated hypertensives, untreated hypertensives, and normotensives. The resulting data depicted an inverse relationship between BP and reported physical symptoms, suggesting a repressive or defensive tendency in untreated persons with elevated BP. In contrast, the group of subjects being treated for EH reported more symptoms than the normotensives or the untreated EH group. Therefore, the authors suggest that an EH diagnosis may either have a negative effect on personality, or that hypertensives attempt to achieve health by verbalizing physical complaints (Nyklicek et al.). The most important finding was that untreated hypertensives portrayed a diminished ability to appraise aversive stimuli, a tendency to deny physical symptomology, a desire to withhold negative information from others, and a denial of emotional state (Nyklicek et al.). Rosal et al.'s (1994) study of sexual functioning post-MI found similar results concerning the sharing of emotional distress. In examining 63

male, post-MI patients and their wives for sexual adjustment following MI, using The Sexual Relations Scale of the Psychosocial Adjustment Scale, the Derogatis Interview of Sexual Functioning, and the Kellner Symptom Questionnaire, it was found that although patients presented a normal psychological picture outwardly, those with impaired sexual functioning after MI showed the most psychological dysfunction and were the most unwilling to report emotional distress (Rosal et al.).

Mann (1999, 2000) suggests, on the basis of current research studies as well as from his own clinical trials, that EH results from hidden emotions. He noticed that many patients who came to him at the Hypertension Center of the New York Hospital, Cornell Medical Center, reported less stress than other people. They were less in touch with feelings and their feelings were masked even from themselves. Those with severe or out-of-control EH hid their emotions, and their inability or unwillingness to express anger and the consequent holding in of angry feelings contributed to the development of EH. Like Nyklicek et al. (1997), Mann found that many EH patients were unaware of being tense or angry. It was common for them to harbor emotions but not to feel them. According to Mann, the patient diagnosed with severe EH, who complains of emotional stress, is the exception and not the rule (Mann, 1999).

In cases of "hidden feelings" (Mann, 1999) and repressed emotions (Emmons, 1991), investigators find that people are not aware that they have been ignoring or denying their feelings (Craske et al., 1992). They block them out of habit or because they observed and modeled their parents' behavior and that of other significant people in their lives (Emmons; Pierrakos, 1987; Tinsley, 1991). Sometimes they inhibit feelings that make them feel anxious, such as unresolved

feelings from the past (Craske et al.). Patients who have experienced war, rape, physical abuse, or sexual abuse, as well as less violent traumas from the past, repress extremely painful early emotions and childhood memories in order to survive (Mann). When they reach adulthood, these hidden feelings may be creating havoc in their physiological systems (Craske et al.; Mann). In this study, "hidden feelings" (Mann), and repressed emotion (Emmons) will be considered under the construct "anger-in."

The role of lack of support and harassment. Other emotions associated with cardiovascular disease and EH include depression, isolation, and lack of support (Rosen et al., 1994). On the basis of 50 years of clinical observations and research, Pierrakos, cofounder of Bioenergetics and founder of Core Energetics, explains that "hypertensives are often lonely, although this fact is not generally known. Even if there are a lot of people around them, they do not feel as if they receive support. They feel alone, with a lot of responsibility and ... they don't feel like they get the love they need" (Personal Communication, December 11, 1998). In his review of hypertension literature, Mann (1999, 2000) also indicates that those diagnosed with EH do not receive support, suggesting that emotional isolation may be a central feeling for EH patients. Many tend to keep feelings to themselves and, therefore, their relationships with other people are distant, rather than close and supportive (Emmons, 1991). They don't like to express neediness, vulnerability, or ask for help, because asking may be considered a sign of weakness or a lack of inner strength. They neglect their own needs and they do not receive the care they need from others (Pierrakos, 1974). In addition,

they are often workaholics or high achievers and their lives are characterized by a lack of balance (McKay et al., 1989).

In support of these themes, Oxman et al. (1995) found that lack of participation in social or community groups and absence of strength and comfort from religion were consistent predictors of mortality after cardiac surgery. Subjects were 232 patients who received elective heart surgery. Predictors of mortality for the 21 patients who died within eight months of heart surgery included lack of involvement with community groups and with religious organizations and spirituality (Oxman et al., p. 5). The investigators (Oxman et al.) concluded: "Lack of participation in social groups and absence of strength and comfort from religion increase an older cardiac surgery patient's chance of dying by over three-fold each, even after controlling for history of previous surgery, presurgical functional impairment, and age" (p. 11).

In a similar study, using a sample of 736 Swedish men, age 50, all born in 1933, Orth-Gomer, Rosengren, and Wilhelsen (1993) followed the men for an 8-year period, determining the number of deaths from cardiac disease and the number of myocardial infarctions. At the outset of the study, all subjects submitted to a physical examination, a health history that included questions about smoking and exercise, a demographic information questionnaire, and the Interview Schedule for Social Interaction. The Schedule for Social Interaction measures emotional support from close persons and support supplied by a social network (Orth-Gomer et al.). Findings were that the 25 subjects who contracted coronary heart disease or died from cardiovascular illness during that period lacked social ties and social support. The authors (Orth-Gomer et al.) write: "Lack of social support remained a significant predictor even when controlling

for standard risk factors like hyperlipidemia, overweight, hypertension, diabetes, and physical inactivity" (p. 41).

Interested in quality of life, as well as extended life, for people with heart disease, Jenkins, Stanton, and Jono (1994) reviewed 39 preoperative, medical, surgical psychosocial and demographic variables in order to find "predictors of good and bad recovery" (p. 209). In reference to the psychosocial variables, the investigators discovered that freedom from cardiac symptoms after heart surgery was significantly associated with high levels of self-esteem, well-being, vigor, activities, social participation and social support. Subjects were 463 patients recovering from coronary artery bypass surgery or cardiac valve surgery who were recruited from four teaching hospitals. Data involved an interview administered by healthcare professionals prior to surgery and again eight months later, patient-completed questionnaires administered pre-and post-surgery, and hospital charts (Jenkins et al.).

In a study involving the consequences to the cardiovascular system of lack of support or support provided under stress, Lepore et al. (1993) investigated 90 college students, 43 men and 47 women in public speaking situations. They were randomly assigned to three groups according to gender: speech alone; speech with unknown, supportive confederate; and speech with unknown, nonsupportive confederate. During the laboratory experiment, their BP was assessed. Findings were that while preparing for and giving their speeches, subjects who were alone or supported exhibited significantly smaller increases in SBP and DBP than did nonsupported subjects who exhibited significantly greater increases in SBP and DBP (Lepore et al.). Male subjects showed a greater stress

related increase in BP than did female subjects, but gender did not change the impact of nonsupport on reactivity.

A study (McCraty et al., 1995) that hypothesized that positive emotions would decrease sympathetic reactivity demonstrated that “positive emotions lead to alterations in sympathovagal balance that may be beneficial in the treatment of hypertension” (p. 1089). Using the “freeze-frame” method, 24 subjects, 15 women and 9 men, ages 24 to 47 were divided into two groups and asked to experience either appreciation or anger (McCraty et al.). To experience positive emotions subjects were asked to shift their attention to their hearts and focus on sincerely feeling appreciation or a similar positive emotion toward another person. Anger was induced by asking subjects to recall situations from their lives that still engender anger. Subjects were asked to maintain each image for five minutes and electrocardiographic measures were taken throughout the laboratory experiment. The experience of appreciation toward another person is one aspect of the construct “receiving support.” McCraty et al.’s work identifies some of the physiological mechanisms associated with support “by demonstrating that anger produces a sympathetically dominated power spectrum, whereas appreciation produces a power spectral shift toward MF and HF activity” [parasympathetic activity] (p. 1090).

Studies that investigated the relationship of social support to cardiovascular health, including EH (Lepore et al., 1993; Orth-Gomer, et al., 1993), emphasize the benefits of coping skills. They provided information indicating that a supportive component be incorporated into the protocol design. In addition, these studies suggested that anger and hostility were related to the lack of social support in one’s life (Emmons, 1991; Orth-Gomer et al.).

The role of stress. Blood pressure has been found to rise in relationship to stress (Cotton, 1990; McKay et al., 1989; Pelletier, 1993; Rein et al., 1995). Several current investigations have studied the relationship between stress, anger, and BP.

Markovitz, Raczynski, Wallace, Chettur, and Chesney (1998) placed 3,364 people participating in the Coronary Artery Risk Development in Young Adults Study (CARDIA) in a stressful situation. They hypothesized that those who showed heightened reactivity to tasks under stress (a video game and a star tracing task) would develop significant changes in their BP five years later. Results from the sample of 910 Caucasian men, 909 Caucasian women, 678 Black men, and 867 Black women, all normotensive, between the ages of 20 and 32, confirmed that Caucasian and Black men whose SBP increased during the video task produced a significant change in SBP five years later (Markovitz et al.). These findings did not apply to women who displayed reactivity at the time of the video task. The authors (Markovitz et al.) concluded that it is possible to predict early signs of EH in young men placed in stressful situations who produce B-adrenergic responses, stating that "marked blood pressure reactivity to stressors eliciting primarily B-adrenergic responses may be an independent indicator of significant increases in blood pressure among young men" (p. 190).

Examining gender differences in response to stress by looking at "hemodynamic patterns underlying blood pressure control" (p. 357), (Lawler, Wilcox, & Anderson, 1995) compared 64 male and 55 female young people during a high stress experience. Stressors, that were believed to evoke a B-adrenergic response pattern, included mental arithmetic, video game, and anger recall interview tasks. Cardiac impedance, BP, and heart rate

measurements were assessed. At baseline, men had higher SBP levels than women, but DBP levels were the same. During the stressful tasks, men's DBP levels, CO, and heart rates raised higher than women's DBP levels, CO, and heart rates (Lawler et al.). Findings indicated gender differences in the direction of greater reactivity for men, supporting the investigator's hypothesis that the greater incidence of heart disease in men is due to a more pronounced response to stressors.

A study that placed 20 subjects under stress by inducing emotional experiences for 40 minutes, monitored video, cardiovascular, and immunological responses (Knapp et al., 1992). Under conditions that elicited negative emotional responses, significant cardiovascular activation occurred with "concomitant physiologic elevations of heart rate and blood pressure" (Knapp et al., p 144). In another study observing the physiological effects of stress on the cardiovascular system, Rein and colleagues (1995) examined salivary IgA, heart rate, and mood in 30 subjects, 13 men and 17 women, ages 17 to 50, with a mean age of 38. The subjects were asked to self-induce feelings of care using the "freeze frame" method and feelings of anger using the recall method. Mood changes were measured using the Profile of Mood State test and heart rate was measured using an electrocardiogram. Findings (Rein et al.) were that "anger produced a significant increase in total mood disturbance and heart rate, but not in S-IgA levels" (p. 87). In addition, from one to five hours after the experimental manipulation, anger produced an inhibition in salivary IgA levels, whereas care stimulated salivary IgA levels.

Some theorists believe that cardiovascular reactivity and stress in EH patients is related to a cycle of hostility and fear (Barefoot, 1991; Siegel, 1986; Spielberger,

1999). Pierrakos (personal communication, December, 11, 1998) reported that hypertensives "experience fear which is covered over with hostility in the form of judgments, control, negativity toward others, or anger." Similarly, Siegal (1986) concluded that EH resulted from a combined anger/anxiety interaction, finding that when anger was expressed outwardly, without anxiety present, BP lowered, but if both were present, it raised. Spielberger (1999) found moderately high correlations between his state-anger and state-anxiety scales, for both men and women, suggesting that angry feelings and anxious feelings are associated, and that the anxiety may inhibit the expression of anger.

The role of the family. Family interactions have been viewed as a vehicle through which anger/anxiety patterns and stress reactions develop and are maintained. Mann (2000) writes that "childhood abuse and trauma, can have considerable effects on mood and behavior decades later Yet, remarkably, the notion that hypertension could be linked to such events has received little attention" (p. 42). When children are frightened of superior or controlling parents, they experience an underlying hostility toward the parents. The hostility is hidden beneath a layer of fear and the child worries that the hostile feelings will be discovered (Emmons, 1991; Pierrakos, 1987). Feuerstein, Labbe, and Kuczmierczyk (1986) report that pressures emanating from parents and their overdemanding attitudes "lead to the development of competitive and aggressive behavior and Type A personality patterns" (p. 35).

Combined fear and anger interactions have been associated with changes in BP levels and reactivity among couples. A study (Kiecolt-Glaser et al., 1993) of 90 newlywed couples, assessed with the telephone version of the Marital

Adjustment Test, given a psychiatric and medical history, and subjected to a conflict task in a hospital laboratory setting for a 24-hour period, reported large increases in BP that “remained elevated longer in high negative subjects than in low negative subjects.” In a separate study, using the same subjects, Malarkey et al. (1994) identified increases in epinephrine and norepinephrine levels in the blood samples of the newlyweds when they exhibited hostile and negative behaviors toward their partners. The investigators concluded that:

Neurohormonal changes related to hostility are thought to provide one of the links between trait hostility and risk for coronary heart disease. Taken together data on both trait and state hostility provide support for the idea that chronically abrasive marital relationships could contribute to the heightened sympathetic tone believed to play an early role in hypertension. (p. 49)

In a study concerning marriage, sexuality, and cardiovascular health, 63 couples were examined, post-MI, for impaired sexual functioning. Findings were that the couples who displayed the greatest amount of sexual impairment, according to the Sexual Relations Scale of the Psychosocial Adjustment to Illness Scale, were those who also experienced the greatest amount of psychological distress, according to the Kellner Symptom Questionnaire (Rosal et al., 1994). The authors concluded that psychological factors play a role in recovery from cardiovascular illness (Rosal et al.). Another investigation conducted in order to understand the impact of MI on the wives of cardiac patients, in terms of quality of life and symptoms of distress, conducted 37 interviews, three times, over a 10-year period (Arefjord, Hallaraker, Havik, and Maeland, 1998). An analysis of the interviews found that the wives experienced more psychological distress

during the acute phase, immediately after the cardiovascular incident, than over time. At the 10-year follow-up, widows experienced the most distress, whereas the marriages of cardiovascular patients and their spouses stabilized over time.

The role of gender, life stage, and Type A personality. Research concerning the relationship of gender, life stage, and Type A personality to EH provided results that have been utilized in the design of the current study (Christensen & Smith, 1993; Deary et al., 1994; Denollet et al., 1995; Everson et al., 1998; Lai & Linden et al., 1992). For example, more empirical investigations have established a relationship between men, anger, cardiovascular reactivity, and Type A personality than between women, anger, cardiovascular reactivity, and Type A personality (Christensen & Smith; Deary et al.; Denollet et al.; Everson et al.; Lai & Linden et al.; Lawler et al., 1995; Meesters & Smulders, 1994; Melamed et al., 1993; Miller et al., 1998; Sinha et al., 1992; Suarez et al., 1998). However, Knox and Follmann (1993) believed gender bias was embedded in Type A research. Skeptical of data demonstrating a stronger relationship between Type A, MI, and men than between Type A, MI, and women, they obtained a sample of 409 twin pairs, ranging in age from 26 to 64, with a median age of 52, who were involved in an ongoing investigation. Both the Framingham and Bortner scales were used to measure Type A personality (Knox & Follmann). The findings showed that Type A is related to cardiovascular disease for both men and women, but differently. Results revealed that the Type A women had more alienation and less life satisfaction than Type A men. In contrast, the profile of a Type A man revealed life satisfaction without alienation (Knox & Follmann). High Type A

women showed anger along with neuroticism and alienation, and high Type A men showed depression in their profiles as well as anger.

Another study predicting gender bias in cardiac research and treatment (Martin et al., 1998) used 224 young adult subjects (147 were female) to investigate whether gender and life stress would bias the interpretation of cardiac-related symptoms. Subjects were asked to read vignettes about a person experiencing physical symptoms similar to those of an MI. One group of subjects read about a male experiencing these symptoms and one group of subjects read about a female experiencing these symptoms. Subjects were also grouped according to the level of stress the male and female characters were experiencing in their lives. Findings (Martin et al.) were that "information about the victim's gender and concurrent life stressors biased the interpretation of cardiac-related symptoms so that participants were least likely to attribute the target's symptoms to cardiac causes when that target was a woman who had recently experienced stressful life events" (p. 349).

Lawler et al. (1993) researched the importance of inhibited versus expressed hostility as components of Type A behavior and as independent factors in a study of gender effects on heart rate and BP. Approximately 50 males and 50 females took part in two experiments, each with a harassment/no harassment condition. Males with high expressed hostility, according to the Buss-Durkee Subscales, showed greater DBP reactivity and also increased SBP rates. These subjects responded to challenging events with anger and were vulnerable to cardiovascular reactivity. In contrast, women with high expressed anger did not have the same physiological reaction and expressed anger was not considered a coronary risk for women. Low expressed hostility was associated with greater

heart rate and SBP reactivity, especially in the anger recall activity, suggesting that anxiety reactions were mediating influences. Both men and women who suppressed hostility showed greater DBP activity, and SBP rose in men as well. From their results, the authors theorized that: 1) anxiety more than anger is responsible for the physiological response in the suppressed hostility group, 2) males who express anger outwardly may have increased CHD, 3) there is an association between cardiovascular reactivity and lack of match of anger style with situational demands, and 4) interpersonal tasks are more apt to produce cardiovascular reactivity in females than intrapersonal tasks (Lawler et al., 1993). Another study by Lawler et al. (1995), reviewed in the section on stress, also focused on gender differences in relationship to cardiovascular health. The investigators found that the 64 male subjects had higher baseline SBP levels than the 55 female subjects, and when responding to stressful tasks the male subjects had higher DBP levels than the female subjects (Lawler et al, 1995).

Life stage and age is also related to EH research (Meesters & Smulders, 1994; Vitaliano et al., 1993), having implications for the age of subjects included in the current study. Meesters and Smulders' study of Dutch male MI patients found that heart disease was strongly associated with hostility among men younger than age 50, but not for those older than age 50. The sample of 81 male patients and 168 matched controls, ranging in age from 35 to 65, were assessed using The Cook-Medley Hostility Scale, The Buss-Durkee Hostility Inventory, several cardiovascular tests, a Type A behavior pattern assessment, and personal interviews. Patients identified themselves as having higher levels of hostility than controls, but differences were statistically significant only for the younger men (Meesters & Smulders).

Exploring the issue of age as it relates to cardiovascular reactivity, Jennings et al. (1997), studied 902 Finish men, ages 46 to 64, participating in the Kuopio Ischemic Heart Disease Risk Factor Study. The subjects were asked to perform challenging computer-based cognitive and psychomotor tasks. A wide range of assessment tools were utilized at baseline, follow-up, and during the two-hour task period, including ambulatory monitoring of BP and electrocardiogram. The authors asked whether cardiovascular responses to stress were due to the process of aging or due to the disease process. Findings were that performance on tasks was altered both by age and by illness, independently (Jennings et al.). The investigators (Jennings et al.) conclude that: "Between the fourth and eighth decades of life, aging does contribute a significant amount to between-individual variability. This contribution is to both resting levels of cardiovascular functions and responsivity of cardiovascular variables to psychological challenge" (p. 236).

A study of Type A behavior, hostility, and cardiovascular reactivity, involved a larger number of women than men and a larger number of older people than middle-aged people (Vitaliano et al., 1993). Of the 82 subjects and 78 controls, the average age was 68, and 63 percent were women. The subjects were caregivers of spouses suffering from Alzheimer's disease. They were subjected to both emotional and cognitive tasks in order to determine the impact of Type A behavior and cardiovascular reactivity on older adults. Hostility was assessed with the State-Trait Anger Scale, the Spielberger Anger Expression Scale, an avoidance scale, The Framingham Type A Behavior Pattern Scale, and a structured interview (Vitaliano et al.). The investigation showed that the emotional task was more arousing than the cognitive task, and that BP heightened with hostility, criticism, avoidance, expression, and suppression of

anger in relationship to one's spouse (Vitaliano et al.). Criticism of the Alzheimer's spouse led to higher DBP and heart rates in hypertensive individuals than in normotensive individuals. Those who were rated higher on emotional expression had higher DBP and heart rates than those whose emotions were more controlled (Vitaliano et al.). Given these results, the investigators suggested that, for the cardiovascular system, controlled anger in response to one's spouse's behavior may be healthier and expressed or repressed anger less healthy. These findings, unlike others (Christensen & Smith, 1993; Deary et al., 1994; Denollet et al., 1995; Everson et al., 1998; Lai & Linden et al., 1992; Lawler et al., 1995; Meesters & Smulders, 1994; Melamed et al., 1993; Miller et al., 1998; Sinha et al., 1992; Suarez et al., 1998) indicate that female subjects and older subjects also experience cardiovascular reactivity and higher DBP levels in response to stressful life events (Vitaliano et al.).

Nonpharmacological Treatment Models

Much of the treatment for EH has involved medication, as well as changes in lifestyle, such as lowered salt intake, relaxation, and exercise (Rosen et al., 1994; Weiss et al., 1991). For patients whose hypertension is based on a strong genetic factor, ACE inhibitors, angiotensin antagonists, and diuretics that target salt processing and the reninangiotensin system have been found effective (Mann, 2000). In cases in which BP elevation is mediated by the SNS, situations that involve emotion, alpha blockers and beta-blockers are generally helpful (Mann). Other categories of drugs that are prescribed, such as calcium channel blockers

and vasodilators, also decrease the work of the heart and allow the blood vessels to relax (Stuart et al., 1992). Although medication has provided the best results for BP maintenance and reduction to this point (Cooper, 1990; Weiss et al.), it fails to address psychological aspects of the problem. Adherence to a medication schedule is cited as difficult for many EH patients to maintain, and side effects can be extreme, including metabolic difficulties, fatigue, depression, insomnia, and sexual dysfunction (Bellg, 1998).

By introducing a mind/body approach to the treatment of EH that utilizes combined pharmacologic and psychosocial interventions, or psychosocial approaches alone, alternatives are provided for those who cannot take medication or for those who refuse to comply with a medication regime (Kostis et al., 1992; NIH, 1997; Russek & Schwartz, 1996). In addition, more appropriate interventions can be designed to meet the unique needs of EH patients (Kostis et al., Mann, 2000; Weiss et al, 1991). In mild cases of EH, in those involving patients who will not comply, and in situations where side effects from medication occur, an integrated approach offers more treatment options (Agras, 1992; Cooper, 1990; Epstein, 1992; NIH). Prior research that supports nonpharmacological approaches and psychosocial techniques [exercise, relaxation methods, stress-management, and cognitive-behavioral techniques], for EH and cardiac patients, is relevant to this study, providing suggestions for protocol design. Techniques that have been found to decrease BP in other studies have been included in the current protocol and techniques that have not supported a decrease in BP have been excluded.

Because of the large amount of evidence associating emotion with EH, researchers have explored psychosocial treatments thought to lessen

cardiovascular reactivity and SNS responses: relaxation methods, biofeedback, meditation, deep breathing, and physical exercise (Bennett & Carroll, 1994; Benson, 1993; Benson & Stuart, 1992; Dubbert, 1992a; Fahrion, Norris, Green, Green, & Snaar, 1986; Forbes & Pekala, 1993; Friedman et al., 1987; Goebel, Viol, & Orebaugh, 1993; Jacob et al., 1992; McGrady, 1994; McGrady et al., 1995; Nakoa et al., 1997; Stuart et al., 1992; Young, 1994). Cognitive-behavioral techniques, skills training, and stress-management programs have also been explored, but to a lesser degree (Beck, Stanley, Baldwin, Deagle & Averill, 1994; Bellg, 1998; Brondolo et al., 1997; Goldfried & Sobocinski, 1975; Goleman & Gurin, 1993; Suinn, 2001; Trzcieniecka-Green & Steptoe, 1994). Belar and Deardorff (1995) identify relaxation therapy, short term individual therapy, group therapy, family therapy, consultation skills, liaison skills, assessment skills, behavior modification techniques, biofeedback, hypnosis, public education, and compliance motivation as competence areas for health psychologists dealing with many different illnesses, including EH. Methodologies, such as humor, prayer, lifestyle change, meditation, relaxation, visualization, schema changes, skills training, and problem-solving have all been empirically studied in terms of their relationship to symptom reduction and disease stabilization (Affleck et al., In Press; Anderson, 1992; Blumenthal et al., 1991; Brondolo et al., 1997; Cox & Gonder-Frederick, 1992; Dixit et al., 1994; Gauvin, Rejeski, & Norris, 1996; Kiecolt-Glaser & Glaser, 1992; Kiecolt-Glaser et al., 1993; Kiecolt-Glaser, Page, Marucha, MacCallum, & Glaser, 1998; Lehrer, Sargunraj, & Hochron, 1992; Miller et al., 1998; Nezu et al., 1998; Suinn, 2001; Tobin, Holroyd, Baker, Reynolds, & Holm, 1988; Whitehead, 1992; Woodhouse, 1993; Young, 1992).

Tension reduction. Meditation, a tension reduction technique, has been studied by Dixit et al. (1994) who assigned 48 subjects with mild to moderate EH to a Vipasana meditation group and 19 EH subjects to a wait list control group. The results showed that the meditation had a significant affect on the regulation of BP. In the late 1960s, Benson measured physiological functioning in meditators after they had been sitting quietly for an hour to first establish a baseline measurement. Whereas their "quiet" behavior did not change, the shift from everyday thinking to meditation was associated with the consumption of 17 percent less oxygen, slower breathing, a drop of lactate in the bloodstream, and slower brainwave patterns (Benson, 1993). Another study focusing on techniques to calm the SNS (Forbes & Pekala, 1993), compared progressive relaxation, hypnosis, deep abdominal breathing, and a baseline of sitting quietly. A sample of 231 nurses received the treatment alternatives. Before and after each treatment, peripheral skin temperature and pulse rate were assessed. All three experimental treatments were found to reduce psychophysical responsivity in comparison to the control group experience of sitting quietly.

Nakao and his associates (1997) reported success in two different studies with BP biofeedback, a method that was developed in the 1960s to control tension and regulate BP. In the first, a one session study, 20 out of 50 healthy male students were able to reduce their SBP significantly using BP biofeedback. In the second study, self-monitoring of BP was compared with self-monitoring of BP plus biofeedback. For the 30 EH patients, ages 38 to 65, the biofeedback monitoring situation was found more effective in decreasing SBP, DBP, and pulse rates than the BP, self-monitoring situation alone. Even in a high-stress condition, the treatment was effective in depressing BP, whereas BP did not decline in the BP,

self-monitoring group. Fahrion and colleagues' (1986) study combined thermal biofeedback, relaxation techniques, and diaphragmatic breathing. Findings indicated that 58 percent of the 77 patients in the sample were able to eliminate medication and that another 33 percent were able to reduce their medication by half. These decreases were found to be stable over 33 months. McGrady and Higgins (1990) monitored 39 unmedicated EH patients for 8-weeks to establish baseline. The patients were then provided with 16 sessions of EMG and temperature biofeedback combined with progressive relaxation. BP measurements, both at home and in the laboratory, for 8-weeks following the sessions, found that 23 subjects reduced their BP by 5 mm Hg, seven reduced their BP by less than 5 mm Hg, and nine showed no decrease. In McGrady's (1994) study of thermal biofeedback combined with relaxation techniques in a group therapy situation, BP decreased in the participants but not in the untreated controls.

The purpose of relaxation training, another stress reduction technique, is to provide calmness and reduce SNS arousal (McGrady et al., 1995). Progressive muscle relaxation, developed by Jacobson (1938), involves tensing and then relaxing various muscle groups (Craske et al., 1992). It is sometimes used as an alternative to Benson's work with meditation and diaphragmatic breathing. Research results concerning relaxation techniques have been conflicting. Relaxation techniques seem to control EH in the short run, but they do not have a positive effect over the long-term course of the disease (Jacob et al., 1992; NIH, 1997). A meta-analysis of data from several relaxation studies revealed that the effects of relaxation therapy for both unmedicated and medicated EH patients was minimal (Jacob et al.; NIH). To challenge these findings under a condition in

which medication for EH was experimentally controlled, Jacob and associates randomly assigned 19 patients, ages 38 to 68, to either a temperature biofeedback, relaxation group, or a stress education, attention placebo group. Following a 4-week baseline period, the relaxation group was taught progressive muscular relaxation. Treatments lasted 3 months, involving weekly 45-minute sessions with a behavioral therapist and homework assignments. At the end of the 3-month period, physicians were to decide whether BP medication could be reduced. Findings showed that no statistically significant difference was found between the two treatments in the behavioral therapist's office versus the physician's office. Instead, BP reduction was found to be situation specific. In the behavior therapist's office, under both conditions, relaxation and attention placebo, BP levels decreased. However, in the physician's office BP levels remained the same for subjects in the relaxation group, as well as for those in the attention placebo group (Jacob et al.). These results call into question the merit of relaxation as a favorable technique for BP reduction in time and the generalizability of the effects of relaxation, if it does occur, from one setting to another for EH patients (Jacob et al.). However, they show that working with a therapist can produce a positive effect for EH patients. Benson (1993) finds errors in this study, citing his own work to show that "the relaxation response can lower BP by about 5 to 10 millimeters of mercury in people with hypertension" (p. 245).

Physical exercise and fitness. Physical exercise is the most common nonpharmacological treatment for cardiovascular disease used in the treatment of people with EH and/or Type A personality characteristics (Bellg, 1998;

Blumenthal et al., 1991; Dubbert, 1992b; Gauvin et al., 1996; Huddleston, 1992; O'Connor et al., 1989). Benson (1993) studied the physiological responses of subjects who meditated as they bicycled and found that their metabolic rates dropped by 11 percent. Stuart et al. (1992) found that exercise moderated the effect of bedrest and had a positive impact on the heart and vascular system. Huddleston's (1992) review of exercise and cardiovascular health reports that physically fit subjects with high BP had a lower risk of death due to cardiac factors than physically unfit subjects with low BP. Oldridge and colleagues' (1988) meta-analysis involving 4,000 heart patients found that those who participated in exercise programs had a 25 percent lower mortality rate than those who did not participate in exercise programs (1992). Rosen et al. (1993) report that "several large-scale epidemiological studies have confirmed that sedentary individuals, with low levels of physical activity, have a higher risk of becoming hypertensive" (p. 80). In addition, they identified 10 controlled studies that depict a drop in SBP or DBP levels in EH patients after exercise. However, the authors concluded that because of design flaws "the effectiveness of aerobic exercise as a sole intervention of hypertension remains uncertain" (p. 84).

Not all fitness research provides positive results concerning the relationship between exercise and cardiovascular problems (Bennett & Carroll, 1994; Blumenthal et al., 1991; Young, 1994). Some of the available evidence suggests that exercise exerts only a minor impact on risk of recurrent MI. Young looked at the moderating effects of physical fitness on stress for 414 male law enforcement personnel, a population known for stressful working conditions and mortality from heart disease. Data from files and bimonthly subject screenings, covering a period of eight months, involving officers from the city of Austin, Texas, led to

the conclusion that cardiorespiratory fitness has no moderating effects on either physiological or behavioral risk factors for cardiovascular disease, other than for smokers. Blood pressure, Type A behavior, and cholesterol remained unchanged with cardiovascular fitness, although smokers involved in the fitness regime smoked fewer cigarettes per day. Measures that analyzed cardiovascular fitness, coronary artery disease risk, job stress, and general stress found all these factors to be positively related. In another study, 651 male MI patients visited a gym three times a week for 3 years. Mortality rates did not show a significant difference when this group was compared with the nonexercise control group (Bennett & Carroll). A study at Duke University (Blumenthal et al.) of 99 male and female EH patients, assigned them to three groups: 16 weeks of aerobic exercise, 16 weeks of strength training, and a 16-week waiting list control group. When the findings were analyzed, all of these groups, including the control groups, showed a drop in DBP and SBP levels.

Stress-management groups. The original stress-management groups for cardiac rehabilitation focused upon anxiety (Cotton, 1990; Rosen et al., 1994; Suinn, 2001). The interventions were based upon either the Diathesis-Stress or the fight/flight model (Cotton, 1990; Pelletier, 1993; Selye, 1978) and utilized relaxation and other tension reducing techniques to decrease SNS effects. Currently, a variety of approaches are integrated into stress training program: relaxation, meditation, deep breathing, visualization, laughter, cognitive techniques, assertiveness skills, and exposure techniques (Bennett & Carroll, 1994; Ornish et al., 1990; Rosen et al.; Suinn). Anger, as well as anxiety, is targeted as a stress-related problem. An 8-to-12-week stress-management group

process usually emphasizes attaining self-confidence and control over one's life (Rosen et al.; Scherwitz & Rugulies, 1991; Suinn).

Trzcieniecka-Green and Steptoe (1994) studied 78 cardiac patients before and after a stress-management group process. The treatment program involved a muscular relaxation training program, relaxing visualizations, keywords for relaxation, relaxation cassettes, discussion of problems that impeded relaxation, information about stress, and counseling concerning realistic expectations. Pre-tests and post-tests looked at emotional state, functionality, social activities, personality, spousal relations, chest pain, and demographic and clinical data. Although only 51 cardiac patients finished the program, findings indicated that they experienced significantly reduced anxiety and depression, as well as improvements in general well-being, activities of daily living, social interactions, and sexual relationships (Trzcieniecka-Green and Steptoe). Because the drop-out rate was high and the study did not use a control group, the results are questionable. The investigators report that patients with higher initial anxiety showed more improvement when relaxation techniques were employed and that adherence is important for a lasting effect (Trzcieniecka-Green and Steptoe).

In a well known study, The Lifestyle Heart Trial (Ornish et al., 1990), the investigators emphasized a combination of diet, exercise, support, and stress-management activities for cardiac patients in a group format. The control group was given information about the illness, but they did not receive the treatment protocol. The experimental group showed a 91 percent reduction in angina symptoms, a 24.3 percent reduction in cholesterol levels, and a decrease in plaque in the coronary artery, whereas in the control group, patients experienced an increase in symptoms and more severe signs of illness.

The San Francisco Life-Style Heart Trial (Scherwitz & Rugulies, 1991) assessed whether a stress-management program could influence changes in lifestyle that could reverse coronary artery disease. The 48 subjects were assigned to a lifestyle change group or a non-lifestyle change group. In the lifestyle change group, the treatment began with a week long retreat during which subjects received three hours of stress-management, one hour of aerobic exercise, and one hour of group therapy daily. Following the retreat, subjects met two evenings a week for one year in support groups that emphasized aerobics, stress-management, food plans and support. Spouses were invited to attend all of the sessions. Psychosocial measures included Goldberg's 30-item scale to measure general well-being, a nonstandardized social support questionnaire, Spielberger's State and Trait Anger Scales, and Friedman's Type A measurement scale. At the follow-up, the experimental group had "reduced fat intake from 30.8 percent to 7.0 percent," "increased their exercise from 20.2 to 37.2 minutes per day," and "they increased their stress-management from 6.3 to 77.7 minutes per day" (Scherwitz & Reiner, p. 92). The control group's behavior at the end of the study was the same as it was at baseline. In reference to their cardiovascular health, 82 percent of the experimental group showed changes in the direction of regression of atherosclerosis. In the control group, 53 percent of the subjects experienced a progression in their illness (Scherwitz & Reiner).

Cognitive-Behavioral Anger-Management Methodologies

Anger studies show that people who are the most prone to vent their rage get angrier, not less angry, and aggression, directed against another human being, is not cathartic, but instead produces even more arousal (Beck, 1999; Ellis, 1977). Other studies show that cynical beliefs and frequent angry feelings, when they are "acted out" in the environment or repressed in the body, predict the development of EH and CHD (Pierrakos, 1987; Rosen et al., 1994; Stuart et al., 1992; Wolman, 1988). Cognitive-behavioral methods, such as skill building, cognitive restructuring, and exposure techniques, that have been helpful in reducing anxiety, can be applied to anger-management (Barlow, 1988; Brondolo et al., 1997; Suinn, 2001). Systematic desensitization, a behavioral technique that involves real or imagined exposure to a source of fear, can be used with EH patients for imaginal or "in vivo" exposure to the source of their anger (Belar & Deardorff, 1995). Suinn reviewed six studies with significant results that support the use of anxiety management and visualization techniques for anger control. Anger arousal can also be decreased through work with dysfunctional thoughts and emotions, skills training, and exposure techniques that confront patients with situations that trigger their anger (Acton & Doring, 1992; Bennett & Carroll, 1994; Brondolo et al.; McKay et al., 1989). Cognitive-behavior strategies for anger reduction may be introduced to EH patients in either a group or individual format (Belar & Deardorff, 1995; Davison et al., 2000).

Cognitive-behavioral technology attempts to actively change angry behavior and angry thought processes in a brief time period (Beck, 1999; Ellis, 1977;

Brondolo et al., 1997; Ellis & Lange, 1996; Ellis & Tafrate, 1998). Because these techniques emphasize changes in behavior, belief systems, and underlying schema, they are believed to be more appropriate for the treatment of anger and hostility than a technology based upon relaxation alone (McKay et al., 1989; Bennett & Carroll, 1994). In the therapeutic process, patients identify and confront dysfunctional thinking patterns and successfully challenge or dispute angry thoughts and hostile behaviors that have a negative effect on their cardiovascular health (Beck, 1999; Ellis, 1977; Ellis & Tafrate, 1998). Empirical research supports the addition of cognitive-behavioral techniques to treatment programs for EH and heart disease (Belar & Deardorff, 1995; Bellg, 1998; Bennett & Carroll, 1994; Suinn, 2001). Work with cancer patients has found that problem-solving reduces the feelings of helplessness that lead to anger (Nezu et al., 1998). Cognitive-behavioral methods used with people suffering from post-traumatic stress disorder who have experienced sleep difficulties, irritability, hypervigilance, restlessness, difficulty concentrating, startle responses, and outbursts of anger have successfully eliminated these symptoms (Meichenbaum, 1996). Similarly, cognitive-behavioral methodologies have successfully helped chronic pain patients manage their pain and their irritability (Hardin, 1998).

In reference to cognitive therapy with CHD patients, Friedman et al. (1987) divided male subjects, who suffered one heart attack, into control, comparison, and experimental groups. The control and the experimental group received cardiac and lifestyle counseling. Patients in the experimental group also attended an intense weekly support group for a year that involved stress-management, cognitive therapy, and relaxation. Those in the comparison group did not receive

any form of intervention. After 5 years, the experimental group had 50 percent fewer heart attacks than both the control group and the comparison group.

Bellg (1998) reviewed cognitive-behavior methods that have been used with heart disease patients and referred to a technique that teaches cardiac patients to differentiate "the bait," that is the situation that triggered them, from "the hook," how they choose to respond to the situation. He reported that support groups that emphasized Type A behavior, stress-management, cognitive-behavioral methodologies, and relaxation, were more helpful to cardiovascular patients than those that involved group discussion and physical exercise (Bellg).

The Heartsavers Lifestyle Program (Kostis et al., 1992), a 14-week group treatment program that included relaxation, exercise, diet, stress-management, food planning, social support, and anger management, met for two hours per week. Each group was made up of eight participants and their partners. Assessment looked at mood state, anger and hostility ratings, current life stresses, diet, exercise, and support systems. A 9-month follow up reported that 31 subjects (94 percent) were not receiving drug therapy, the mean DBP was significantly reduced compared with pretreatment levels, and the average body mass level decreased. The mean DBP at the 9-month follow up was 3.9 mm Hg higher than the mean DBP level at treatment end.

A study of the use of stress-management training for aggressive parents, all normotensive, provided 29 aggressive parents with a 13-week, skills training class in communications, empathy, and problem-solving (Acton & During, 1992). Relaxation techniques and cognitive strategies were also utilized. The findings showed that parents who finished the program were less likely to assault their children, experience child-related stress and generalized anger, and have

problems with disruptive behavior, even though their children's behavior had not in fact changed. A control group was not used for ethical reasons, however, the study was repeated six times over a 2-year period using different treatment personnel with the same results (Acton & Daring).

Another study of anger-management that involved normotensive individuals in a high-stress occupation provided exposure-based treatment in a group setting for anger problems (Brondolo et al., 1997). Traffic Enforcement Agents, from the New York City Department of Transportation, who "are exposed to a high level of provocation as a function of their job and report that conflicts with the public elicit high levels of anger" were selected as subjects (Brondolo et al., p. 82). The 79 subjects were provided with a treatment program designed to inspire hope, analyze anger triggers, reduce arousal, teach anger-management through exposure and response-prevention techniques, and give support. The 9-week program employed cognitive, affective, and behavioral exercises to control arousal and angry behaviors. The study highlighted the costs of excessive anger, anger triggers, cognitive restructuring, and staying in control during degrading exposures. The authors (Brondolo et al.) concluded that "it is helpful to incorporate exposure-based exercises early in treatment with angry individuals" because it is easier for them to grasp cognitive errors in the middle of an exposure versus in the middle of a discussion" (p. 95).

Support for the use of cognitive-behavioral methods for anger control comes from many sources, such as Bilodeau (1992), Cotton (1991), Ellis (1977), McKay et al. (1989), Friedman (1991), Wickless and Kirsch (1998), and Beck (1999). The usefulness of these theories concerning anger-management and anger-reduction in relationship to EH should further the development of biopsychosocial

treatment protocols in this critical area (Goleman & Gurin, 1993; Cooper, 1990; Mann, 1999; Pelletier 1993, 1977; Rosen et al., 1994; Weiss et al., 1991). Their use is also supported by a number of studies using cognitive-behavioral and problem-solving approaches in relationship to other illnesses (Anderson, 1992; Dubbert, 1992a; Nezu et al., 1998; Whitehead, 1992; Young, 1992).

Resistance to Treatment

One problem in initiating an anger-management approach with EH patients is their resistance to psychological treatment (Davison et al., 2000; Mann, 2000; Winkleby et al., 1988). According to the Stages of Change model, people with cardiovascular problems tend to be at the precontemplative or contemplative level (Bellg, 1988). Cardiac patients are often middle-aged or older, less interested in psychological explanations or solutions, less inclined to pay attention to internal emotions and feelings, and less apt to ask for, or receive, support from others (Bellg). A study that looked at the social psychology of illness support groups found that "support seeking was highest for diseases viewed as stigmatizing" such as AIDS and breast cancer and "lowest for less embarrassing but equally devastating disorders, such as heart disease" (Davison et al., p. 205). When describing their results, the investigators wrote:

Aids patients, for instance, are 250 times more likely to participate in a support group than hypertension patients. Breast cancer patients have formed over 40 times as many support groups as heart disease patients whose conditions undeniably benefit from psychosocial and behavioral

changes Support levels in the cardiovascular disorders, even as combined, are only slightly higher than those for anorexia, a condition whose prevalence is almost 1,000 times less prevalent It is noteworthy that, although more women will die from heart disease every year ... our findings indicate that breast cancer patients participated in support groups 40 times higher than all heart disease patients, male or female. (pp. 214 & 215)

People whose attendance at support groups was minimal included those diagnosed with chronic pain, ulcers, hypertension, and emphysema (Davison et al., 2000). Even though heart attack survivors were found to experience severe anxiety, anxiety did not lead to affiliative behaviors. They ranked 15th in desire for support. This finding corresponds with studies that show a minimum amount of support in the life of heart patients (Orth-Gomer et al., 1993), a large amount of suspiciousness in the Type A personality (Friedman & Rosenman, 1974), and the inability of EH patients to feel or express emotions (Mann, 2000; Spielberger, 1999; Winkleby et al., 1988).

An Opposing View

Although most studies conclude that there is an association between emotions, such as anger and stress, and EH, a few do not support this relationship. Tulen et al. (1993) raised questions about the role of emotion in EH and heart disease. Healthy, male volunteers were injected with either an infusion of epinephrine or norepinephrine, neurotransmitters common to emotional

states, or a placebo. Their mood was assessed with the Profile of Mood States and the State-Trait Anxiety Inventory and their cardiovascular activity was observed immediately after the infusions began and for the entire eight-hour infusion period (Tulen et al.). Heart rate and BP were recorded continuously. Findings showed that psychological parameters and mood did not change at any time during or after the experiment. Neither the subjects' personalities nor behaviors were affected by the increase of circulating catecholamines. This study suggests that the cardiovascular system may not be as sensitive to emotion as other studies report, or that external stressors, rather than internal biochemical factors, are the source of high BP.

An investigation of lifestyle, coping mechanisms and job stress found an indirect relationship between stress and BP. Lindquist et al. (1997) studied 337 men and 317 women in the workforce using questionnaires and BP measurements. Although they found that men exhibited higher BP than women, men had more inadequate coping strategies than women, using alcohol, smoking, binge eating, and withdrawal to cope with stress. The authors concluded that stress does not affect BP directly, but that it contributes to lifestyle behaviors. Under stress, people employ coping mechanisms that are unhealthy, such as smoking and overeating, which may indirectly affect BP.

A meta-analysis conducted (Suls et al., 1995) to determine the relationship between anger and EH concluded that although anger experience was positively correlated with elevated BP, the relationship was too small for interpretation and highly variable among studies in the sample. The authors indicated that they had no confidence in their results even though the findings were statistically significant, supporting an association between BP and anger among

representative samples (samples that are most like the general population). Findings showed that the expression of anger was associated with lower SBP rates and no change in DBP rates, but that the experience of anger correlated with a rise in SBP. The study is therefore supportive of the "anger-in" rather than the "anger-out" group. Another meta-analysis (Jorgensen et al., 1996) that looked at relationship between elevated BP and personality also found a weak link between perceived anger and EH.

Summary

The review of the literature concludes that there is a relationship between anger and EH (Clay, 2001; Rosen et al., 1994; Smith, 1992; Smith & Christensen, 1991; Suinn, 2001; Tavis, 1989; Weiss et al., 1991; Wolman, 1988) and supports the design of a cognitive-behavioral, anger-management protocol (Ornish et al., 1990; Russek & Schwartz, 1996; Suinn, 2001). Contributions from the fields of psychosomatics, psychophysiology, behavioral medicine, and health psychology, as they relate to EH, are described. They explain the historical relationship between emotion and cardiovascular disease and posit methods for assessing the effects of anger on blood pressure (Belar & Deardorff, 1995; Dare, 1993; Lewis & Lewis, 1972; Reich, 1973). Results of current empirical studies depict the role of expressed anger, hostility, and suppression of anger on EH (Everson et al., 1998; Miller, 1993; Nyklicek et al., 1997). Others show that lack of support affects EH and heart disease patients, exacerbating illness and slowing recovery (Lepore et al., 1993; Oxman et al., 1995). Some studies portray a relationship between

stressful life events and EH (Davison et al, 2000) and others identify the impact of family interactions, particularly those that have hostile or competitive components, on EH (Kiecolt-Glaser et al., 1993; Malarkey et al., 1994). Finally studies that look at gender, life stage, and EH attribute a stronger relationship between high BP and anger with men than with women, although each gender is affected by the relationship between emotion and EH, but differently (Lawler et al., 1993; Lai & Linden, 1992).

Research results concerning nonpharmacological treatments used with EH patients, such as biofeedback, meditation, and physical exercise (Blumenthal et al., 1991; Dixit et al., 1994; Nakao et al., 1997) are provided. Many of these studies reported positive results, but not consistently. Stress-management approaches and cognitive-behavioral techniques that have been supported empirically and reported in the literature are integrated into the protocol for this case study (Ornish et al.; Russek & Schwartz; Suinn). In addition, noncompliance of EH patients during treatment is reviewed (McGrady et al., 1995; Rosen et al., 1994) and research providing opposing views has been cited (Jorgensen et al., 1996; Suls et al., 1995; Tulen et al., 1993).

Empirical Study Proposal

This empirical study is based on the theoretical assumption, supported by the works of Barefoot (1991) and Spielberger (1999), that an association exists between blood pressure (BP) and anger. In some individuals, depending upon genetic background, sympathetic nervous system (SNS) sensitivity, and personality traits (Cotton, 1990; Gatchel, 1993), more intense and more frequent anger is expected to lead to higher systolic blood pressure (SBP) and/or diastolic

blood pressure (DBP) levels and less intense and less frequent anger is expected to lead to lower SBP and/or DBP levels. Therefore, it is expected that after an 8-week cognitive-behavioral therapy protocol, found in Appendix A, two “anger-in” and two “anger-out” male EH patients will improve their ability to express anger as demonstrated by the following: a reduction in the number of self-reported anger episodes, a reduction in the rated intensity of these anger episodes, a reduction in the number and intensity of significant-other reported anger episodes; decreased scores on the State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999), decreased scores on the Multidimensional Anger Inventory [MAI] (Siegel, 1986), and decreased scores on the Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001). Subjects’ coping and problem-solving skills will also increase as demonstrated by their scores on the Social Problem-Solving Inventory-Revised [SPSI-R] (D’Zurilla et al., 1996).

Self-reports of anger, the Anger Events Inventory found in Appendix B, and significant-other anger reports, the Anger Events Inventory: Partner Form, found in Appendix C, will be recorded three times per week throughout the study from baseline to follow-up. Standardized instruments will be administered at baseline, study midpoint, study completion, and one month follow-up. This chapter contains a complete description of the research purpose, the research hypotheses, and the research method, including: subject selection and benefits, exclusion and inclusion criteria, assessment measures, procedures, research design, validation plan, analysis of results, anticipated results, and limitations of the study.

Purpose of Study

The purpose of the proposed empirical study is to demonstrate therapeutic interventions for "anger-in" EH patients and "anger-out" EH patients that include cognitive-behavioral techniques for anger-management. The investigator hypothesizes that when cognitive-behavioral interventions for the expression or control of anger are introduced to EH patients in an eight-session therapy protocol, blood pressure (BP) measures will decrease, coping mechanisms will be enhanced, and behavior associated with anger will be transformed from the inhibition of it or the aggressive expression of it to a more rational and reasoned communications approach, demonstrated by scores falling between the 25th and 75th percentile on the State-Trait Anger Inventory-2 [STAXI-2](Spielberger, 1999). Research questions include: 1) To what extent will two "anger-in," male EH patients improve their ability to express anger appropriately after receiving a protocol designed to treat "anger-in" subjects?; 2) To what extent will two "anger-out," male EH patients improve their ability to control anger after receiving a protocol designed to treat "anger-out" subjects?; and 3) To what extent will BP measures decrease following the protocols for both the "anger-in" and the "anger-out" EH subjects? The study questions whether "anger-in" and "anger-out" EH patients can make significant improvements in their ability to deal with anger through the use of cognitive-behavioral, anger-management techniques, and if, by doing so, an associated decrease in BP will occur.

Research Hypotheses

The current study hypothesizes that both “anger-in” and “anger-out” EH patients will make significant improvements in their ability to cope with anger after an 8-week course in cognitive-behavioral, anger-management therapy. In association with the eight individual anger-management sessions, a decrease in BP is expected to occur. Based upon Spielberger’s (1999) results, the investigator hypothesizes that BP will be lower when anger scores on the STAXI-2 fall below the 75th percentile, the percentile that separated those in the normative sample with “normal” anger levels from those with “problem” anger levels, and in some cases even lower, when the score falls below the 50th percentile, the median percentile score (Spielberger, p. 13). It is also expected that self-reports, measured by self-monitoring (Appendix B), and significant-other reports, measured by significant-other-monitoring (Appendix C), will show that the number of irrational, aggressive, and impulsive angry acts and outbursts, as defined by Beck’s (1999) list of cognitive distortions and strategies will lessen and that the number of unexpressed or withheld angry feelings will decrease following cognitive-behavioral, anger-management training. Significant others will monitor changes in the subjects’ behavior by noting how many times a specific behavior occurs during a day (the significant other monitoring form is found in Appendix B). For example, a subject who withheld angry feelings in the past, portraying inhibited or unexpressed anger, would now tell people when or if he were angry. This new behavior should be noticed by significant others, if it occurs after the subject begins the treatment, when it did not occur prior to the treatment.

Methods

Subjects

The current study requires that two “anger-in” and two “anger-out” male EH patients complete a fourteen week program that includes one week of pretesting and training, one week of baseline measurements, an 8-week therapy protocol, and a 4-week follow-up period. At least one additional “anger-in” EH patient and at least one additional “anger-out” EH patient will be placed in a waiting pool in case an additional subject is needed. The waiting subjects will be offered an opportunity to experience the protocol at study’s end.

Inclusion Criteria

Although their involvement is voluntary, subjects need to have their physicians’ approval in the form of a formal letter in order to participate in the study. Physician support is necessary because the techniques used may reduce BP and affect the dosage of BP medicine necessary to maintain health. In addition, the subjects selected are expected to meet the following inclusionary criteria: male, between the ages of 35 and 65, high school graduates or above, currently employed, having been diagnosed for at least six months with EH, taking medication to reduce or control hypertension for at least two months, having no additional active medical condition other than diabetic comorbidity, and demonstrating a willingness to be audiotaped during the eight therapy

sessions. In addition, subjects must have at least one significant other who lives with them in the same home or is present often enough to answer questions about the subject's daily communications patterns. This person may be a spouse, adult child, relative, good friend or housekeeper.

Exclusion Criteria

Exclusions are: a) subjects may not have been hospitalized, either in the past or recently, for a mental illness; b) subjects may not be diagnosed with cancer, secondary hypertension, previous myocardial infarction, active asthma, or chronic obstructive pulmonary disease; c) subjects may not change medications during the course of the study or have their dosages raised; d) subjects may not refuse to have their anger test results forwarded to their physicians; and e) subjects may not have attended psychotherapy or counseling sessions at any time in the last 3 years.

Recruitment

The investigator will attend the Private Practice Department meeting at PCOM to request physician participation in referring male, EH patients to the study. Osteopathic primary care physicians (PCPs) who agree to participate will be provided with a letter soliciting volunteers to be handed to EH patients who fit the criteria for the study. Following a referral, volunteers will contact the investigator by telephone if they are willing to participate in the study. A preliminary telephone interview will be conducted in order to assess whether

they meet the inclusionary requirements. Those candidates who do not meet the inclusionary requirements will be thanked and dismissed. Candidates who meet the inclusionary criteria will be provided with information concerning the general purpose of the study and informed consent forms.

Benefits

Subjects will not be paid for their participation in the study. However, each subject will receive a digital machine for BP self-monitoring to be used during the study that they are entitled to keep when the study is completed. Other benefits derived from participation include eight, one and a half hour therapy sessions, weekly BP monitoring, weekly anger assessments, weekly significant other assessments, and standardized anger assessments that are scored, interpreted, and explained to the subject's personal care physician (PCP) by trained professionals when the study is completed.

Measures

Standardized measurements, utilized at baseline, at midstudy, at the end of the study, and at a one month follow-up period, include the State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999) that assesses subjects' ability to handle anger within normal limits; the Multidimensional Anger Inventory [MAI] (Siegel, 1986) that assesses the cognitive, behavioral, and affective dimensions of anger; the Mahan and DiTomasso Anger Scale

[MAD-AS] (Mahan, 2001) that emphasizes the multidimensionality of anger; and the Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996) that measures EH patients' coping and problem-solving skills. To avoid contamination, the standardized tests will be administered by a doctoral candidate in psychology, someone other than the investigator, who specializes in cognitive-behavioral therapy and testing.

Nonstandardized measures include the Anger Events Inventory, developed by the investigator, for both self-monitoring and significant-other monitoring, that elicits the number of irrational or impulsive angry acts, the number of unexpressed or withheld anger experiences, and the intensity and duration of each. The significant-other data will be compared with the data collected by the subjects in order to achieve a more realistic picture of anger in the home environment (DiTomasso & Colameco; Knelp et al., 1993). The Subjective Anxiety Scale (Wolpe, 1973) will be given at the end of each clinical session to identify the degree of anxiety participants experience during the eight therapy sessions. A 45-minute, semi-structured, clinical interview, including demographic questions and a health history, will be administered during the initial pretesting session. Blood pressure (BP) measures will be taken three times a week during the length of the study by each subject using a digital self-monitoring BP machine supplied by the investigator (McGrady et al., 1995; NIH, 1997). In addition, BP levels will be measured by the subjects' physicians four times during the study: at baseline, at midstudy, at the end of the study, and at the one month follow-up session, and these results will be compared with those reported by the subjects themselves.

To decrease error in self-reports, subjects will receive instruction in the mechanics of self-monitoring (DiTomasso & Colameco, 1982; Meichenbaum, 1994). Emphasis will be placed on helping the subject understand the self-monitoring process. In addition, the specific behaviors to be monitored will be defined and an easy-to-learn, self-monitoring method will be designed that identifies the explicit situations to be monitored. Subjects will be positively reinforced for data collection and informed about reactive effects (DiTomasso & Colameco). Meichenbaum's suggestions that the format for self-monitoring be matched to the subject's abilities, that the subject be encouraged to record the data immediately, including actual thought processes, and that the investigator anticipate and review reasons for nonadherence with the subject before the data collection begins will also be initiated (1994).

The clinical interview. The demographic questionnaire, clinical interview, and health history (Appendix I), will be administered one time only, during the initial pretesting session. The investigator will conduct this initial interview in order to establish rapport. The clinical interview, including a demographic questionnaire and a health history, is a 45-minute semi-structured interview. Questions elicit information about the following topics: age, gender, ethnicity, race, socio-economic class, BP history, other health problems, medications, marital history, number of children, parental history, including parental health issues, siblings, occupation, hobbies, previous psychotherapy, use of alcohol and drugs, other addictions, sexual activity, social relationships and support, religious background, suicide attempts, and lifestyle issues, such as smoking, caffeine, and exercise. A copy of the demographic questionnaire, clinical

interview, and health history that will be utilized by the investigator can be found in Appendix I. The interview will be tape-recorded in order for results to be validated. An independent observer, a doctoral candidate in psychology, will review the tape to be certain that the information has been recorded accurately.

The State Trait Anger Inventory-2 [STAXI-2] (Spielberger, 1999). The STAXI-2, a 15-minute, self-report inventory, developed by Spielberger (1999) has eight scales, five subscales, an overall anger expression index, and 57 items.

Individuals rate themselves on a four-point scale that assesses intensity and frequency of certain behaviors. The scales and subscales include: State Anger (S-Ang), Feeling Angry (S-Ang/F), Feel Like Expressing Anger Verbally (S-Ang/V), Feel Like Expressing Anger Physically (S-Ang/P), Trait Anger (T-Ang), Angry Temperament (T-Ang/T), Angry Reaction (T-Ang/R), Anger Expression-Out (AX-O), Anger Expression-In (AX-I), Anger Control-Out (AC-O), and Anger Control-In (AC-I).

“Anger-in” refers to angry feelings that are experienced but not expressed. A typical response would be: “I tend to judge people, but I don't tell anyone.”

“Anger-out” refers to aggressive physical or verbal behavior and a typical response would be: “I strike out at whatever infuriates me” (Spielberger, 1999).

“Anger control” is when people attempt to hold back outward expressions of anger or control it through attempts to relax (Spielberger). Internal consistency for males and females is high across all scales and subscales (.84 or higher, median $r = .88$), except for the trait anger-reaction subscale that had an internal consistency of .76 and .73 for normal males and females (Spielberger).

The STAXI-2 has face, construct, concurrent, and discriminate validity. It has been used with patients referred for coronary angiography, those identified as cardiovascular reactive, people diagnosed with CHD, high school students in a study of BP and anger expression, borderline hypertensives, and women with elevated BP (Spielberger, 1999). It has been compared with other anger instruments, such as the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957) and the Hostility and Overt Hostility scales of the Minnesota Multiphasic Personality Inventory (Cook & Medley, 1954; Hathaway & McKinley, 1967). It was selected for use in this study, because its operational definition of anger is in alignment with the investigator's purpose and it has been normalized on groups of patients suffering from CVD.

The STAXI-2 was normed on 1,644 normal adults and 276 psychiatric patients. The psychiatric patients had substantially higher scores than normal adults on the "anger-in" scale and the overall anger index and significantly lower scores than normal adults on the "anger-control-out" scale and the "anger-control-in" scale, suggesting that they tend to inhibit their anger more frequently, but have less control over the outward expression of it than most adults (Spielberger). In reference to gender differences, males had higher "anger-out" scores and overall anger indexes and lower "anger-control-in" scores than females. In general, "anger-out," "anger-in," and overall anger scores decreased with age.

The Multidimensional Anger Inventory [MAI], (Janda, 2001; Siegel, 1986). The MAI (Siegel, 1986), another a self-report inventory, was designed to assess the dimensions of anger relevant to cardiac disease; anger was operationally defined

in terms of hypertensive reactions to “triggering” circumstances. Siegel (1991) hypothesized that “hypertensives became more angry more often than their normotensive counterparts because of a greater sensitivity to anger stimuli” (p. 52). Dimensions assessed included frequency, duration, magnitude of anger, mode of expression (“anger-in” and “anger-out”), hostile outlook, and range of anger eliciting situations. The MAI is a 38-item test that takes about 10 to 15 minutes to complete. Items came from existing anger inventories and others were written specifically for the MAI. Factor analysis shows that anger arousal includes frequency, duration, and intensity as subsets, with hostile attitude, and range of anger eliciting situations as separate factors. Anger expression broke down into “anger-in” and “anger-out.” Moderate test/retest reliability at .75, over a 3-to-4-week period, and high internal consistency at .89 has been demonstrated. The correlation of MAI results with those of other inventories measuring the same and different constructs has established validity (Siegel, 1986).

The Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001). The Mahan and DiTomasso Anger Scale [MAD-AS] (Mahan, 2001) emphasizes the multidimensionality of anger, measuring the physical, cognitive, and behavioral components of anger and assessing the frequency, severity, and expression of anger. It identifies individuals who are most capable of engaging in “acting-out” behaviors (Mahan).

The MAD-AS contains seven homogeneous subscales; six that are stable and one that is unstable over time (Mahan, 2001). The subscales resulted from a factor analysis that identified the following seven factors: 1) Anger Dyscontrol (people

who act out when angry); 2) Angry Cognitions (people who spend more time thinking about the anger situation than acting on it); 3) Verbal Expression of Anger (people who are vocal about their anger); 4) Physiological Arousal (people who have physiological symptoms when they are angry); 5) Anger Justification/Blame (people who argue with others or blame others); 6) Externalization of Anger (people who hold others responsible for their anger and who want to hurt them in return); and 7) Difficulty with Anger Resolution (people who do not tolerate others' mistakes, who are bitter, and hold on to anger for a protracted time period) (Mahan).

Validity was established by comparing mental health inpatients (subjects diagnosed with Cluster B psychiatric disorders) with an outpatient group (subjects referred by a licensed psychologists) and a control group (students pursuing master's degrees at a Philadelphia medical school and nurses in a rural hospital in central Pennsylvania) (Mahan, 2001). Findings were that the inpatient group was angrier, providing validity for the MAD-AS. The inpatients scored higher than outpatients and the outpatients, in most instances, scored higher than the control group.

A factor analysis demonstrated construct validity, extracting seven factors that accounted for 62.3 percent of the variance (Mahan, 2001). The MAD-AS total score correlated with the total score of the State-Trait Anger Expression Inventory and the total score of the Beck Anxiety Inventory supporting construct validity (Mahan). Criterion validity, encompassing both concurrent and predictive validity, was established by hypothesizing that mental health inpatients with Cluster B personality disorders would be angrier than mental health inpatients without personality disorders (Mahan). Statistically significant

results found that inpatients with personality disorders were angrier than inpatients without personality disorders. In addition, inpatients with personality disorders scored higher on each of the seven anger components than inpatients without personality disorders (Mahan).

In reference to reliability, internal consistency was established using Cronbach's coefficient alpha. The total score of the MAD-AS equaled .96 and the subscale values were: Scale 1 (.93), Scale 2 (.83), Scale 3 (.82), Scale 4 (.86), Scale 5 (.70), Scale 6 (.73), and Scale 7 (.69) (Mahan, 2001). Test/retest reliability for the total scale was .82 and for each of the subscales test/retest reliability was: Scale 1 (.65), Scale 2 (.68), Scale 3 (.72), Scale 4 (.65), Scale 5 (.63), Scale 6 (.66), and Scale 7 (.09) (Mahan).

Limitations of the MAD-AS include the fallibility of self-report instruments to faking and answering questions in terms of social desirability. In addition, it is normed on a mental health subject sample that is not reflective of the general patient population in hospitals and medical clinics (Mahan, 2001). Therefore the results may not be generalizable to the population of hypertensive patients used in the current study.

Social Problem-Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996). The Social-Problem Solving Inventory-Revised [SPSI-R] (D'Zurilla et al., 1996) theorizes that those who solve problems effectively experience less psychological distress and cope with problems in living more efficiently than those who are less skilled in problem-solving. This 52-item self-report inventory derived from the original 70-item Social Problem-Solving Inventory [SPSI] that was composed of the "Problem Orientation Scale" and the "Problem-Solving Skills Scale." The

"Problem Orientation Scale" was divided into three subscales: "the Cognition Subscale," "the Emotion Subscale," and "the Behavior Subscale." The Problem-Solving Skills Scale" was divided into four subscales: "the Problem Definition and Formulation Subscale," "the "Generation of Alternative Solutions Subscale," "the Decision-Making Subscale," and "the Solution Verification and Implementation Subscale." Each subscale contained 10 items (D'Zurilla et al.). The goal was to assess "problem orientation," a person's thoughts about his or her own ability to solve problems, and "problem-solving proper," the strategies and techniques used to solve problems. The SPSI had positive test-retest reliability coefficients and criterion validity for college students, a middle-aged group, elderly community residents, a high-stressed group, depressed older adults, and suicidal adult psychiatric patients. However, a factor analysis did not support the two-scale, seven-subscale, model. A new model was empirically derived based upon the five factors that were identified.

The factor analysis confirmed that: a) positive problem orientation and negative problem orientation were two different, although related, constructs; b) the cognitive and emotional subcomponents were not separate constructs; c) avoidance behavior was a separate factor; d) the four problem-solving skills were indistinguishable from each other and needed to be grouped under one label; and e) items designed to assess deficits in problem-solving formed a separate factor characterized by impulsivity and carelessness. The 52-item SPSI-R was designed upon the basis of this data (D'Zurilla et al.).

The SPSI-R's five scales are: "Positive Problem Orientation" (PPO: 5 items), "Negative Problem Orientation" (NPO: 10 items), "Rational Problem-Solving" (RPS: 20 items), "Impulsivity/Carelessness Scale" (ICS: 10 items), and

“Avoidance Style” (AS: 7 items) (D’Zurilla et al., 1996). The “Positive Problem Orientation Scale” reflects a person’s ability to see a problem as a challenge, believe that he or she can solve it, and resolve to do it within a reasonable amount of time. The “Negative Problem Orientation Scale” depicts a person who perceives problems as threats, doubts his or her own ability to solve them, and is frustrated by having problems in his or her life. The “Rational Problem-Solving Scale” measures the application of effective problem-solving principles and methods, such as gathering facts and identifying obstacles. The “Impulsivity/Carelessness Style Scale” identifies people who consider few solutions, often acting upon their initial thought or idea. The “Avoidance Style Scale” identifies people who prefer to avoid problems, rather than confront them, putting them off or hoping they will disappear miraculously. Scoring involves transferring the subject’s answer (0 to 4) to an answer sheet that is divided according to the five subscales. The scores per item within each scale are added to derive the scale score. A total Social Problem-Solving Score is derived when the scale scores are entered into the formula: $SPS = PPO/5 + RPS/20 + (40 - NPO)/10 + (40 - ICS)/10 + (28 - AS)/7$.

Research using a sample of college students and a sample of psychiatric inpatients shows that the SPSI-R subscales are stable across different populations (D’Zurilla et al., 1996). In each sample, a positive view of problems was associated with a rational problem-solving approach and a negative view of problems with either an avoidant or impulsive/careless approach to problems. It was found that a negative view of problems could be associated with a rational problem-solving approach. The SPSI-R was normed on samples of high school students, college students, middle-aged community residents, elderly

community residents, adult Alzheimer caregivers, nursing students, adult psychiatric inpatients, adolescent psychiatric patients, cancer patients in need of psychological treatment, and adult depressed outpatients (D'Zurilla et al.). The four psychiatric samples displayed lower problem-solving scores than the other groups on all scales except the Impulsive/Carelessness Scale and the Avoidance Scale (D'Zurilla et al.). In reference to reliability, two independent samples of college students, one sample of middle-aged adults, and one sample of elderly adults showed adequate to high internal consistency on all five scales of the SPSI-R, ranging from a low of .68 to a high of .95. Test-retest reliability for one sample of college students and the sample of nursing students also ranged between .61 and .91, suggesting relatively stable scores over time (D'Zurilla et al.).

Confirmatory factor analyses, as well as additional indices, such as the "Root Mean Squared Error of Approximation," confirmed that the five-factor model fit the data provided by SPSI-R (D'Zurilla et al., 1996). Concurrent validity was established through a reanalysis of data from the SPSI, comparing the revised data from the Problem-Solving Scale (PSI). When the scales from both tests were compared, all the correlations were significant, ranging from moderate to moderately high, indicating that both tests were measuring the same constructs, but with enough variation so as not to be exact duplicates of each other (D'Zurilla et al.). Predictive validity was established by comparing the SPSI-R with other tests designed to measure psychological stress, such as the "Perceived Stress Scale" and the "Symptom Checklist 90-Revised." All of the SPSI-R scales, except the "Rational Problem-Solving Scale," significantly correlated with the distress measures and the "Negative Problem Orientation Scale" correlated the

most highly with the other distress measures (D'Zurilla et al.). The SPSI-R was also compared with measures of positive psychological well-being, such as the "Rosenberg Self-Esteem Scale" and the "Satisfaction with Life Scale." The results showed a significant association between problem-solving skills and psychological well-being. The "Rational Problem-Solving Scale" showed the strongest relationship and the "Negative Problem Orientation Scale" showed the least strong relationship (D'Zurilla et al.). To establish convergent and divergent validity, the SPSI-R was compared with tests presumed to measure the same constructs, such as optimism and locus of control, and with tests presumed to measure different concepts, such as intelligence and aptitude. Results were significant in reference to both convergent and divergent validity (D'Zurilla et al.).

The Anger Events Inventory. The Anger Events Inventory (Appendix B), a self-report rating scale developed by the investigator, will be used by the subject to note the number and type of anger episodes he has experienced, as well as their intensity, and duration. A collateral assessment tool (Appendix C) will be given to the spouse or significant-other to be completed independently, because subjects' observations of their own anger may be colored by denial or inhibition (Emmons, 1991; Pennebaker, 1991; Snyder et al., 1997). Item construction is based upon face validity; however, the instrument has not been tested for other forms of validity or for reliability. Data resulting from the two forms, in the form of frequency counts and points indicated on an eight-point scale (Barlow, 1988) will be compared. The main areas emphasized in both the self and the Significant-other assessments include:

Frequency: how many times a day the subject experiences an anger episode

Ease: how easy/difficult it was for subject to become angry (8-point scale)

Intensity: how angry the subject becomes--mild to extreme (8-point scale)

Duration: how long the subject remains angry: minutes, hours, days (open ended question)

Anger eliciting situations: incidents, statements by others, or possible triggers preceding the anger (open-ended question subject to a content analysis and frequency count)

Anger/in or anger/out: a) anger/in: conscious and withheld or unconscious and not expressed); b) anger/out: expressed using verbal aggression or expressed using physical aggression (yes/no answer)

Degree of The Subjective Anxiety Scale (Wolpe, 1973). The Degree of The Subjective Anxiety Scale (Wolpe) will be used at the end of each clinical session to assess the degree of anxiety or discomfort experienced in relationship to the therapy session. Previous findings that EH and cardiac patients are not comfortable sharing feelings or receiving support (Davison et al., 2000; Mann, 2000), normal clinical goals, imply that anxiety may be triggered in therapy sessions rather than relaxation. If BP were to increase, rather than decrease, during the therapy protocol, an assessment of the possible effect of the therapy on that increase is important. The Subjective Anxiety Scale (Wolpe) will be given to the subject immediately following each clinical session and should take less than a minute to complete.

When the scale is introduced, the subject is told to think of the most intense anxiety he ever experienced or could imagine and assign it the number 100. He is

also told to think of a state of absolute calm and assign it the number zero. The subject is then asked to rate himself at this moment [the end of the therapy session] on the scale. According to Wolpe, most subjects give a figure without hesitation and one that is more meaningful than if the subject were asked to describe his experience in adjectives. The unit of measurement is called the subjective unit of disturbance (SUD). It is recommended that subjects provide a number that characterizes their first intuitive response (Wolpe).

Blood pressure (BP) measures (NIH, 1997). After a training period, the BP measurement will be taken using a digital self-monitoring BP machine [a validated electronic device] provided by the investigator (NIH, 1997). Both SBP and DBP will be measured in the evening, at least one hour after dinner, a time when control across the day is best determined (NIH). SBP will be identified by the appearance of sound and DBP will be identified by the disappearance of sound (NIH). The BP will be taken according to the Joint National Committee-VI (JNC-VI) guide to the prevention and treatment of hypertension recommendations (NIH). The BP measures will be taken in a sitting position, with feet flat on the floor, and the arm supported at heart level. Prior to the measurement the subject will rest for 5 minutes and he will refrain from smoking or ingesting caffeine for a period of 30 minutes. Two sets of measurements will be recorded, separated by 2 minutes during which the subject remains seated. The measurements will be recorded on a daily record sheet supplied by the investigator that can be found in Appendix D. The record sheets will be turned in weekly to the investigator who will average the two measurements obtained per day for SBP and DBP in order to determine the weekly average SBP and DBP.

The appropriate sized cuff will be placed on the upper non-dominant arm and the bladder will encircle, at the least, 80 percent of the arm. This is necessary to insure accurate measurement (NIH). The same room in the house, and the same chair or couch should be used for each measurement, because BP is susceptible to postural changes and the BP should be measured at the same time each day (McGrady et al., 1995). In addition to a digital self-monitoring BP measurement machine, an appropriate sized cuff, and a record sheet to record BP levels three times per week, each subject will receive an index card with instructions for BP measurement printed on it. Although the investigator will be looking for a reduction in SBP and DBP, it is understood that when the BP measurement occurs on the same day as treatment, the readings may go up rather than down, because sessions addressing anger can be stressful if patients are anxious about their anger and uncomfortable with its expression. Some of the interventions proposed for this study, such as exposure exercises and visualizations, may elicit emotional responses causing higher BP readings. Therefore, results two or more days after each session and those at the end of the protocol are expected to be more meaningful.

Procedures

The investigator will attend the Private Practice Department meeting at PCOM to request physician participation in referring EH patients to the study. Osteopathic primary care physicians (PCPs) who agree to participate will be provided with a letter soliciting volunteers to be handed to EH patients fitting the criteria for the study. The solicitation letter is found in Appendix L.

Following a referral from their physicians, male EH patients will contact the investigator by telephone if they are willing to participate in the study. A preliminary telephone interview (found in Appendix F) will be conducted with those patients to assess their ability to meet the inclusion requirements.

Candidates who meet the inclusion criteria will be provided with information concerning the general purpose of the study and an informed consent form for self and partner that can be found in Appendix G and Appendix H. They will also be scheduled for an initial pretesting session. Eight to ten male, EH patients, who meet the inclusion requirements, will be individually pretested in an office at one of PCOM's medical clinics. The initial pre-testing session will include a 45-minute demographic, health, and clinical interview (Appendix I), conducted by the investigator, a 15-minute BP measurement session provided by the PCP, and an anger and coping skills assessment session (STAXI-2, HAT, MAI, MAD-AS, SPSI-R) provided by an independent investigator who is a clinical psychology, doctoral candidate, well-versed in testing procedures and experienced with the instruments to be used in this study. The standardized tests will take approximately an hour to complete and, therefore, subjects should plan on the initial session lasting at least two hours.

Following the pre-testing period, four subjects, two "anger-in" EH males and two "anger-out" EH males, will be selected. In addition to meeting the inclusion criteria for this study, these subjects will be approved by PCOM's research committee. After selection, they will be given digital BP self-monitoring machines, BP cuffs that fit the circumference of their arms, record sheets for their BP levels, and a notecard with typed instructions for BP self-monitoring, found in Appendix D. They will receive a demonstration on the use of the digital BP

machine from the investigator and they will be taught how to record their BP levels. Their initial SBP and DBP measurements, compiled during a practice period, will be compared with the measurements provided by their PCP. Once the practice and training session has concluded, when self-monitored BP ratings and PCP clinic ratings are comparable, the subjects will be asked to record daily baseline measurements.

Subjects, referred to the study by their PCPs, who do not meet the inclusion requirements, as discerned by information obtained at the initial pre-testing session, will be thanked for their participation and dismissed. However, they will receive benefits from their involvement in two ways. First, a letter will be sent to their physicians explaining their anger scores on the standardized tests. The physician can incorporate these results into the care of the patient. Second, a list of options, including telephone numbers of facilities to help with anger management and a referral to the Brief Therapy Clinic at PCOM will be provided.

If more than two "anger/in" subjects and more than two "anger/out" subjects meet the inclusionary requirements, they [both "anger/in" and "anger/out" subjects] will be held in a pool for a 16-week period, the approximate time needed for the multiple-baseline study across individuals to be completed. People held in the pool will be offered the 8-week, anger-management protocol free of charge at the end of the formal study. Following pre-testing, the first and the second subjects to achieve a score above the 75th percentile on the STAXI-2 in the "anger-in" category will be assigned to that protocol and the first and the second subjects to achieve a score above the 75th percentile on the STAXI-2 in the "anger-out" category will be assigned to

that protocol. Because all four subjects are taking BP medication, a medication control subject is unnecessary.

The investigator will meet with each subject for eight, one and a half hour treatment sessions. The brief therapy protocol for the eight, anger-management sessions can be found in Appendix A. A brief therapeutic intervention is desirable because: a) it offers a focused, problem-solving approach; b) it provides a psychoeducational format; c) it is appropriate for exposure techniques; and d) it emphasizes self-responsibility (Belar & Deardorff, 1995). Research concerning the cardiac personality suggests that they will respond positively to concrete problem-solving approaches, rather than to a longer term psychodynamic approach (Davison et al., 2000; Pierrakos, 1987; Snyder et al., 1997). Research on EH patients indicates a resistance to self-exploration and the acknowledgment of feelings that is more likely to respond to a shorter protocol (Davison et al., 2000; Mann, 2000).

The 8-week protocol will begin with the first "anger/in" and the first "anger/out" subjects to establish baseline BP measurements. When the "anger/in" person's scores and the "anger/out" person's scores indicate an ability to manage anger within normal limits, by achieving a percentile score below 75 on the STAXI-2 (Spielberger, 1999), and when a drop in BP in each subject is determined, the protocol will be introduced to the second "anger/in" and the second "anger/out" subjects. The model for this multiple baseline, time-lag, experimental design, across individual subjects, can be found in Appendix K. The STAXI-2 (Spielberger) will be given at the end of the fourth session and at the end of the eighth and final session. Therefore, the second set of "anger/in" and "anger/out" subjects will not begin their protocol until midpoint

in the first protocol or at the end of the first protocol, depending on when anger scores decrease. If at the end of the first 8-week protocol, the subjects have not lowered their BP levels or scored under a percentile score of 75 on the STAXI-2 (Spielberger), two or more additional sessions may be added. If subjects' scores and BP levels do not decrease with the addition of a few sessions to the protocol, the second set of subjects will begin a modified protocol, changed in order to eliminate factors that may have thwarted the attainment of positive results and approved by the dissertation committee. If the second set of subjects are able to lower their BP levels and their scores on the STAXI-2 (Spielberger) to a percentile score below 75, a third set of "anger/in" and "anger/out" subjects will be provided with the same modified 8-week anger-management protocol. If neither the first set of subjects nor the second set of subjects are able to lower their anger scores on the STAXI-2 (Spielberger), or their BP levels, the null hypothesis will fail to be rejected, stating that an 8-week, anger-management, cognitive-behavioral, therapy protocol is not effective in reducing BP for EH patients or in helping them learn to manage their anger.

At the end of the fourth session (midstudy) and at the end of the eighth session [final session], the subjects will be given a 15-minute break followed by the standardized anger and coping tests administered by the same independent investigator who assessed them during the pre-testing session. Subjects will submit their BP measures to the investigator at the end of each week. At the one-month follow-up, post-treatment session, the same standardized, normed, self-report tests will be administered by the independent investigator. Blood pressure measures for the four-week post-treatment period will be collected from the subjects, as well as recent (within the week) BP readings from their PCPs.

They will be thanked for their participation in the study and told that their physician will receive a summary of the results of the study when the study is completed, approximately within 3 months. They will be told to contact their PCPs to receive information concerning their individual improvement.

The “anger/in” and the “anger/out” protocols (Appendix A) will combine relaxation and breathing exercises (DiTomasso, 2000) that are utilized to decrease SNS arousal with a cognitive-behavioral approach to anger-management (Beck, 1999). Depending on the patient’s unique difficulties with anger, gauged by assessment at baseline (Spielberger, 1999), “anger-out” or “anger-in” strategies will be emphasized in the sessions and the appropriate protocol will be administered. Each therapy session will be tape-recorded and transcribed for purposes of validation. When the sessions are concluded, an independent investigator will read the transcripts to ensure that the investigator conducted the sessions in accordance with the cognitive-behavioral, anger-management design approved by the research committee. The reading will help to establish internal validity, confirming that the investigator followed the steps outlined in the proposal. In addition, the tape may be annotated in order to provide material for further research of an exploratory nature. The protocols will be similar for both the “anger/in” and the “anger/out” treatment subjects, except for the visualization, role play, and exposure exercises. These will emphasize expression for the “anger-in” subjects and control for the “anger-out” subjects. Their subject matter will be independently verified by a trained observer.

The protocols will begin with a psycho-educational focus that describes the relationship between stress, the SNS, the fight or flight response, and emotions,

such as anger, with EH. Relaxation, breathing, and meditation exercises will be introduced in the sessions and assigned for homework (three times per week) as practice is extremely important to promote and reinforce change (Barlow, 1988; DiTomasso, 2000). Although the protocols for the "anger-in" and the "anger-out" person differ with the introduction of specific cognitive-behavioral techniques, the exercises for both protocols involve identification and change of automatic irrational thoughts, visualizations, role-plays, rehearsals, assertiveness training, and exposure techniques.

In the 8-week program, EH patients will learn to take responsibility for their anger and recognize that they either inhibit anger or deal with it impulsively for a variety of reasons: lack of social acceptability, shame, denial, belief that "it will go away on its own," belief that others deserve it, and the attitude that it is a tool to be used to get back at other people (McKay et al., 1989). Subjects will be taught how to reduce physical tension, control excessive anger, reveal hidden and out-of-awareness emotions, identify belief systems and attitudes that trigger anger and hostility, manage stress, and take responsibility for their feelings, whether that means becoming more or less expressive with anger. Each session will last a total of 90 minutes. A manual that describes each of the eight, 90-minute sessions can be found in Appendix A.

If a subject drops out of the study, he will be replaced by a member of the waiting pool and an attempt will be made to interview him as to the reason for his withdrawal. The investigator will note the similarities and the differences between the person who drops out and those who remain. Procedures to avoid

potential sources of bias will be introduced. These include taping the therapy sessions and keeping checklists and records concerning each step in the subject's process.

Research Design

This study utilizes a multiple-baseline, time-lag experimental design, across individual subjects (Morgan & Morgan, 2001), one for "anger-in" subjects and one for "anger-out" subjects. When the scores and BP measures for the first "anger-in" and the first "anger-out" subjects decrease, the intervention will be introduced to the second "anger-in" and the second "anger-out" subjects. In the study design, not every subject receives the intervention at the same time. Those who do not receive it are considered the control group. While the first "anger-in" and "anger-out" subjects are receiving the anger-management protocol, the second "anger-in" and "anger-out" subjects are monitoring their BP and anger. They will receive the protocol only after the scores of the first "anger-in" and "anger-out" subjects decrease. This design shows an effect if the scores of the control subjects decrease only after they receive the protocol and not before, indicating that extraneous factors have not been influential in the change (Kazdin, 1982). In this study, once the first "anger-in" and "anger-out" subjects are treated, they are expected to demonstrate a decrease in BP and an improvement in anger expressive behavior, whereas the nontreated subjects' behavior patterns are not expected to change. A graph depicting this design can be found in Appendix K.

A limitation of the design involves interdependence of effect. Anger measures that the second subject is completing while waiting for therapy may influence anger behavior before the second person receives the treatment. Blood pressure monitoring to establish baseline may affect the behavior of the untreated person. Placebo effects could occur because the subject knows that he is participating in a study or because of the unusual attention received from his physician. If all subjects are attended by the same physician, as is a possibility in this case, the untreated person may also begin to change. Therefore, it would be impossible to unambiguously infer that the intervention was the causal agent.

In order to minimize the problem that could result from interdependence of effects, assessment procedures will be utilized with caution. For instance, although BP self-monitoring, frequency of angry events, intensity of anger, and duration of anger will be measured three times per week, the standardized anger measurements will be given only four times at pretesting, midstudy, posttesting, and one-month follow-up. In regard to fewer assessments, Kazdin (1982) writes "Under some conditions it may be useful to assess performance only occasionally Specifically, if the baseline phase is likely to be extended, if the observations are likely to ... influence the behavior that is assessed, and if the investigators have some reason to believe that behaviors are likely to be especially stable" (p. 148). Withholding treatment from the second subject, until the first subject changes, could have clinical and ethical considerations. However, in this case, the problem is of less concern, because subjects will be taking medication to control their blood pressure and will be under the care of a physician. In addition, subjects will be given a number to call in case they

encounter a crisis, or they may terminate their involvement if the consequences are undesirable.

Analyzing the results of a multiple-baseline, time-lag design (Appendix K) can be problematic if the behavior of one subject is altered with the intervention and the behavior of the second subject, or other subjects, if there are more than two, is not altered. In this study, if the first subject changes and the second does not change, the results will be considered too ambiguous for internal validity to have been achieved. However, if the first subject does not change, a change may be made in the protocol, and the adjusted protocol given to the second subject (Kazdin, 1982). If the second subject's behavior changes, a third subject can then be assigned and provided with the adjusted protocol. A special advantage of this design is that the intervention may be modified if it is found lacking. This provides an opportunity to design clinical interventions to specifically meet the "anger-in" and "anger-out" EH patient's needs. Another positive aspect of this design is that once the intervention is implemented, it does not have to be withdrawn, as is the case with a single-case, withdrawal design (Kazdin). Therefore, if behavior and BP improve upon the introduction of the cognitive-behavioral, anger-management protocol, there is no need to stop or withdraw the treatment. In this study, strength of effect will be shown through magnitude of the effect, rapidity of change, and stability of the new baseline performance after treatment is applied to four EH patients, two "anger-in" and two "anger-out" patients with anger management problems.

Validation Plan –Analysis of Results

An independent observer will review the taped sessions and compare them to the protocol for the eight anger-management sessions, for each subject, in order to establish validity. These findings will indicate that the investigator conducted the study as designed and that each subject received the same protocol.

The results will be analyzed using a combination of basic statistical tests (nonparametric statistics) to summarize the raw data, correlational analysis to establish the relationship between the anger scores and the BP measures, tables to provide a visual representation of the data, and visual inspection involving changes in means across phases, changes in level, changes in trends, and latency of change (Kazdin, 1992).

Anticipated Results and Limitations of the Study

Results. The results expected following treatment are that subjects' systolic blood pressure (SBP) and diastolic blood pressure (DBP) levels will decrease both during and after the 8-week protocol and remain at a decreased level through the one-month follow-up session. In addition, scores on the State-Trait Anger Expression Inventory-2 [STAXI-2] (Spielberger, 1999) are expected to decrease, for all subjects who participate in the study, to a level below baseline, that is beneath the 75 percentile level. These findings are expected to hold true for both "anger-in" and "anger-out" subjects, as defined by Spielberger (1999).

Benefits. The benefits subjects will receive from participation include better coping skills, increased anger-management skills, lower BP levels, more productive and positive relationships, less stress, and greater self-awareness. In addition, their PCPs will receive reports of their anger test scores that may be integrated into their healthcare.

Limitations.

1. Findings may not generalize to EH patients who visit different physicians, are taking alternative medications, are taking no medication at all, or who suffer from other illnesses besides EH. In addition, generalizability to EH patients from different areas of the country or from different countries, as well as to those who are members of other socio-economic classes, genders, races, ethnic groups, and religions may be limited.

2. A second limitation involves the size of the sample. In this single case, across individuals' study, using a multiple-baseline, time-lag design, the sample size is two for each condition. Therefore, the study has low power and is biased toward null findings. If statistical associations do not emerge, additional exploration may still be warranted with a larger sample size and one that is more representative of the EH population.

3. Problems also exist with the use of pre and posttesting. The inventories to be used in this study were not available in alternative forms. Therefore, the results could be prejudiced by a testing bias. There is no way to rule out error from pretesting and its influence upon the results.

4. Finally, the interface between mind and body, in terms of measuring techniques, may be ambiguous. Data about better coping mechanisms and anger

release methods may not be supported by the physical data, such as a drop in blood pressure, or vice versa. In fact, anxiety about the protocol, could conceivably be associated with a rise in BP.

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Appendix A

Manual For The Eight Therapy Session Protocol

The emphasis of the 8-week, cognitive-behavioral protocol designed for essential hypertension (EH) patients with anger management problems is psychoeducational. Patients will learn about the physiological determinants of EH, the effect of emotions upon blood pressure, and the consequences of arousal upon the disease (Cotton, 1990; Pelletier, 1977; Wolman, 1988). The sessions will focus upon reducing physical tension, controlling excessive anger (inhibited and expressed), revealing hidden, out-of-awareness emotions, accessing and transforming belief systems that trigger anger, and implementing coping strategies. The cognitive-behavioral techniques to be employed include relaxation, meditation, deep breathing, assertiveness, disputation, role-playing, rehearsal, and exposure. Each session will last one and a half hours.

Session Number One

Capsulation

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. What is Essential Hypertension (Cooper, 1990; Mann, 1999, Goldberg et al., 1998)
3. Information About Physiological Arousal (Cotton, 1990; McKay, Rogers, & McKay, 1989; Peletier, 1977; Selye, 1978)
4. Attaining Conscious Awareness of Your Anger
 - A. What Makes You Angry (Bilodeau, 1992)
 - B. Describe a Recent Anger Episode
 - C. The Costs of Your Anger (McKay et al.)

5. Relaxation and Breathing Exercises (Benson, 1993; Craske, Barlow, & O'leary, 1992; Jacobson, 1938)

Progressive Muscle Relaxation (Craske, Barlow, & O'leary, 1992; DiTomasso, 2000)

6. Assign Homework and Review Self-monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

7. Fill Out "The Subjective Anxiety Scale (Wolpe, 1973)

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. The client's agreement and collaboration is important. The client is given the opportunity to suggest additional agenda items that are in alignment with the goals of the session.

2. Explanation of Essential Hypertension (Cooper, 1990; Goldberg et al., 1998; Mann, 1999; NIH, 1997)

High blood pressure (BP) is a persistent elevation of the pressure of the blood circulating in the arteries. Blood pressure is usually recorded as systolic blood pressure (SBP) and diastolic blood pressure (DBP). The systolic represents the heart contracting as it pushes blood through the arteries and the diastolic indicates the pressure of the heart when it relaxes after each contraction. An example of a normal BP reading is 120/80, of a Stage 1 reading is 145/90, of a Stage 2 reading is 165/100, and of a Stage 3 is 185/115. Hypertension is generally classified Stage 1, 2, or 3.

3. Information About Physiological Arousal (Cotton, 1990; McKay, Rogers, & McKay, 1989; Peletier, 1977; Selye, 1978)

Research findings depict a relationship between high blood pressure, physiological arousal, and emotional. The cardiovascular system pumps the blood that moves chemicals through the body. Some of these chemicals activate emotions, such as anger or fear. The chemicals also produce increases in heart rate, blood pressure, vascular resistance, and secretions, such as cortisol, catecholamines, glucose, and insulin, all of which may contribute to hypertension.

Fear and anger are experienced by every human being. In certain cases, fear and anger can be productive forces. For instance, performances on the stage are better with a moderate amount of anxiety. Anger allows people to protect themselves and handle threats to their survival. If one believes a dangerous situation is about to occur, "the flight or fight response" part of the sympathetic nervous system is triggered automatically. At that point, the physiological system turns on high gear, and changes occur in the body: muscular tension, rapid pulse, sweating, abdominal distress, trembling, and quickened breathing. The body is attempting to protect itself.

Under threatening circumstances, two chemicals, adrenaline and noradrenaline, are released from the adrenal glands. These chemicals send messages to the rest of the body to prepare immediately for action. Arousal lasts as long as people perceive a threat to their existence. After the danger has passed, it takes some time before the body can rid itself of the effects of the adrenaline and noradrenaline. Therefore, people feel keyed up for awhile. When the danger

passes, the parasympathetic nervous system restores the body to its normal resting state.

Physiological arousal affects the cardiovascular system. Blood flow speeds up in order to deliver oxygen to the tissues that need it. The rise in testosterone levels fuels aggressive activities, but it may lead to arteriosclerosis as well, the most common cause of artery disease. Glucose is pumped into the blood to provide energy to escape the threat. Blood pressure is elevated and if the elevation is sustained over time, it can damage the heart and the arteries.

Although "the flight or fight response" is designed to protect people from threats to their survival, it has been generalized to many life experiences that involve a psychological rather than a physical threat. These situations are uncomfortable and distressing, but not life threatening. As soon as a person perceives a threat, even if it is the result of a fairly minor event, such as a frown from the boss, the sympathetic nervous system may trigger the same way it would if the person were being chased down the street by a mugger. Adrenaline and norepinephrine pour into the bloodstream and the body acts as if it were under attack. People with high blood pressure often have this response when they perceive that they are being treated unfairly or that an unjust situation is occurring. At first, they feel fear in response to their perception, but this emotion shifts quickly to anger. The desire to fight replaces the original fear and the blood pressure goes up in preparation for the fight. Some people express aggression through angry or hostile activities. Others prepare to fight, but stop the outward expression of the anger, thinking hostile thoughts and perhaps even contemplating images of revenge instead. Both the impulsive expression of anger and the inhibition of anger (holding back) are known to be negative for blood

pressure. In both cases, the sympathetic nervous system swings into high gear, and over time can cause internal damage to the body. Therefore, new coping skills for anger control need to be developed.

4. Identification of triggers. Each subject is asked to participate in the following exercises in order to explore and become consciously aware of the factors that trigger his anger.

A. What Makes You Angry? (Bilodeau, 1992)

What incites your anger? Here are some of the common answers to that question.

Which ones are true for you. Are there others you would like to add to the list?

Please rank those you select from least likely to most likely to trigger your anger.

- | | |
|-----------------------------|-------------------------------------|
| Traffic Jams ___ | Inconsiderate People ___ |
| Arrogance ___ | Injustice ___ |
| Rude People ___ | Taxes ___ |
| Prejudice ___ | People Who Cheat Me ___ |
| Tailgaters ___ | People Who Cut in Line ___ |
| Yelling ___ | Disbelief of what I say ___ |
| Manipulation of my time ___ | Workers Who Don't Do Their Jobs ___ |
| Tardiness ___ | My paycheck ___ |
| Child Abuse ___ | Criticism ___ |
| Waiting ___ | People Who Won't Listen ___ |
| Lies ___ | False Accusations ___ |

Other:

_____	_____
_____	_____
_____	_____

B. Describe a Recent Anger Episode

Directions: Describe one of your most recent anger episodes. Be as specific as possible, explaining who, what, where, when, and how. Include the details, explaining the exact sequence of events that occurred. Include in your description what triggered it, your physical symptoms, thoughts, behaviors, and feelings. The example could come from any area of your life. It may involve work, your family, your friends, driving, being a consumer, your love life, or your finances.

C. The Costs of Anger (McKay et al., 1999)

You are beginning to develop an important understanding of your anger and how it has sometimes controlled your life -- in its outward expression or its inhibited, withheld form. In addition to physiological costs, anger has emotional costs. You may not receive support from others; it may take a toll on your relationships. Therefore, the Anger Impact Inventory (McKay, Rogers, & McKay, 1989, pp. 39-41) is used to indicate how anger has taken a toll on your life.

Directions: Using the five point scale provided: (0= No Effect; 1= Minor Effect; 2= Moderate Effect; 3= Significant Effect; 4= Major Effect), rate the impact your anger has on the following items:

1. Relationships to authorities (teachers, bosses, police, government employees and so on) _____
2. Relationships to peers and colleagues at work _____
3. Relationships to subordinates at work _____
4. Relationships to customers, clients, business associates and so on _____
5. Relationships to children _____
6. Relationships to children's teachers, other parents _____
7. Relationships to spouse or lover _____
8. Relationships to previous spouse or lover _____
9. Relationships to in-laws _____
10. Relationships to parents _____
11. Relationships to other family members _____
14. Relationships to current friends _____
13. Relationships to former friends _____
14. Relationships to neighbors _____
15. The role of anger in lost relationships _____
16. Relationships to recreational groups or organizations _____
17. Relationships to religious groups or organizations _____
18. Relationships to political and other groups _____
19. Impact on your health of anger episodes _____
20. Effect of anger symptoms (rapid heart rate, tension, shoulder and neck pain, headache, irritability, _____

- feeling of pressure, restlessness, insomnia,
brooding, and so on) _____
21. Time lost to angry feelings _____
22. Anger intrusion into relaxing or pleasurable
activities (sex, sports, hobbies, day in the country,
vacations, and so on) _____
23. Effect of anger on drinking or drug use _____
24. Effect of anger on creativity or productivity _____
25. Effect of anger on experience while driving _____
26. Accidents, errors, and mistakes _____

As you examine your inventory, see if any patterns emerge. Are you angrier at work or at home? With intimate or more distant relationships? Do you tend to feel angrier with authorities and parents or with peers. Are your sexual relationships major battlegrounds? Have a significant number of relationships been lost in anger? Now is the time to identify one or two areas where you really want to concentrate your efforts. As you learn basic anger management skills, you may wish to practice these new skills in the critical areas that you are now identifying.

5. Relaxation and Breathing Exercises (Benson, 1993; Craske, Barlow, & O’leary, 1992; DiTomasso, 2000; Jacobson, 1938;)

Relaxation and breathing exercises are used to decrease physiological arousal. During this study, you will learn three different types of relaxation exercises to help you control your BP. Research shows that relaxation techniques may help to reduce EH when you use other methods as well. The theory behind these techniques states that if you are relaxed you cannot feel tense or anxious, since

relaxation and arousal are mutually exclusive. Learning to relax interrupts the cycle of fear and anger. Practice each technique daily for two weeks and then switch to another technique and practice it for two weeks. By the end of the 8-weeks, you will have had sufficient practice with each of the three relaxation and breathing exercises to determine the one that works best for you.

Demonstrate and Practice Progressive Muscle Relaxation (Craske, Barlow, & O'leary, 1992; DiTomasso, 2000)

During this exercise it is important to focus on the sensations of the muscles when they tense and release. The exercise involves tensing and releasing different muscle groups in a sequence, moving from the arms, to the legs, stomach, chest, shoulders, neck and face. It is important to tense only the muscle group assigned, although some overlap is unavoidable. The goal is for the parts of the body that are not asked to tense to relax or remain neutral. Think only about the sensations you are experiencing in your body during the exercise. If other thoughts wander in, don't fight them, but don't focus on them either. Let them pass through and leave. Try to develop a memory of the sensations involved in relaxation, because the goal is to bring on this state of relaxation whenever you are feeling aroused. Practice this exercise once a day for fifteen minutes for two weeks. Follow the instructions provided below which are taken from Craske, Barlow, and O'leary's (1992) Mastery of Your Anxiety and Worry Client Workbook, pp. 85-87. You may make a tape of these instructions and play it as you do the exercise. Once you become very familiar with the exercise, practice without the tape, so that you may apply these directives at any place or any time.

a) Get into a comfortable position, close your eyes, and sit quietly for a few seconds.

b) Build up the tension in your lower arms by making fists with your hands and pulling up on the wrists. If your nails are long, press your fingers against your palms to make fists. Feel the tension through your lower arms, wrists, fingers, knuckles, and hands. Focus on the tension--notice the sensations of pulling, of discomfort, of tightness. Hold the tension for 10 seconds. Now, release the tension and let your hands and lower arms relax onto the chair or bed with palms facing down. Focus your attention on the sensations of warmth in you hands and arms. Feel the release of tension. Relax the muscles for 20 seconds.

c) Now, build up the tension in your upper arms by pulling the arms back and in towards your sides. Feel the tension in the back of the arms, radiating up into your shoulders and back. Focus on the sensations of tension. Hold the tension for 10 seconds. Now, release the arms and let them relax heavily down. Focus on your upper arms and feel the difference compared to the tension. Your arms feel heavy, warm, and relaxed. Relax for 20 seconds.

d) Now, build up the tension in your lower legs by flexing your feet and pointing your toes toward your upper body. Feel the tension as it spreads through your feet, your ankles, your shins, and your calf muscles. Feel the tension spreading down the back of the leg and into the foot, under the foot, and around the toes. Focus on that part of your body for 10 seconds. Now, release the leg tension. Let your legs relax heavily onto the chair or the bed. Feel the difference in the muscles as they relax. Feel the release from tension, the sense of comfort, the warmth and heaviness of relaxation for 20 seconds.

e) Now build up the tension in your upper legs by pulling your knees together and lifting your legs off the bed or chair. Focus on the tightness through your upper legs. Feel the pulling sensation from your hip down and notice the tension in your legs. Focus on that part of your body for 10 seconds. Now, release the tension, and let your legs drop heavily down onto the chair or the bed. Let the tension disappear. Focus on the feeling of relaxation. Feel the difference in your legs. Focus on the feeling of comfort for 20 seconds.

f) Now, build up the tension in your stomach by pulling your stomach in toward the spine, very tight. Feel the tension. Feel the tightness and focus on that part of your body for 10 seconds. Now let the stomach go--let it go further and further. Feel the sense of warmth circulating across your stomach. Feel the comfort of relaxation, 20 seconds.

g) Now, build up the tension in your chest by taking a deep breath and holding it. Your chest is expanded, and the muscles are stretched around your chest--feel the tension around your front and your back. Hold your breath, 10 seconds. Now, slowly, let the air escape and breathe normally, letting the air flow in and out smoothly and easily. Feel the difference as the muscles relax in comparison to the tension.

h) Moving up to your shoulders, imagine your shoulders are on strings being pulled up toward your ears. Feel the tension around your shoulders, radiating down into your back and up into your neck and the back of your head. Focus on that part of your body. Describe the sensations to yourself. Focus (10 seconds) and then let the shoulders droop down. Let them droop further and further, feeling very relaxed. Feel the sense of relaxation around your neck and shoulders. Focus on the comfort of relaxation for 20 seconds.

i) Build up the tension around your neck by pressing the back of your neck toward the chair or bed and pulling your chin down toward your chest. Feel the tightness around the back of the neck spreading up into your head. Focus on the tension (10 seconds). Now release, letting your head rest heavily against the bed or chair. Nothing is holding it up except for the support behind. Focus on the relaxation for 20 seconds and feel the difference from the tension.

j) Build up the tension around your mouth and jaw and throat by clenching your teeth and forcing the corners of your mouth back into a forced smile. Hold the tension (10 seconds). Feel the tightness and describe the sensations to yourself. And now release the tension, letting your mouth drop open and the muscles around the throat and jaw relax. Focus on the difference in the sensations in that part of your body for 20 seconds.

k) Now build up the tension around your eyes by squeezing your eyes tightly together for a few seconds and releasing. Let the tension disappear from around your eyes. Feel the difference as the muscles relax.

l) Now build up the tension across the lower forehead by frowning, pulling your eyebrows down and toward the center. Feel the tension across your forehead and the top of your head. Focus on the tension for 10 seconds and then release, smoothing out the wrinkles and letting your forehead relax. Feel the difference.

m) Finally, build up the tension across the upper forehead by raising your eyebrows up as high as you can. Feel the wrinkling and the pulling sensations across your forehead and the top of your head. Hold the tension for 10 seconds and then relax, letting your eyebrows rest down and the tension leave. Focus on the sensations of relaxation and feel the difference compared to the tension.

n) Now, your whole body is feeling relaxed and comfortable. Take a moment to release all tension from your body. Now, as you spend a few minutes in this relaxed state, think about your breathing. Breathe. Think the word "relax". Feel comfortable and relaxed.

Finish by evaluating your experience. Were there any parts of your body that were difficult to relax? For very tense areas of your body, it helps to tense and release several times. Were you able to focus your attention? If other thoughts came into your mind, did you let them pass through? Did you feel more relaxed after the exercise?

Sometimes people feel an initial increase in anxiety when attempting to relax. This could be due to the unusual sensations of relaxation or the feeling of letting go. Worrying about relaxing correctly can also lead to an increase in anxiety. With repetition, these feelings will go away, and you will feel the true effects of relaxation.

6. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

The homework involves 1) practicing progressive muscle relaxation three times per week, setting aside one half hour during the day or evening for this exercise. In addition, 2) take blood pressure measures daily at the prescribed time and 3) code the anger record sheets. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior, affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

7. Fill out The Subjective Anxiety Scale (Wolpe, 1973).

Session Number Two

Capsulation

1. Set the Agenda and Review Homework (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week (Meichenbaum, 1996)
3. Review Progressive Muscle Relaxation (Craske, Barlow, & O'leary, 1992; DiTomasso, 2000)
4. An Explanation of Hidden Anger, "Anger-In", and "Anger-Out" (Mann, 1999; Spielberger, 1999)
5. Recognizing The Types of Anger As They Effect Your Behavior
 - A. Label Yourself (Mann, 1999)
 - B. Recognizing Angry Feelings (Bilodeau, 1992)
 - C. Sensations in the Body (Weisinger, 1985)
 - D. Anger Components List (Craske, Barlow, & O'Leary, 1992)
6. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 2000; Meichenbaum, 1994)
7. Fill Out "The Subjective Anxiety Scale (Wolpe, 1973)

1. Set Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. Client agreement and collaboration is important. The client is asked for additional agenda items that are in alignment with the goals of the session.

2. Discuss Anger Events That Occurred During the Week

The client is asked to share anger events that occurred during the week. Triggers are identified as well as the intensity and duration of the event. Differences in the approach to the anger event from behavior in the past may also be identified. New behaviors that are based on positive coping mechanisms are affirmed (Meichenbaum, 1996).

3. Review Progressive Muscle Relaxation (Craske, Barlow, & O'leary; 1992; DiTomasso, 2000)

At the beginning of the session, Progressive Muscle Relaxation will be reviewed and adjustments will be made if necessary (see session number one for directions).

4. An Explanation of Hidden Anger, "Anger-In", and "Anger-Out" (Mann, 1999; Spielberg, 1999)

New theories in the 1970's concerning essential hypertension (EH) reported that individuals who had difficulty identifying and sharing anger were more prone to this disease than people who were able to label and express emotions. Samuel J. Mann, MD (1999), a physician at the Hypertension Center of the New York Hospital, Cornell Medical Center, found a relationship between high blood pressure and hidden anger. He noticed that many patients who came to him with severe EH reported less stress than other people. He determined that patients with high blood pressure were less in touch with feelings and masked their emotions even from themselves. It was common for them to harbor emotions. However, they were not able to feel them and they did not know that the existence of these emotions contributed to their disease.

At times you may intentionally ignore or deny emotions that you would prefer not to feel. For example, if someone you care about hurts your feelings,

you might treat the matter as if it were insignificant in order to remain cordial and retain a good relationship with that person. Other reasons you avoid experiencing feelings have to do with not wanting to rock the boat, desiring to turn the other cheek, choosing to treat others the way you would like to be treated, fear of retaliation, concern about losing face, fear of rejection, and concern about falling apart or "losing it" in the presence of strong emotions.

You may also hide unresolved feelings from the past. Those of you who have experienced war, rape, crime, physical abuse, sexual abuse, and other less violent emotional traumas, learned as children how to block the painful emotions and sensations in order to survive. Now as adults these hidden feelings may be creating havoc for your physiological systems.

Other studies found that the Type A personality is associated with heart disease, describing this personality type as aggressive, controlling, and demanding (Friedman & Rosenman, 1974). Recent studies conclude that anger has a stronger relationship to high blood pressure than other Type A traits, such as time urgency (Deary, Fowkes, Donnan, & Housley, 1994; Julkunen, Idanpaan-Heikkila, & Saarinen, 1992). Research results conflict about the type of anger that has the most serious consequences for heart disease. Some studies report that people who aggressively express angry feelings (behavior characterized by yelling, losing control, breaking things, and becoming physically violent) are good candidates for EH. Other studies show that people who inhibit, suppress, or hide their hostility are the most likely candidates (Spielberger, 1999). Therefore, these sessions focus upon "anger-in" as well as "anger-out", because many people have both kinds of anger.

Although anger can be protective if one's life is threatened, it is more often used against others who are perceived to be emotionally threatening in order to destroy or abuse them (Beck, 1999). In addition, anger begets anger. Therefore, the more you shout or yell at someone, the more you invite that person to respond in a like manner. Anger may become a viscous circle that ends in violence or destruction. Also, people who are the most prone to vent their rage, get angrier, not less angry (Ellis, 1977). Aggression when it is directed against another human being is not cathartic; instead it produces more arousal. The following factors having to do with anger will be emphasized in our sessions together (McKay, Rogers, & McKay, 1989, p. 2).

- a. An ability to control the venting of destructive anger.
- b. A reduction in the frequency and intensity of physiological, "fight or flight" responses to frustration or stress.
- c. A change in the beliefs, assumptions, thoughts, and attitudes that trigger angry and hostile responses.
- d. Identification of the needs and feelings that lurk beneath your anger, that remain invisible and unheeded, and the ability to share them.
- e. Anger coping mechanisms, such as skills training in assertiveness, the communication of strong emotion, relaxation, and problem solving.

5. Recognizing the Different Types of Anger

A. Label Yourself (Mann, 1999)

Mann (1999) provides several categories of people who hide or inhibit their feelings or are unaware of their existence. **Directions:** In this exercise called Label Yourself place a check mark beside one or more of the categories of hidden anger that describe you.

- Mr./Mrs./Ms. Nice _____
- Even Keeled _____
- self-reliant _____
- Emotionally Unavailable _____
- Model Citizen _____
- In-Control _____
- Workaholic _____
- Superman/Superwoman _____
- Secretly Fantasizes Revenge _____
- Secretly Judges or Criticizes _____
- Rehearses Anger/Does Not Express It _____
- Escape Artist _____

In addition, indicate if you fall into any of the following categories.

- a) at one time you experienced an emotional trauma that you thought was resolved or behind you _____
- b) you have a tendency to deny, repress, or hide unwanted emotions, _____
- c) you have experienced emotional isolation _____
- d) you have experienced child abuse or severe family dysfunction _____

B. Recognizing Angry Feelings (Bilodeau, 1992)

The following exercise, Recognizing Angry Feelings, emphasizes a recognition of angry feelings that can occur in either the “anger-in” (withheld anger), “anger-out” (impulsive and aggressive anger), or hidden (unaware of anger) state.

Now that you understand that conscious awareness and management of anger is necessary for physical health, this exercise helps you recognize various forms of angry feelings.

Directions: a) Circle the types of anger named in the following list that you have experienced. b) Within the circle, write the letter that best describes your behavior in reference to the circled emotion. Use "H" for "hide", that is you tend to hide the anger from yourself [you don't know you have it]; "W" for "withhold" [you know you feel it, but chose not to express it]; and "E" for "express", that is you express in an aggressive manner. c) Then use each of the feelings circled in a sentence that describes your emotional behavior.

- | | | | |
|-----------|--------------|-------------|--------------|
| angry | ambitious | annoyed | anxious |
| hateful | belligerent | bitter | bold |
| resentful | controlled | envious | cranky |
| cynical | hostile | vengeful | domineering |
| raging | fearful | violent | critical |
| grief | guilty | greedy | helplessness |
| hopeless | lonely | irritable | jealous |
| nervous | overburdened | quarrelsome | worried |
| rejecting | judgmental | sad | rigid |
| ferocious | vicious | manly | strong |

c) Angry feeling sentences. **Directions:** Write a sentence that describes your behavior using each of the words you circled in the above list. Example: "When I feel nervous, I hide it by starting an argument with someone."

C. Sensations in the Body (Weisinger, 1985, pp. 54-55)

In order to know when your body is tense or relaxed, you need to be aware of what it feels like in both conditions. You can learn to do this by developing a conscious awareness of sensations in your body. If you ignore your body, you will not have indications of when it is well versus when it is ill. In general, people don't listen to their bodies. The best way to know your body is to develop a sensitivity to your different physical states, such as arousal (fear or excitement), pleasure, and calmness. As you become better at noticing your physical state, you will learn when your body is relaxed and when it is negatively aroused.

Directions: Stand up and place your feet about a foot apart. Be aware of your feet on the ground. Place all of your weight on your feet. Let your arms hang relaxed at your sides. I will name a part of your body. You are to respond outloud with a word or phrase that describes the sensation in the part of the body I have just named. You may use an adjective or a phrase to describe the sensation. Example: Forehead/ "cold", "hard", "thinking." The body parts named include:

- | | | | |
|-------|-----------|------------|------------|
| Head | Forehead | Jaw | Eyes |
| Neck | Shoulders | Upper Back | Arms |
| Hands | Chest | Abdomen | Lower Back |
| Legs | Feet | Pelvis | Diaphragm |
| Knees | Elbows | | |

D. Anger Components List (Craske, Barlow, & O’Leary, 1992)

You need to acknowledge the physical symptoms, thoughts, images, and behaviors that you experience when you are angry. Create an Anger Components List. Think about your typical reactions and list them. For example, for symptoms, Joe, an executive for a major US company, writes that he is aware of burning sensations in his belly, sweating, and muscle tension. His thoughts revolve around revenge and images of getting back at the person who hurt him. At home with his family, on a behavioral level, he becomes loud and noisy, shouting, slamming doors, and waving fists. At work, he manages to suppress these reactions. Now, it is your turn.

Directions: Record your anger symptoms, thoughts and behaviors on the Anger Components List which follows.

Anger Components List

Major physical symptoms

Major thoughts/images

Major behaviors

6. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

The homework involves practicing the progressive muscle relaxation three times per week, setting aside one half hour during the day or evening for this exercise. In addition blood pressure measures will be taken daily at the prescribed time and the anger record will be coded. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior, affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

7. Fill out the Subjective Anxiety Scale (Wolpe, 1973).**Session Number Three****Capsulation**

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week (Meichenbaum, 1996)
3. Teach and Practice Staccato Breathing (Pierrakos, 1989; Wilner, 1999)

4. Explain How Cognitions Trigger Anger and EH (Beck, 1979; Ellis, 1977)
5. Sequence of Anger Components for a Recent Anger Episode (Craske, Barlow, & O'Leary, 1992)
6. Teaching Assertiveness (McKay, Rogers, & McKay, 1989)
7. Role-Play an Anger Event Using Assertiveness Skills (McKay, Rogers, & McKay; Meichenbaum, 1996)
8. Anger Exposure Exercise, Using Visualization
9. Assign Homework and Review Self-monitoring (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. Client agreement and collaboration is important. The client is asked for additional agenda items that are in alignment with the goals of the session.

2. Discuss Anger Events That Occurred During the Week

The client is asked to share anger events that occurred during the week. Triggers are identified as well as the intensity and duration of the event. Differences in the approach to the anger event from behavior in the past may also be identified. New behaviors that are based on positive coping mechanisms are affirmed (Meichenbaum, 1996).

3. Teach and Practice Staccato Breathing (Pierrakos, 1989; Wilner, 1999)

Staccato breathing (Wilner, 1999) is a technique designed specifically to release tension from all the segments of the body, particularly the chest, back, diaphragm, abdomen and pelvis. Utilized in the morning, it enhances the

breathing and facilitates a flow of energy, releasing physical contractions that have developed during sleep. Because synapses release neurotransmitters during sleep, a person may awake in the morning with many toxins in the blood stream that could upset one's equilibrium. Staccato breathing corrects these deficiencies by bringing oxygen to the organs of the body.

Staccato breathing mimics the biological rhythm of all living creatures in the universe. Movement in the human body is based on biological pulsation that involves expansion and contraction (Pierrakos, 1989). Many people seem to have lost the ability to engage in this pulsatory movement. Pulsatory mechanisms, that occur continuously within the body when they have not been blocked by early traumatic experiences, can be recaptured through the practice of staccato breathing.

There are three stages to the breathing: expansion, the active phase; contraction, the receptive phase; and pause, the relaxation phase.

Directions: This breathing should not be done automatically or in a mechanical way. Experience your physical sensations and establish a conscious awareness of your body and your emotional state as you inhale and exhale. This technique should be used ten minutes per day, preferably in the morning. We will practice it together in this session so that you will have confidence that you are doing it correctly when you are at home.

a) The active phase begins the breathing. Start by lying down flat on a couch, mat or carpet with feet flat on the floor, knees bent, and eyes closed. Breathe in short sniffs through the nose with your mouth closed to the count of five: One. Two. Three. Four. Five.

b) As you inhale, arch your back, feeling the stretch of your backbone. Stick your chest out and press your shoulders into the floor, thrusting the pelvis back into the floor at the same time. This position curves the backbone and creates a space between the back and the floor. In this position, hold the breath for approximately 3 seconds before exhaling.

c) In the second phase, the exhalation, you contract. Exhale through the mouth, vocalizing the sound "uuuhhh" softly, letting go of the depleted, used-up air. At the same time, round your shoulders forward, in toward your heart, and tip the lower part of your pelvis up, about an inch off of the floor. Tighten your body. In this position, the back flattens onto the floor and the head either remains resting on the floor or lifts slightly when the shoulders curve forward and inward.

d) Following the contraction stage, relax for a few seconds before beginning the next breath. Let your belly soften. Then start to breathe again. Inhale, one, two, three.... "

4. Explain How Cognitions Trigger Anger and High Blood Pressure (Beck, 1979; Ellis, 1977)

Although anger and fear result from a sympathetic nervous system response, physical arousal by itself is not enough to account for the angry reactions that have been observed among people with high blood pressure. Your thoughts are equally important, especially the interpretations you make about the event or situation that disturbed or upset you. With anger, a situation occurs and your thoughts about that situation start the anger ball rolling. In other words, physiological arousal occurs only after thoughts trigger the anger. If you are waiting in line to buy tickets at a movie theater and you tell yourself you will

most probably miss the beginning of the movie because the cashier is too slow, your criticism of the cashier may trigger your anger. The thought “starts the ball rolling”.

The mind can be a primary cause of the anger that you hold in and do not express and the anger that you let out toward other people. When your mind thinks that you are going to be harmed or injured, and when it experiences a threat to your safety, self-esteem, or financial security, it triggers an angry response. People who experience the most anger are those concerned about becoming the recipients of injustice. They are perfectionistic, holding the view that there is a right way to do things. They are responsible, needing to be in an authoritative role or power position. They are also controlling, displaying a need to apply rules, procedures, and limits to others' behavior (McKay, Rogers, & McKay, 1989).

5. Sequence of Anger Components for a Recent Anger Episode (Craske, Barlow, & O'Leary, 1992)

Describe one of your most recent anger episodes. Be as specific as possible, explaining who, what, where, when, and how. Include the details. Explore the exact sequence of events that occurred. By looking at the sequence of steps that triggers your anger, you will begin to understand your reaction.

Directions: With the therapist, fill in the Sequence of Anger Component Form for a Recent Anger Episode (Craske, Barlow, & O'Leary) including what triggered it, your physical symptoms, thoughts, behaviors, and feelings.

Sequence of Anger Components for a Recent Anger Episode

Trigger

Physical Symptoms

Thoughts

Behavior

Feelings**6. Teaching Assertiveness (McKay, Rogers, & McKay, 1989)**

Assertiveness involves expressing feelings and thoughts in a manner that protects your rights without violating other people's rights. Assertiveness training offers a positive method for dealing with a problematic situation that could result in anger and pain. When you practice assertiveness, you do not blame or judge another, but instead frame your reaction in terms of your own needs. For example, if you are angry with your partner for not participating in the housework, you would not say "you are a selfish slob," a judgmental statement that could escalate into a fight. Instead you would say, "I need your help with household chores. I need you to clean the kitchen".

Asking for what you need is a positive coping behavior. To express your needs is not a sign of weakness. Instead it is a sign of honest and direct communications behavior. Assertiveness means that people ask for what they need. This clarity leads to workable compromises and fewer arguments.

In order to be assertive, make a statement that contains three parts: facts, feelings, and needs (McKay, Rogers, & McKay). The first part states the obvious, the facts. "You were an hour late." The second part adds the feelings. "You were an hour late and I am angry that you did not keep your time commitment." The third part states the need in a specific and clear manner. "You were an hour late and I am angry that you did not keep your time commitment; therefore, I want you to apologize and I want you to be on time tomorrow."

7. Role-Play an Anger Event Using Assertiveness Skills (McKay, Rogers, & McKay; Meichenbaum, 1996)

Directions: Ask the client to share a recent event that triggered his anger. Have him describe the event in detail, including how he reacted to the event. Have him discuss how he would have preferred to react to the event. Role-play the event with the therapist taking the part of the person or situation that triggered him. Have the client react using assertiveness skills, stating the facts as he understood them, his feelings, and what he needs in the situation. Switch roles and have the client become the triggering person or situation. The therapist takes the role of the client and models positive assertiveness skills that could be utilized in this situation. Switch roles again and have the client practice healthy assertive behaviors a few more times.

8. Anger Exposure Exercise, Using Visualization. (Craske, Barlow & O'Leary, 1992)

In this exercise, the client is to describe a significant and strong emotional experience that happened to him in the past, perhaps decades ago, that he believed he had resolved, or that he thought was too difficult or painful to deal with at the time. The experience caused a great amount of pain, anger, resentment, discomfort, or rage. By providing the client with an exposure to this experience, the negative consequences that result from avoiding these feelings (such as high blood pressure) will decrease (Craske, Barlow & O'Leary, 1992). The subject must repeat this exercise until he no longer experiences anger.

Directions: Concentrate on all the specific details of this experience including every feeling that occurs during it and the nonverbal components of anger that are displayed, such as tone of voice, facial expression, hand gestures, and eye contact. Experience the feelings and the nonverbal cues in their most intense state until the following occurs: "Anger-out" patients, you no longer feel like responding with anger, accusations, rage, or violence; "anger-in" patients, you can talk about your angry feelings in regard to this incident in a rational manner with someone else. Repeat this exercise until you no longer experience anger or distress. The "anger-out" subject does not feel a need to react in anger. The "anger-in" person is willing and able to talk about his experience of anger and can do this in a rational manner.

Begin by re-experiencing and visualizing the difficult or traumatic experience in detail. It may be an experience you had as a child or as an adult. Be as specific as possible and do not leave out any of the negative details or thoughts, including any nonverbal behavior that occurred. Remember the body postures,

voices, facial expressions, and hand gestures in exaggerated detail. Put yourself in the situation as if you were really there again. You are not an objective observer. It is happening to you. Use all of your senses. Smell, hear, and see all that is occurring. Do not avoid any aspect of the image as avoidance will defeat the exercise.

As you visualize the situation, sit comfortably with your eyes closed, legs and arms uncrossed. Bring the situation to the fore of your mind; see it in your mind's eye. How clear is the image on a scale from 0-8, where 0 is not able to have an image and 8 is a vividly clear image. What is the strength of your feelings, with 0 meaning no feeling and 8 meaning intense feeling. Try to make the experience even more vivid and the feelings even more intense. Keep the experience in your head, bringing it into the present, as if it were happening now, even though you recognize that it occurred in the past.

For "anger-out" patients, allow yourself to feel emotion, but if you have an impulse to react violently or aggressively, see if you can hold yourself back. Be aware of how you behaved in the past and change your behavior in this scenario. Repeat this scene until you feel no anger or distress whatsoever.

For "anger-in" patients, tell yourself that you never have to hide or avoid these feelings again. You are not raging internally or feeling inner distress. Imagine rationally sharing these feelings with someone: a friend, a spouse, a spiritual advisor, a therapist, or a physician. Remember that when you first expose hidden or withheld feelings, it is common to feel shame immediately preceding sharing the feeling. Accept the shame and continue on with the assignment of sharing the feelings.

9. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

Practice staccato breathing three times a week for 15 minutes. Try it in the morning as a way to start the day. In addition, continue to monitor your blood pressure daily and to fill out the anger record daily. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior, affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Session Number Four

Capsulation

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week (Meichenbaum, 1996)
3. Review Staccato Breathing and Make Adjustments (Pierrakos, 1989; Wilner, 1999)
4. Teach Four Cognitive Errors: Overestimation, Catastrophizing, Shoulds and Oughts, and Blame (Craske, Barlow, & O'Leary, 1992; McKay, Rogers, & McKay, 1989)
5. An Overestimation Exercise (Craske, Barlow, & O'Leary, 1992)
6. A Decatastrophizing Exercise (Craske, Barlow, & O'Leary, 1992)
7. A Should/Ought to Exercise (McKay, Rogers, & McKay, 1989)
8. Blame, Anger, Truth Exercise (Pierrakos, 1987)
9. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. Client agreement and collaboration is important. The client is asked for additional agenda items that are in alignment with the goals for the session.

2. Discuss Anger Events That Occurred During the Week

The client is asked to share anger events that occurred during the week. Triggers are identified as well as the intensity and duration of the event. Differences in the approach to the anger event from behavior in the past are identified. New behaviors that are based on positive coping mechanisms are affirmed (Meichenbaum, 1996).

3. Review Staccato Breathing and Make Adjustments (Pierrakos, 1989; Wilner, 1999)

At the beginning of the session, Staccato Breathing will be reviewed and adjustments will be made if necessary [see session number three for directions] (Pierrakos, 1989; Wilner, 1999)

4. Teach Four Cognitive Errors: Overestimation, Catastrophizing, Shoulds and Oughts, and Blame (McKay, Rogers, & McKay, 1989)

Cognitive errors tend to occur when people are angry or fearful. Those who suffer from anger tend to overestimate the possibility of being the victim of injustice. In addition, they tend to view the consequences of any unfair or unjust event directed at them as catastrophic and expect the worst possible consequences to impinge on their lives. At other times, when a negative event occurs, they say to themselves that something else “should” have happened, or

they “blame” someone other than themselves for its occurrence. Cognitive errors, such as these, trigger the sympathetic nervous system to respond with anger.

a) Overestimation

Overestimation is when you jump to a conclusion about a particular event and believe it will happen, even though the actual odds of it happening are quite low. For example, if a person reserves a certain table at a restaurant and then begins to worry that the maitre’d will give the table to another party, that person’s anger is the result of overestimation. He has no evidence that the table will be given to another party, and, in fact, if he is a frequent customer at that restaurant, he would have evidence of the owner’s loyalty to him. If you overestimate, you are making the judgment that something negative has a higher probability of occurring in your life than it does on the basis of statistics or mathematical reasoning. To reach this conclusion you are overlooking certain facts. Instead of overestimating, you should ask yourself what are the real odds of a negative situation or event occurring. You need to be objective and you need to review the evidence.

b) Catastrophizing

Some of the negative images and thoughts that you hold when you are angry are so powerful that you blow certain events and situations out of proportion. You distort the information you do have and you do not consider more realistic information. Catastrophizing involves imagining the worst outcome, assuming that it will occur, and recognizing that although unpleasant, it is usually both manageable and time-limited. If it does occur, you can cope with it. In addition, it will not last forever. It is important to deal with thoughts of injustice and inequality from a sense of calmness.

c) Shoulds, Oughts, and Blaming (McKay, Rogers, & McKay, 1989)

Certain inflexible and unchanging thoughts can facilitate disease processes. McKay, Rogers, and McKay (1989) help people learn to control the kinds of thoughts that trigger anger, such as those that involve "shoulds," "oughts," and "blame". When an event happens and you say to yourself that something else "should" have happened, or if you use "blame" suggesting that it was someone else's fault, you are triggering your sympathetic nervous system to respond with anger. Shortly after the thought, you will be feeling annoyed, hostile, or angry, depending on the strength of the perceived injury.

An example of a "should" is: "You should not ride your bike in the yard". An example of blame is: "You ruined the grass we planted last week, you stupid boy." With blame you seem to assume the other did it to deliberately harm or annoy you. The implication of "should" is that the person has acted in a less than reasonable fashion and has done something that is unacceptable and even "stupid". The other is perceived as bad or wrong and you are perceived as a victim.

When you demand that people behave according to your rules, your "shoulds," your "oughts," and your judgments of right and wrong, you are violating reality. Not everyone shares your beliefs and values. People have alternative views of what is right and wrong, and it is futile to try to convince them that they are wrong. They are viewing the situation from another perspective and, in most cases they believe that they have handled the situation correctly or did the best they could considering their perception of the circumstances.

5. Overestimation Exercise (Craske, Barlow, & O’Leary, 1992)

In the overestimating exercise below (Craske, Barlow, & O’Leary, 1992, p. 73), you will mark the place on the scale that indicates the probability of a negative event happening. The scale moves from 0, the lowest point, to 100, the highest point. The “0” equals no probability of a negative event happening and the “100” is the complete probability of the negative event happening, given the evidence.

Directions: First, list a typical event in your life that produces anger and second, give the probability that it will actually happen as you imagine. Then list the objective evidence that actually predicts or proves that this negative event will or will not occur. Finally give the realistic probability of the event occurring.

Overestimation Scale

Anger Inducing Event	Anger probability (0-100)	Objective Evidence	Realistic probability (0-100)

A cognitive restructuring procedure used with overestimation involves evidence-based questions (Meichenbaum, 1996). Your prediction of what is about to occur is viewed as a “hypothesis worthy of testing” rather than as a fact. You are encouraged to collect additional evidence.

6. Decatastrophizing Exercise (Craske, Barlow, & O’Leary, 1992)

For each episode of anger, you must question your assumptions; what makes you believe that a catastrophe is occurring? **Directions:** Use the decatastrophizing scale to consider alternatives to painting a life situation as a catastrophe. First write down an anger inducing situation that is meaningful in your life. Then on a scale of 0 to 100, with 0 meaning total inability to cope and 100 meaning complete coping, rate your ability to cope with the situation that produced your anger. In the next column, list some possible ways of coping with the situation in which you castastrophized, and then, in the last column, rank you realistic ability to cope with that same situation.

Decatastrophizing Scale

Anger inducing thought	Ability to cope (0-100)	Ways of coping	Realistic ability to cope (0-100)

A cognitive restructuring procedure that can be used with catastrophizing involves implication-based questions (Meichenbaum, 1996). You decide whether your initial belief, even if true, implies everything that you thought it would imply. For example: “If that were true, why would it be so upsetting?”

7. “Should”/“Ought to” Exercise (McKay, Rogers, & McKay, 1989)

Empathy: Standing in Someone Else’s Shoes

Directions: Pick one person whose behavior has irritated or annoyed you recently and answer these four questions about the person. Use this exercise in your life when you start to apply the words "should" or "ought" to someone else's behavior.

1. What needs did this person have that influenced him or her to act that way?
2. What beliefs did this person have that influenced him or her to act that way?
3. What aspects of his or her life history influenced the behavior?
4. What personal limitations does this person have (fears, lack of skills, etc.) that influenced his or her behavior.

If you do not have enough information to answer the questions, make up something that seems likely. The purpose of this exercise is to explain behavior that you do not like or think is wrong from the point of view of the other person. A cognitive restructuring procedure that serves the same purpose is called alternative-based questions (Meichenbaum, 1996). Alternative-based questions ask if there are possible alternative explanations for a person's actions.

8 The "Blame, Anger, Truth Exercise" (Pierrakos, 1987)

Directions: Think of someone you have recently blamed, criticized, or judged. Do this exercise with that person in mind (Pierrakos, 1987, 1996).

1. Place three pillows in a row, labeling one blame, one anger, and one truth.
2. Begin by sitting on the blame pillow and imagining the person you are angry with in front of you. Make as many blaming or judgmental statements as you can about that person. Say them out loud looking at that person in your mind's eye. Recognize that this part of your personality hides your anger by using blaming statements and judgments.

3. Now move to the anger pillow. Sit on this pillow and tell the person you envision that you are angry at him or her. You must state your anger directly. If you start blaming, you must move back to the blame pillow. Say directly: I am angry at you. As you say it, allow yourself to feel the anger in your body.

4. When your anger feels genuine and it lacks the blame component, move to pillow number three, the truth. Face this person who you envision again and speak to him/her from your heart. Tell the person your the positive feelings you have about him/her, when you are not guided by your anger or your negative judgments.

9. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

Practice staccato breathing three times per week for fifteen minutes. Try it in the morning as a way to start the day. In addition, continue to monitor your blood pressure daily and to fill out the anger record daily. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior, affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Session Number Five

Capsulation

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week (Meichenbaum, 1996)
3. Teach the Meditation Exercise (Benson, 1993; McKay, Rogers, & McKay, 1989)

4. Discuss The Role of Irrational Beliefs in Hypertension (Craske, Barlow, & O'Leary, 1992; McKay, Rogers, & McKay, 1989))
5. Review Irrational Beliefs that Trigger Anger (McKay, Rogers, & McKay, 1989)
6. Learn Coping Statements to be Used with Irrational Beliefs (McKay, Rogers, & McKay, 1989)
7. Learn a Nonconfrontational Way to Express Negativity (McKay, Rogers, & McKay, 1989; Weisinger, 1985)
8. Experience an Anger Exposure Exercise With the Therapist in the Role of the Trigger
9. Assign Homework and Review Self-monitoring (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. The client's agreement and collaboration is important. The client is asked for additional agenda items that are in alignment with the goals of the session.

2. Discuss Anger Events That Occurred During the Week

The client is asked to share anger events that occurred during the week. Triggers are identified as well as the intensity and duration of the event. Differences in the approach to the anger event from behavior in the past are identified. New behaviors that are based on positive coping mechanisms are affirmed (Meichenbaum, 1996).

3. Teach the Meditation Exercise (Benson, 1993; McKay, Rogers, & McKay, 1989)

Directions: To meditate find a quiet, peaceful place in your home. Put yourself in a comfortable sitting position (Benson, 1993; McKay, Rogers, & McKay, 1989, p. 109). It may help to dim the lights or light a candle. The key to meditation is to focus.

a) Sit comfortably in a quiet place and center yourself. Close your eyes.

b) Become aware of your breathing. Your breathing is your main focus. Allow yourself to breath naturally. Do not change your breath; just observe it.

c) On the in-breath say the word "in" and on the out-breath say the word "out". Continue this breathing labeling your breaths for a few minutes.

d) If a thought passes through your mind, do not dwell on it. Let it pass through and then let it go immediately. The focus is your breathing.

e) Continue to observe your breath, but change the words. On the in-breath say "love", breathing in the love around you. On the out-breath say "fear" or "anger", to let go of whatever negativity you carry within you.

Do the meditation once daily for at least ten minutes. If it is difficult for you to focus, start out by meditating for a shorter time period, such as 5 minutes.

Meditation is a wonderful way to begin or end a day. Eventually you may choose to meditate in one or two 15 or 20 minute sessions per day.

4. Discuss The Role of Irrational Beliefs in Hypertension (Craske, Barlow, & O'Leary, 1992; McKay, Rogers, & McKay, 1989)

People have many beliefs (McKay, Rogers, & McKay) that they use to guide their lives. Some of these beliefs are irrational. They may have learned them when they were children and guided more by emotion than reason. They may have been passed down through the family, maintaining power due to their

historical significance in the family and their maintenance of family ties.

Research shows that your irrational beliefs trigger physiological arousal and feelings, such as anxiety and anger, that are associated with high blood pressure. Therefore, it would help if you replaced old, dysfunctional beliefs with new, healthier ones.

Your mind, your thought processes, and your belief systems can be used to decrease or increase your anger, that is to control your anger or send you over the edge. According to Craske, Barlow, and O'leary (1992), "a complex interaction exists between physical factors, thoughts or cognitive factors, and life experiences." For those who are diagnosed with hypertension, belief systems such as the world is "a dangerous and threatening place" are common. In response to this negative view of life, the person develops or maintains irrational thoughts that tell him or her to remain in control and to take responsibility for everything that happens. It is necessary to actively challenge these irrational beliefs in order to develop more realistic ones.

5. Irrational Beliefs that Trigger Anger (McKay, Rogers, & McKay, 1989, pp. 88-99)

- a) The Entitlement Belief: The belief that because one wants something very much, he/she should have it. The thought is that the degree of need justifies the expectation that someone else fill it.
- b) The Fairness Belief: The belief that there are absolute standards of fair behavior, known by all, that occur in daily life. This belief encourages people in relationships to act as if they are keeping entries in a balance book.
- c) The Change Belief: This belief suggests that a person can change another's behavior or control it by applying pressure. Criticism is used to force others to

change. Criticism does not work, because people change only if they want to and if the change is affirmed in a positive manner.

d) The Shouting Belief: The belief that people who hurt you or cause you pain of any sort should be punished by shouting at them. A loud, aggressive form of anger is used as a kind of revenge. The person who has wronged you deserves every bit of anger you can unleash toward him or her.

e) Conditional Beliefs: Conditional beliefs take the form of "if/then" sentences that do not hold up in reality. Examples include: "If you love me, you will fix things in the house" and "If you were my friend, you would help me".

f) Dichotomous Beliefs: People see the world in terms of extremes, such as good and bad, black and white, or right and wrong. Viewing situations in terms of extremes leads to misunderstandings and distortions of the facts, since behavior is based on a continuum and cannot be interpreted as all good or all bad.

g) The Mind-Reading Belief: People believe they know the exact intent of others without having investigated the situation. They make inferences that trigger their anger by assuming that they know for a fact that the person acted maliciously or inappropriately in order to hurt them.

h) The Magnifying Glass Belief: The belief is that the situation is worse than it is in reality. Words, such as "terrible," "awful," "horrendous," and "disgusting" are used to exaggerate a phenomenon. Time is distorted with words such as "always" and "never". Number is exaggerated by the use of "all" or "none".

6. Coping Statements to be Used with Irrational Beliefs (McKay, Rogers, & McKay, 1989, pp. 148-151)

Coping statements are sentences that you say to yourself when you are involved in situations that can lead to excessive physiological arousal, feelings of

anger, and irrational thought processes or belief systems. These sentences reinforce positive coping mechanisms that help you deal with difficult situations. Write down the coping statements you like on index cards and carry them with you in your wallet. Look at them during the day and use them as reminders. You can make up your own sentences as well and add them to this list.

"This may upset me, but I know how to deal with it."

"I can find a way to say what I want without getting angry"

"I am responsible for what happens to me."

"I am responsible for taking care of my own needs."

"I can't expect people to act the way I want them to."

"I am free to want, but the other is free to say no."

"Others are not obliged to meet my interests."

"Others needs are as important as my needs."

"We can negotiate to make this a win/ win situation for both of us."

"People change only when they want to, not because I want them to."

"When someone disappoints me, it does not mean he/she does not care."

"Aggression and cruelty will not get me what I want."

"People do the best they can even if their behavior does not meet my expectations."

"I will not assume that I know why that person acted that way."

"I need to take a deep breath and relax."

7. Learn a Nonconfrontational Way to Express Negativity (McKay, Rogers, & McKay; Weisinger, 1985)

In a nonconfrontational way to express anger, people are taught to emphasize the person's behavior without resorting to "namecalling". The pattern for the

“anger” sentence is: “When you do X, I feel Y, because of Z.” An example is:

“When you talk on and on without giving me a chance to respond, I feel angry at you, because I don’t believe you are interested in my point of view.

Directions: Take several incidents that happened this week that irritated or angered you and reframe your response to them using the above sentence pattern. The therapist takes the role of the recipient of the communication and the client the role of the annoyed person.

8. Experience an Anger Exposure Exercise With the Therapist in the Role of the Trigger (Craske, Barlow, & O’Leary, 1992)

In this exercise, the client describes a strong anger experience that happened to him in the last few months that involved a work situation, a significant other, or a social situation. The experience caused a great amount of anger, resentment, discomfort, or

rage for the client. The goal of this exercise is to provide the client with an exposure to this experience with the therapist taking the part of the triggering individual (Craske, Barlow & O’Leary, 1992; Meichenbaum, 1996).

Directions: The client is told to describe the specific details of this experience including every feeling that occurred. The client is asked to provide enough specific information about the triggering person, including what he/she said and did, that the therapist may take on the role, even to the point of exaggeration. The client is asked to provide all of the negative details, including a description of nonverbal clues and his negative thoughts during the episode. He is asked to place himself back in the situation as if he were really there again.

In the exposure, the therapist takes the triggering person’s role, trying to make the experience even more vivid and the feelings even more intense. The situation

is treated as if it were happening in the present. The goal is to repeat it until “anger-out” patients no longer feel like responding with anger, accusations, rage, or violence and “anger-in” patients can share their angry feelings in an open but rational way.

“Anger-out” patients are told to allow themselves to feel the emotion, but if they have an impulse to react violently or aggressively, to hold back and control themselves. “Anger-in” patients are told that they never have to hide or avoid these feelings. They are asked to share these feelings in a nonconfrontational way.

9. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

Practice meditation three times per week for fifteen minutes. Try it in the morning as a way to start the day or in the evening as a way to relax. In addition, continue to monitor your blood pressure daily and to fill out the anger record daily. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior, affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Session Number Six

Capsulation

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week (Meichenbaum, 1996)
3. Review the Meditation Exercise and Make Adjustments [see session number 5] (Benson, 1993; McKay, Rogers, & McKay, 1989)

4. Graded Anger Exposure Role-Play Exercises, From Stressful to Extremely Stressful, Using Therapist as Trigger (Meichenbaum, 1996)
5. Client Pretends to Coach Someone with a Similar Problem (Meichenbaum, 1996)
6. Assign Homework and Review Self-Monitoring (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
7. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. The client's agreement and collaboration is important. The client is asked for additional agenda items that are aligned to the goals for the session.

2. Discuss Anger Events That Occurred During the Week

The client is asked to share anger events that occurred during the week. Triggers are identified as well as the intensity and duration of the event. Differences in the approach to the anger event from behavior in the past are identified. New behaviors that are based on positive coping mechanisms are affirmed (Meichenbaum, 1996).

3. Review the Meditation Exercise and Make Adjustments (Benson, 1993; McKay, Rogers, & McKay, 1989)

At the beginning of the session, meditation will be reviewed and adjustments will be made if necessary [see session number five for directions] (Benson; McKay, Rogers, & McKay)

4. Graded Anger Exposure Role-Play Exercises, From Stressful to Extremely Stressful, Using the Therapist as Trigger (Meichenbaum, 1996)

Exposure to anger producing situations helps people habituate to them. When people deal with a situation directly, without avoiding it, and when they have to deal with it over and over again, they learn to control their emotions in response to that situation.

A graded exposure role-play exercise helps you tolerate the sensation and feeling of anger. Repeated and prolonged exposure to the anger evoking situation diminishes the intense emotional response that is capable of creating health problems and interpersonal difficulties. You will find that your fear and resentment toward the situation is reduced with practice and that you learn to tolerate the experience of anger or discomfort within your body.

In this exposure exercise, the therapist plays the role of the triggering individual or situation. A graded exposure is used to foster “in vivo” responding. The exercise involves a role-play exposure to an anger producing event along with response prevention (“anger-out”) or response expression (“anger-in”).

Directions: You will engage in an anger role-play with your therapist. Use a common triggering event or situation in your life. It could be an interchange with your spouse, adult child, employee, or boss. Discuss the situation in detail with your therapist, specifically referring to the tones of voice, the gestures, the body postures, the verbal content, and the environment. Answer any questions the therapist may have about her role. It is not necessary that she be the same gender as the person who created the problem for you. The gestures, tone of voice, and exact wording are enough to engender the original feelings and incite anger.

Start the role play at a point prior to the arousing incident, so that the interaction can develop as it did in reality. Observe how the situation escalates and how an anger chain begins. During the role-play your therapist will make threats or express angry, ego-damaging, and judgmental statements about you in order to represent the triggering person. She will try to provoke you in order to help you with anger-management.

Response prevention is emphasized in the exposure exercises, for the "anger-out" person, in order to break the association between overly expressive anger and the situation that triggers it. As the "anger-out" person experiences the situation, hears the provocation, sees the gestures and physical posturing, he should try to calm down, using relaxation directives, breathing, and cognitive coping skills. He should look directly at the person who is provoking him or taunting him, without taking any action or making any negative comment in response. He should continue to breathe and relax. No response to the provocation is permitted. Bilodeau (1992) suggests that to interrupt an aggressive response, the client should become aware of the point at which his anger builds and say to "stop" to himself.

Response expression is emphasized in the exposure exercises, for the "anger-in" person, in order to break the association between hidden or inhibited hostility and the situation that triggers it. The client is told that when is aware that the anger is beginning to build, he needs to send himself a signal that it is time to share it in a noncontroversial manner. The client is directed to experience the situation, hear the provocation, see the gestures and physical posturing, try to calm down using relaxation directives, breathing, and cognitive coping skills that he has learned and practiced. He should look directly at the person who is

provoking him and respond in a way that is factual without escalating the situation.

The scene is repeated several times. Each time it is prolonged and the triggering verbiage and behaviors are intensified (Meichenbaum, 1996). The final role play exposure may last as long as 10 minutes. At the end of the exposure session, the therapist should provide feedback about her feelings in the role and her perception of your ability to relax, maintain control, and respond appropriately under stressful circumstances. Give yourself feedback as well. What did you do well? In what areas is more practice necessary? Remember to congratulate yourself for the courage and strength it takes to face difficult personal situations without an overreaction.

5. The Client Pretends to Coach Someone with a Similar Problem

(Meichenbaum, 1996)

Envision a person, similar to yourself, who has difficulties with anger. The person is either "anger-out", overly expressive, impulsive, and aggressive, or "anger-in", experiences anger, revenge, and retribution fantasies but keeps them hidden within himself. Imagine you are this person's therapist or coach. What kind of advise would you give him? How would you help him manage his anger?

6. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

Continue to practice meditation three times per week. Continue to measure your blood pressure and fill out the anger record daily. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior,

affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

7. Fill Out "The Subjective Anxiety Scale" (Wolpe, 1973)

Session Number Seven

(Sessions number seven and eight emphasize review and closure)

Capsulation

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week (Meichenbaum, 1996)
3. Review Any Difficulties that Occurred With the Relaxation Exercises (DiTomasso, 2000)
4. Practice Relaxation Exercises In The Session
5. Practice Anger Exposure Exercises -- Goal to Erase All Anger Responses (Weisinger, 1985)
6. Provide Closure To The Therapy Protocol (Meichenbaum, 1996)
 - A. Identify High-Risk Situations
 - B. Rehearse Responses to Anticipated Stressful Situations
 - C. State When, How, Where, and Why He Will Use the Coping Strategies
 - D. Review the Successful and Unsuccessful Efforts at Anger Management
7. Discuss and Implement Relapse Prevention Techniques (Meichenbaum, 1994)
8. Assign Homework and Review Self-monitoring (Dattilio & Freeman; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
9. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. The client's agreement and collaboration is important. The client is asked for additional agenda items that are appropriate to the goals for the session.

2. Discuss Anger Events That Occurred During the Week

The client is asked to share anger events that occurred during the week. Triggers are identified as well as the intensity and duration of the event. Differences in the approach to the anger event from behavior in the past are identified. New behaviors that are based on positive coping mechanisms are affirmed (Meichenbaum, 1996).

3. Review Any Difficulties that Occur With the Relaxation Exercises

(DiTomasso, 2000)

The client is asked which relaxation exercises are difficult and to describe his difficulties and discomfort. Discomfort may stem from difficulties with breathing, the physical position, the situation, or the location. Suggestions to dispel the difficulties are made. Adherence and commitment are also discussed.

4. Practice Relaxation Exercises In The Session

Difficulties in the relaxation exercises are worked on in the session with the therapist present.

5. Practice Anger Exposure Exercise -- Goal to Erase All Anger Responses and Respond Rationally (Weisinger, 1985)

Think of a situation that provokes your anger. Have a vivid picture that includes where you are, who is with you, and all of the sensory stimuli, such as

sounds and smells. Hold on to this image for at least 40 seconds and be aware of any changes in your body. What happens to your heart rate, breathing, and muscle tension as you maintain this image? If you decide these physiological cues are anger, than you will feel angry, but if you decide they are signs of arousal begging you to relax, then you can begin to manage your anger through relaxation. Stay with the provoking scene until you can be relaxed and think about it without experiencing discomfort. Visualize yourself successfully coping with the situation. Make sure you can visualize the provocation scene three times without experiencing arousal before moving on to a new provocation.

6. Provide Closure to the Eight-sessions (Meichenbaum, 1996)

a) Identify and List High-Risk Situations

b) Rehearse Responses to Anticipated Stressful Situations

Which responses will work best in situations that trigger you?

Write your favorite responses on an index card you can carry with you.

c) State When, How, Where, and You Will Use Coping Strategies

When?

How?

Where?

d) Review Successful and Unsuccessful Efforts at Anger Management

List 3 successful coping strategies

List 3 strategies that did not work for you

7. Discuss and Implement Relapse Prevention Techniques

(Meichenbaum, 1994)

The object of relapse prevention is to help you sustain your recovery through

self-management of your anger responses. Relapse prevention skills will help you find ways to cope with emotional stress and physical pain. They will help you continue along a positive path and attain positive rewards in your life.

Suggestions are to:

- a) identify situations and cues that could trigger a relapse
- b) practice behaviors to avoid high risk situations (leaving the situation, implementing diaphragmatic breathing, calling a friend, writing in a journal)
- c) manage lapses
- d) enlist social supports
- e) provide a better balance of pleasurable activities in your life to counterbalance responsibilities and obligations
- f) put together an antianger script to talk yourself through a difficult situation
- g) enumerate the benefits for anger management
- h) describe how and when you will use coping strategies to deal with your anger
- I) describe the negative consequences of the lack of anger management
- j) include statement of personal commitment to change (I decided to manage my anger. It's my choice. I am in control)
- k) challenge the client (come on, are you telling me you are never going to explode again? How are you going to do that? What if you really want to get back at the person?)
- l) what will be different in your life once you manage your anger

8. Give Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

Continue to practice one relaxation exercise three times per week for fifteen minutes. Write your plan for relapse prevention. Continue to measure your

blood pressure and fill out the anger record. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior, affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

9. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Session Number Eight

(Sessions number seven and eight emphasize review and closure)

Capsulation

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)
2. Review Homework and Discuss Anger Events that Occurred During the Week (Meichenbaum, 1996)
3. Review Any Difficulties that Occurred With the Relaxation Exercises (DiTomasso, 2000)
4. Practice Relaxation Exercises In The Session
5. Practice Anger Role-Plays -- Goal to Erase All Anger Responses (Beck, Freeman, & Associates, 1990)
6. Provide Closure To The Therapy Protocol (Meichenbaum, 1996)
 - A. Identify High-Risk Situations
 - B. Rehearse Responses to Anticipated Stressful Situations
 - C. State When, How, Where, and Why He Will Use the Coping Strategies
 - D. Review the Successful and Unsuccessful Efforts at Anger Management
7. Discuss and Implement Relapse Prevention Techniques (Meichenbaum, 1994)
8. Assign Homework and Review Self-monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)
9. Say Good-bye and Prepare for One Month Follow-up Session

10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

1. Set the Agenda (Dattilio & Freeman, 1992; Meichenbaum, 1996)

At the beginning of the session, therapist and client review the items to be covered within the session. The therapist makes suggestions based on this protocol. The client's agreement and collaboration is important. The client is asked for additional agenda items that are appropriate to the goals for the session.

2. Discuss Anger Events That Occurred During the Week

The client is asked to share anger events that occurred during the week. Triggers are identified as well as the intensity and duration of the event. Differences in the approach to the anger event from behavior in the past are identified. New behaviors that are based on positive coping mechanisms are affirmed (Meichenbaum, 1996).

3. Review Any Difficulties that Occur With the Relaxation Exercises

(DiTomasso, 2000)

The client is asked which relaxation exercises are difficult and to describe his difficulties and discomfort. Discomfort may stem from difficulties with breathing, the physical position, the situation, or the location. Suggestions to dispel the difficulties are made. Issues that could interfere with adherence are reviewed.

4. Practice Relaxation Exercises In The Session

Difficulties in the relaxation exercise are worked on in the session with the therapist present.

5. Practice Role Plays of Past Incidents that Triggered the Subjects Anger

(Beck, Freeman, & Associates, 1990)

Use role-plays based on emotionally charged topics to work with anger management. Use reverse role play, with the client as the perpetrator, so that the therapist can model more appropriate behaviors and coping mechanisms.

6. Provide Closure to the Eight-sessions (Meichenbaum, 1996)

- A. Identify High-Risk Situations
- B. Rehearse Responses to Anticipated Stressful Situations
- C. State When, How, Where, and You Will Use Coping Strategies
- D. Review Successful and Unsuccessful Efforts at Anger Management

7. Discuss and Implement Relapse Prevention (Meichenbaum, 1994)

The object of relapse prevention is to help you sustain your recovery through self-management of your anger responses. Relapse prevention skills will help you find ways to cope with emotional stress and physical pain. They will help you continue along a positive path and attain positive rewards in your life.

Suggestions include:

- a) identify situations and cues that could trigger a relapse
- b) practice behaviors to avoid high risk situations (leaving the situation, implementing diaphragmatic breathing, calling a friend, writing in a journal)
- c) manage lapses
- d) enlist social supports
- e) provide a better balance of pleasurable activities in your life to counterbalance responsibilities and obligations
- f) put together an antianger script to talk yourself through a difficult situation
- g) enumerate the benefits for anger management
- h) describe how and when you will use coping strategies to deal with your anger
- I) describe the negative consequences of the lack of anger management

j) include statement of personal commitment to change (I decided to manage my anger. It's my choice. I am in control)

k) challenge the client (come on, are you telling me you are never going to explode again? How are you going to do that? What if you really want to get back at the person?)

l) what will be different in your life once you manage your anger

8. Assign Homework and Review Self-Monitoring (Dattilio & Freeman, 1992; DiTomasso & Colameco, 1982; Meichenbaum, 1994)

Continue the relaxation and breathing exercises at least three times per week. Continue to fill out the anger record sheets and record the blood pressure for the next month until we meet for the one month, post-treatment session. In reference to self-monitoring, answer questions, review directions, positively reinforce behavior, affirm relevance, discuss difficulties or problems that have occurred or might occur in the future.

9. Say Good-bye and Prepare for the One Month, Follow-up Session

Thank the client for his participation and tell him he will be receiving the studies results in approximately four months time. Ask the client how he feels about our work together ending. Let him know that I enjoyed knowing him and working with him. Have him list the strengths he obtained. Inform him where and when we will meet for the one month, follow-up session. Tell him he must continue to record his blood pressure and the anger record sheets for the next 30 days. He should bring his response sheets with him to the follow-up session.

10. Fill Out The Subjective Anxiety Scale (Wolpe, 1973)

Appendix B

Anger Events Inventory

The Daily Anger Events Inventory, a self-report scale developed by the investigator, will be used by the subject to note the number of anger episodes per day, their meaning, intensity, and duration. A collateral scale (Appendix B) will be given to the spouse, partner, or significant-other to be completed independently in order to achieve more accurate results, because subjects' ability to observe their own anger may be subject to denial or inhibition (Emmons, 1991; Knelp et al., 1993; Pennebaker, 1991; Snyder et al., 1997). Item construction is based upon face validity, however, the instrument has not been tested for other forms of validity or for reliability. Data resulting from the frequency counts and the eight point scale answers (Barlow, 1988) will be compared for differences and similarities between the subject and the significant-other. Subjects and significant others will be asked not to share or compare their answers until the study ends.

Self-Monitoring of Anger

During this study, you are asked to keep records concerning your emotions, particularly anger. Anger is closely related to a diagnosis of high blood pressure in many people. Therefore, you will be provided with forms to use for recording your anger experiences on a daily basis. By learning how to observe your anger, you are taking a step in controlling your high blood pressure diagnosis. The record keeping process is called self-monitoring. By completing the anger report sheets, you will learn to observe where, when, and under what circumstances your anger occurs. This knowledge will help you eliminate inappropriate anger that is inhibited, expressed, or hidden. When you inhibit anger, you know that you are angry, but you chose not to express it. You act as if a problem does not

exist. Expressed anger, on the other hand, is verbalized, sometimes loudly and in an angry tone of voice. Hidden anger is out of awareness anger; you may not know you are angry.

You will be looking at the number of angry interactions and/or anger symptoms that you experience, how severe they are, how long they last, and the events that trigger them. You may notice some anxiety as you begin to monitor your emotions, a task that is sometimes difficult for people who are diagnosed with hypertension. Emotion is one of several factors that may be related to the development of high blood pressure. Others include: genetic susceptibility, sympathetic nervous system reactivity to stress, and lifestyle factors, such as obesity, heavy salt intake, smoking, alcoholism, cholesterol, and lack of exercise.

You are to fill out the Daily Anger Events Inventory forms that are provided to you (Craske, Barlow, & O'Leary, 1992, p. 19), using a separate form to describe each anger incident that occurs during the day, whenever you experience feelings of annoyance, irritability, hostility, anger, or rage.

Directions: Daily Anger Events Inventory for Self-Monitoring.

- At the top of the form record the date and time the anger episode began. Later, fill in the time the episode ended by observing when your physical symptoms decreased and/or when your mind relaxed and stopped thinking negative or angry thoughts.
- Place a check mark next to any of the physical symptoms you experienced during the anger episode.
- In the events section, describe in a few words what may have triggered your anger.
- In the thoughts section, record the thoughts that may have triggered your angry feelings. Perhaps you were interpreting a situation as unfair, or you had a critical or judgmental thought about someone else's behavior.
- Using the scales, indicate by circling a number how easy it was for you to become angry, how long your anger lasted, and how intense the anger became.
- Finally, using a scale, determine whether your anger was expressed (verbal expression to at least one other, confrontation, yelling, getting physical, being critical) or held inward (negative thoughts to yourself about the other and the injustices you experienced, thoughts of revenge).

Daily Anger Events Inventory--Self Report

Fill out for each anger event

Date ___/___/___ Time Began _____ A.M./P.M. Time Ended _____
 A.M./P.M.

Place a Check Beside Each Symptom You Are Experiencing

Symptoms

- | | |
|------------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Trembling/Twitching/Shaking | <input type="checkbox"/> Muscle Tension/Aches |
| <input type="checkbox"/> Restlessness | <input type="checkbox"/> Fatigue |
| <input type="checkbox"/> Pounding/Racing Heart | <input type="checkbox"/> Difficulty Breathing |
| <input type="checkbox"/> Dry Mouth | <input type="checkbox"/> Sweating/Clammy Hands |
| <input type="checkbox"/> Nausea/Diarrhea/Abdominal | <input type="checkbox"/> Dizzy/Lightheaded |
| <input type="checkbox"/> Frequent Urination | <input type="checkbox"/> Hot Flashes/Chills |
| <input type="checkbox"/> Keyed Up/On Edge | <input type="checkbox"/> Trouble Swallowing |
| <input type="checkbox"/> Trouble Sleeping | <input type="checkbox"/> Jumpy/Easily Startled |
| <input type="checkbox"/> Irritability | <input type="checkbox"/> Difficulty Concentrating |

Event that triggered the anger episode: anger eliciting situations are incidents, statements by others, or possible triggers preceding the anger (please, print and describe in detail)

Angry thoughts that triggered the anger episode (what you were thinking about prior to becoming angry)

Directions: Circle the number on the scale that most accurately reflects your answer.

1. How easy was it for you to become angry -- difficult to easy?

 0 1 2 3 4 5 6 7 8

Noanger Extremely Difficult Hard Moderately Very Easy

2. How angry did you become--mild to extreme?

 0 1 2 3 4 5 6 7 8

Noanger Mildly Moderately Strongly Extremely

3. How long did you remain angry? minutes, hours, days

 0 1 2 3 4 5 6 7 8

Noanger minutes hours one or two days many days/weeks

4. Did you experience "anger-in" (conscious and withheld or unconscious and not expressed) or "anger-out" (expressed using verbal aggression or expressed using physical aggression)?

Answer one, either 4a or 4b

4a. Anger-out: Expressed (let out)

 0 1 2 3 4 5 6 7 8
No anger Mild Moderate Strong Extreme Physical
Violence

5. Anger-in: Withheld/Suppressed (held in)

 0 1 2 3 4 5 6 7 8
No anger Mild Moderate Strong Extreme Violent Images

Appendix C

Anger Events Inventory – Partner Form

Partner Monitoring of Anger

During this study, you are asked to keep records concerning your partner's emotions, particularly anger. You will be provided with forms to use to describe your partner's anger and these forms should be filled out daily. However, if you have to miss a day, just begin again the next day. By observing your partner's anger, you are helping your partner (parent, friend) understand his anger. Since anger may be connected to a high blood pressure diagnosis, the more he understands about his anger, the more it may help his health.

By completing the anger report sheets, you will learn to observe where, when, and under what circumstances your partner becomes angry. This knowledge may help your partner eliminate inappropriate anger that he withholds, expresses, or hides. When your partners withholds his anger, he knows he is angry, but chooses not to express it. However, he may provide nonverbal cues to his anger, such as becoming more quiet than usual, slamming doors, or tightening his jaw. Expressed anger, on the other hand, is verbalized, sometimes loudly and in an angry tone of voice. When your partner's anger is hidden, he may not know he is angry and he may provide very few cues for you to observe.

On the basis of knowledge of your partner (parent, friend), you will have to predict how severe the anger is, how long it will last, and the events that may have triggered it. Do not share your answers with your partner until the study ends. You are asked to fill out the Daily Anger Events Inventory forms that are provided to you (Craske, Barlow, & O'Leary, 1992, p. 19), using a separate form to describe each anger incident that occurs during the day whenever your

partner seems to express or withhold feelings such as annoyance, criticism, irritability, hostility, anger, or rage.

Directions: Daily Anger Events Inventory -- Partner Monitoring Form.

- At the top of the form record the date and time the anger episode began. Later, fill in the time the episode ended by observing when the physical symptoms decreased and/or when the person stopped appearing and acting angry.
- Place a check mark next to any of the physical symptoms your partner seemed to be experiencing during the anger episode.
- In the events section, describe in a few words what may have triggered his anger.
- In the thoughts section, record the thoughts that may have triggered his angry feelings. Perhaps he was interpreting a situation as unfair, or he had a critical or judgmental thought about someone else's behavior.
- Using the scales, indicate by circling a number how easy it was for your partner to become angry, how long his anger lasted, and how intense the anger appeared.
- Finally, determine whether his anger was expressed (verbal expression to at least one other, confrontation, yelling, getting physical, being critical) or held inward (negative thoughts to himself about the other and the injustices you experienced, thoughts of revenge).

Daily Anger Events Inventory: Partner Form

Fill out for each anger event

Date ___/___/___ Time Began ___ A.M. P.M. Time Ended ___ A.M. P.M.

Place a Check Beside Each Symptom Your Partner Is Experiencing

Symptoms

- | | |
|------------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Trembling/Twitching/Shaking | <input type="checkbox"/> Muscle Tension/Aches |
| <input type="checkbox"/> Restlessness | <input type="checkbox"/> Fatigue |
| <input type="checkbox"/> Difficulty Breathing | |
| <input type="checkbox"/> Pounding/Racing Heart | <input type="checkbox"/> Sweating/Clammy Hands |
| <input type="checkbox"/> Dry Mouth | <input type="checkbox"/> Dizzy/Lightheaded |
| <input type="checkbox"/> Nausea/Diarrhea/Abdominal | <input type="checkbox"/> Hot Flashes/Chills |
| <input type="checkbox"/> Frequent Urination | <input type="checkbox"/> Trouble Swallowing |
| <input type="checkbox"/> Keyed Up/On Edge | <input type="checkbox"/> Jumpy/Easily Startled |
| <input type="checkbox"/> Trouble Sleeping | <input type="checkbox"/> Difficulty Concentrating |
| <input type="checkbox"/> Irritability | |

Event that triggered the anger episode: anger eliciting situations are incidents, statements by others, or possible triggers preceding the anger (please, print and describe in detail what may have happened)

Angry thoughts that triggered the anger episode (what was your partner thinking about prior to becoming angry)

Directions: Circle the number on the scale with the most correct answer.

1. How easy was it for your partner to become angry-- difficult to easy?

 0 1 2 3 4 5 6 7 8

No anger Extremely Difficult Hard Moderately Very Easy

2. How angry did your partner become--mild to extreme?

 0 1 2 3 4 5 6 7 8

No anger Mildly Moderately Strongly Extremely

3. How long did your partner remain angry?

 0 1 2 3 4 5 6 7 8

No anger minutes hours one or two days many days/weeks

4. Did your partner experience "anger-in" (conscious and withheld or unconscious and not expressed) or "anger-out" (expressed using verbal aggression or expressed using physical aggression)?

Answer one, either 4a or 4b

4a. Anger-out: Expressed (let out)

0 1 2 3 4 5 6 7 8
No anger Mild Moderate Strong Extreme Physical
Violence

4b. Anger-in: Withheld/Suppressed (held in)

0 1 2 3 4 5 6 7 8
No anger Mild Moderate Strong Extreme Violent Images

Appendix D

Blood Pressure Record Keeping

During this study, you are asked to keep records concerning your blood pressure and to record your blood pressure on a daily basis at a prescribed time. By learning how to observe your blood pressure, you are taking the first step in controlling your high blood pressure diagnosis. The record keeping process is called self-monitoring. By measuring your blood pressure at the specified time of day and by completing the blood pressure report sheets, you will learn to observe where, when, and under what circumstances your blood pressure is higher or lower.

Directions

Subjects will receive several sets of directions for taking their blood pressure that are printed on index cards for easy keeping. These directions can be kept in a wallet, taped to the bathroom mirror, or placed in the box with the self-monitoring device. The directions are from The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (NIH, 1997). The directions follow:

- The BP measurement will be taken using a self-monitoring device.
- Both SBP and DBP will be measured daily at least one hour after dinner, approximately between 6:30 PM and 8:30 PM. You should rest for five minutes before beginning the readings, use the bathroom prior to the reading, and refrain from smoking or caffeine for 30 minutes prior to the reading.
- You should be seated for the reading with your feet flat on the floor and your back supported. The cuff should be placed on your upper non-dominant arm and the arm is to be supported and positioned at heart level.

- The BP should be taken two times with a two minute break between each reading. You should remain seated and relaxed for the two minutes between the readings.
- The average of the two scores will be used to obtain the results. The average will be calculated by the investigator. The results for both the systolic blood pressure reading and the diastolic blood pressure reading should be written down on the form provided to you for that purpose. The form should be turned in to your therapist at your weekly session and a new form begun for the next week.
- The same room in the house, and the same chair or couch should be used for each measurement, because BP is susceptible to changes in posture.

Although you may be looking for a reduction in your blood pressure levels, it is necessary to understand that blood pressure may not always decrease, and that some days it may even increase, due to factors, such as stress, diet, physical health, and excitement. Therefore, results at the end of the eight-sessions are expected to be more meaningful than those recorded daily. Daily levels are expected to fluctuate to some degree.

BLOOD PRESSURE RECORD FORM

*(averages for the two readings are to be formulated by the investigator)

year : 2001

<u>Month -- July</u>	<u>SBP/DBP</u>	<u>SBP/DBP</u>	<u>Average*</u>
<u>1</u>	<u>153/100</u>	<u>155/102</u>	<u>154/101</u>
<u>2</u>	<u>145/95</u>	<u>146/97</u>	<u>146/96</u>
<u>3</u>			
<u>4</u>			
<u>5</u>			
<u>6</u>			
<u>7</u>			
<u>8</u>			
<u>9</u>			
<u>10</u>			
<u>11</u>			
<u>12</u>			
<u>13</u>			
<u>14</u>			
<u>15</u>			
<u>16</u>			

Appendix E

Inclusion Information for Physicians

11/20/02

RESEARCH STUDY: An Investigation Of Anger Management Techniques For Essential Hypertension Patients

Investigator: Karyne B. Wilner, MA, MA, MS

Doctoral Candidate, Department of Psychology, PCOM

Who to Exclude: Exclusion Criteria

- those who have been hospitalized for a mental illness
- those who have been diagnosed with cancer, secondary hypertension, previous myocardial infarction, active asthma, and chronic obstructive pulmonary disease
- those in therapy or counseling in the last three years

WHO TO REFER TO THE STUDY: Inclusion Criteria

- male
- between age 35 and 65
- high school graduate (GED acceptable) or above
- currently employed, full or part time
- having been diagnosed with Essential Hypertension for at least six months
- taking medicine to reduce or control the hypertension for at least two months
- having no additional active medical condition other than diabetic comorbidity
- must be willing to be audiotaped

Patient Name _____

Patient Telephone _____

Contact: Karyne B. Wilner, telephone: work 215-665-0705; cell 215-480-9937;

fax 215-665-9977, email PA160@aol.com

Appendix F

Initial Telephone Interview

Potential subjects will be referred to this study by their physicians. They will receive a letter from their physician (Appendix A), providing them with the investigator's name (Karyne Wilner), status (doctoral candidate in psychology), and telephone number (215-665-0705), that asks them to contact the investigator if they are interested in participating in a research study that involves nonpharmacological methods for treating essential hypertension. When potential subjects make telephone contact, the investigator will ask them questions in order to determine whether they fit the criteria for inclusion in the study.

The questions that will be asked are listed below. Each is followed by the inclusionary/exclusionary criteria [in brackets].

- **GENDER** male female

[inclusion: male]

- **AGE** _____

[inclusion: between the ages of 45 to 65]

- **EDUCATION LEVEL** _____

[inclusion: high school graduate or above]

- **OCCUPATION** _____ **RETIRED** yes no

UNEMPLOYED yes no

[inclusion: currently employed]

- **PREVIOUS THERAPY** yes no **HOW LONG AGO** _____

[exclusion: those attending therapy sessions in the last three years]

- **MEDICATION FOR MENTAL HEALTH PROBLEMS** yes no

- **HOSPITALIZED FOR A MENTAL ILLNESS** yes no

- **SUICIDE ATTEMPTS** yes no

[exclusions: suicide attempts, hospitalizations and/or medications for mental illness]

- **OTHER MEDICAL DIAGNOSES** -- have you ever been diagnosed with a serious illness other than essential hypertension

Are you still in treatment for that condition

[exclusion: diagnoses of cancer, secondary hypertension, previous myocardial infarction, and COPD, as well as other serious, active medical conditions]

[inclusion: diabetes and inactive illnesses]

- **WHEN WERE YOU DIAGNOSED WITH HYPERTENSION** _____

[inclusion: having been diagnosed for at least eight months prior to the study with EH]

- **WHO IS YOUR PHYSICIAN** _____

- **IS THIS WHO REFERRED YOU TO THE STUDY** yes no

- **ARE YOU TAKING MEDICINE TO REDUCE OR CONTROL YOUR BLOOD PRESSURE** yes no

[inclusion: must have been using BP medication for at least two months]

NAME OF MEDICATION _____ **HOW LONG** _____

WHAT OTHER MEDICATIONS DO YOU TAKE _____

FOR WHAT OTHER CONDITIONS _____

- **WHAT IS YOUR BLOOD PRESSURE LEVEL CURRENTLY** _____

[inclusion: must report a SBP, 130 or above and a DBP, 90 or above]

- **DO YOU LIVE WITH ANOTHER PERSON WHO WOULD BE WILLING TO ANSWER QUESTIONS THAT WOULD HELP DESCRIBE YOUR BEHAVIOR**

yes no

WHO IS THIS PERSON _____

IF NOT, IS THERE A PERSON WHO YOU SEE OFTEN ENOUGH THAT THEY COULD ANSWER QUESTIONS CONCERNING YOUR DAILY BEHAVIOR yes no

WHO IS THIS PERSON _____

[inclusion: must report living with another or in frequent contact with another who would be willing to answer questions about the subject's behavior]

If, on the basis of the telephone interview, the potential subject meets the inclusionary criteria for the study, he will be scheduled to meet with the investigator for a clinical interview, including demographic data the following week. At this session the inclusionary/exclusionary criteria will be reviewed to ascertain that the subject fits the study's requirements. Following the interview, the subject will be assessed by a doctoral candidate in psychology who is experienced in testing, using the five standardized pretests.

Appendix G

INFORMED CONSENT FORM

TITLE OF STUDY

An Investigation Of Anger Management Techniques for Essential Hypertension Patients

PURPOSE

The purpose of this study is to test the effect of a treatment for managing anger and reducing high blood pressure. We hope to find out whether anger-management will lead to lower blood pressure levels and better ways to handle stressful situations.

You are being asked to volunteer to participate in this research study because you suffer from high blood pressure and your physician has referred you here. You may be part of this study if you are male, between 35 and 65 years old, employed, live with at least one person or live alone but have a frequent companion, have at least a high school diploma or a GED, have been diagnosed with high blood pressure for at least six months, have been taking medicine for high blood pressure for at least two months, have not been in counseling or therapy within the last three years, have not been hospitalized with a mental illness, and have not been diagnosed with certain medical problems.

If you do not meet the above requirements, you cannot be in this study. In order to participate in the study, you must obtain a permission letter from your physician and sign a medical release form. You may decide not to be part of this study if you wish. If you decide to be part of this study, you may stop at any time without any consequence.

RESPONSIBLE INVESTIGATOR

Name: Karyne B. Wilner, MA, MA, MS
 Department: Philadelphia College of Osteopathic Medicine, Psychology
 Address: 4190 City Avenue, Philadelphia, PA 19131
 Phone: (215) 665-0705

PRINCIPAL INVESTIGATOR

Name: Robert A. DiTomasso, Ph.D., ABPP
 Department: Philadelphia College of Osteopathic Medicine, Psychology
 Address: 4190 City Avenue, Philadelphia, PA 19131
 Phone: (215) 871-6511

The doctors and scientists at Philadelphia College of Osteopathic Medicine (PCOM) do research on mental health problems and new treatments. The procedure you are being asked to volunteer for is part of a research project.

Even though this research project is to study anger and high blood pressure, this method does not take the place of the usual methods for treating high blood pressure. All subjects must continue their usual treatment with their physician and they must be under a physician's care in order to participate in this study.

If you have any questions or problems during the study, you can ask Dr. DiTomasso to answer them. Dr. DiTomasso will be available during the entire study and he can be reached at (215) 871-6511. If you want to know more about

Ms. Wilner's background, Dr. DiTomasso's background, or the rights of research subjects, you may call Dr. John Simelaro, Chairperson, PCOM Institutional Review Board at (215) 871-6337.

DESCRIPTION OF THE PROCEDURES

Your participation in this study involves a forty-five minute interview with Karyne Wilner, a licensed psychologist, followed by filling out a set of four questionnaires that will take about one more hour to answer. A doctoral student in clinical psychology will help you to complete these questionnaires. You will be asked to answer questions about anger, how you deal with it, and how it affects you. Your bloodpressure will also be taken by your physician.

After that visit, if you are chosen to be in the study and you agree to do so, you will be asked to attend therapy meetings, fill out questionnaires, take your blood pressure, and practice at home over a two month period.

During this time you will learn how to show your anger, recognize when you are angry, and how to control your anger. You will also learn how to relax and release tension that might otherwise lead to high blood pressure and you will develop better ways to help you deal with stress. The sessions will take place at the Brief Therapy Clinic at PCOM.

Your partner will also be asked to participate in the study. Your partner may be a spouse, relative, or friend. This person will be asked to answer questions about your anger three times a week.

The Table provided below tells you the total amount of time and the things you will need to do each week if you agree to be in the study.

Appendix G

PARTICIPANT TIME TABLE

Week Number	Total Amount Of Time This Week	Things For You To Do	Week Number	Total Amount Of Time This Week	Things For You To Do
1	2 hours and 15 minutes	1.initial interview with Karyne Wilner 2.fill out 4 questionnaires 3.physician takes your blood pressure 4.learn how to take your blood pressure using monitor	8	2 hours and 15 minutes	1.attend sixth therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week
2	1 hour and 10 minutes	1.fill out the anger form daily 2.take blood pressure with monitor daily	9	2 hours and 15 minutes	1.attend seventh therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week
3	2 hours and 15 minutes	1.attend first therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week	10	3 hours and 15 minutes	1.attend eighth therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week 5.fill out 4 questionnaires 6.physician takes your blood pressure
4	2 hours and 15 minutes	1.attend second therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week	11	30 minutes	1.take blood pressure 3 times a week 2.fill out anger forms 3 times a week
5	2 hours and 15 minutes	1.attend third therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week	12	30 minutes	1.take blood pressure 3 times a week 2.fill out anger forms 3 times a week
6	3 hours and 15 minutes	1.attend fourth therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week 5.fill out four questionnaires 6.physician takes your blood pressure	13	30 minutes	1.take blood pressure 3 times a week 2.fill out anger forms 3 times a week
7	2 hours and 15 minutes	1.attend fifth therapy session 2.take blood pressure 3 times a week 3.fill out anger forms 3 times a week 4.practice relaxation 3 times a week	14	1 hour and 30 minutes	

Total Number of Hours 26 hours and 30 minutes

Average number of hours per week 2 hours

POTENTIAL BENEFITS

The results of this study may help us to learn more about those things that lead to or cause high blood pressure. The results may help psychologists working with medical professionals find treatments that take those factors into account. It is possible that you may experience no benefits relating to your blood pressure. However, other people in the future may benefit from what the researchers learn from this study.

RISKS AND DISCOMFORTS

As a result of completing the interview and questionnaires, it is possible that you might focus on some negative aspects of your life and experience some anxiety and uncomfortable feelings. You can refuse to answer any of the questionnaires or questions without penalty. If you become distressed by any of the questions, you can contact Dr. DiTomasso.

ALTERNATIVES

The other choice is not to be in this study and continue with your usual treatment for high blood pressure.

PAYMENT

You will not receive any payment for being in this study. In return for your participation, you will receive a written summary of the overall findings of the study, free therapy, and a free device to use to measure your own blood pressure at home that you may keep. This device has a total value of approximately \$100.00.

CONFIDENTIALITY

The data from the study are confidential. All information relating to your participation will be securely kept in a locked file. Only the investigator for this study, her assistant, a doctoral candidate in psychology, her supervisor, her dissertation committee, and members of the Institutional Review Board, will be able to look at these records. If the results of this study are published, no names or other identifying information will be used; only data will be reported.

REASONS YOU MAY BE TAKEN OUT OF THE STUDY WITHOUT YOUR CONSENT

If health conditions occur that would make staying in the study possibly dangerous to you or if other conditions occur that would damage your health, Ms. Wilner and Dr. DiTomasso may take you out of the study. In addition, the entire study may be stopped if dangerous risks or side effects occur in other people.

NEW FINDINGS

If any new information develops that may affect your willingness to stay in this study, you will be told about it.

INJURY

In the event you feel distressed as a result of this research study, you will be provided with immediate necessary psychological and medical care.

However, you will not be provided with reimbursement for medical or psychological care or receive other payment. PCOM will not be responsible for any of your bills, including any routine medical or psychological care under this program or reimbursement for any side effects which may occur as a result of this program.

If you believe that you have suffered injury in the course of this research, you should notify John Simelaro, D.O., Chairperson, PCOM Institutional Review Board at (215) 871-6337. A review by a committee will be arranged to determine if your injury or illness is a result of participation in this research. You should also contact Dr. Simelaro if you believe that you have not been adequately informed as to the risks, benefits, alternative procedures, or that you are being pressured to continue in this study against your wishes.

VOLUNTARY PARTICIPATION

You understand that you may refuse to participate in this study. You are free to withdraw from the study at any time without any penalty. You voluntarily consent to participate in this study with the understanding that, while unlikely, possible stress might occur during the study. Not all possible effects of the study are known.

To the best of my knowledge, I do not meet the exclusionary data mentioned above (in the Purpose of the Study section).

I consent to audiotaping of the sessions and a review of selected tapes by a clinical psychology doctoral candidate.

I consent to my treating physician receiving a summary of the results from this evaluation and I give my consent to Ms. Wilner to disclose information obtained in this evaluation without restriction to my treating physician,
 _____, (name of your physician), at

_____ (Physician’s phone number and address).

I have had adequate time to read this form and I understand its contents. I have been given a copy for my personal records.

I agree to participate in this research study.

Signature of Subject: _____

Date: _____ / _____ / _____ Time: _____ AM/PM

Signature of Witness: _____

Date: _____ / _____ / _____ Time: _____ AM/PM

Signature of Investigator: _____

Date: _____/_____/_____ Time: _____ AM/PM

PLEASE PLACE ONE SIGNED COPY OF THIS CONSENT FORM IN THE ENVELOPE CONTAINING THE QUESTIONNAIRE PACKET THAT YOU WILL RETURN TO THE RESEARCHER. KEEP THE OTHER CONSENT FORM COPY FOR YOUR RECORDS. THANK YOU.

AUDIOTAPE CONSENT FORM

I consent to being audiotaped for the study: An investigation of anger management techniques for essential hypertension patients.

_____ date

_____ date

CONSENT TO RELEASE CONFIDENTIAL INFORMATION

If you would like your treating physician to receive a summary of the results from this evaluation, please sign the consent release form.

I _____ (your name) give my consent to Ms. Wilner to disclose information obtained in this evaluation without restriction to my treating physician, _____, (name of your physician), at _____ (Physician's phone number and address). The consent on this page will automatically expire upon 180 days after today's date.

I have had adequate time to read this form and I understand its contents.

_____ (Date)

_____ (Date)

Appendix H

PARTNER INFORMED CONSENT FORM

As a spouse, friend, or relative, I agree to participate in this study. I am aware that my participation will involve filling out anger forms that describe my partner's anger, taking 5 to 10 minutes a day, 3 days a week, for a total of 30 minutes per week, for a period of 12 to 16 weeks. The first week will involve filling out the sheets 10 minutes a day, 7 days a week, for a total of 70 minutes.

VOLUNTARY PARTICIPATION

You understand that you may refuse to participate in this study. You are free to withdraw from the study at any time without any penalty. You voluntarily consent to participate in this study with the understanding that, while unlikely, possible stress might occur during the study. Not all possible effects of the study are known.

I have had adequate time to read this form and I understand its contents. I have been given a copy for my personal records.

I agree to participate in this research study.

Signature of Partner: _____

Date: ____/____/____ Time: _____AM/PM

Signature of Witness: _____

Date: ____/____/____ Time: _____AM/PM

Signature of Investigator: _____

Date: ____/____/____ Time: _____AM/PM

PLEASE PLACE ONE SIGNED COPY OF THIS CONSENT FORM IN THE SELF-ADDRESSED STAMPED ENVELOPE THAT YOU WILL RETURN TO THE RESEARCHER. KEEP THE OTHER CONSENT FORM COPY FOR YOUR RECORDS. THANK YOU.

Appendix I

Demographic Questionnaire, Clinical Interview,
and Health History

Subject Control Number: _____

Age: _____ Date of Birth: _____

Name: _____

Address: _____

Telephone: _____

Religion: _____

Race: _____ Ethnicity: _____

Education Level: _____ Number of Years: _____

Degrees: _____

General Occupation (s): _____

Present Employment: _____ No. of Years: _____

Approximate Income: _____

Military Status: _____ What Year: _____

Relationship status: Married: ___ Divorced: ___

Separated: ___ Single: ___ Widowed: ___

Multiple Marriages: _____

Number of Children: _____ Ages: _____

Parents: Alive: _____ Together: _____

Deceased: ___ What Year: ___ Cause: _____

Divorced: _____ What Year: _____ Your

Age: _____

Father's Age: _____ Father's Employment: _____

Mother's Age: _____ Mother's Employment: _____

Number of Siblings: _____ Ages: _____ Place in Birth Order: _____

Substance Use and Abuse:

Use of Alcohol: _____ Type: _____ How Often: _____

Use of Drugs: _____ Type: _____ How Often: _____

Smoking: _____ How Many: _____

Food: _____ Type of Problem: _____

Mental Health:

Previous Therapy: _____ When: _____

With Whom: _____

Presenting Problem(s): _____

Medication for Mental Problems: _____ What Kind: _____

Suicide Attempts: _____ Describe: _____

Suicidal Thinking: _____

Health History:

Height: _____ Weight: _____

Current Stressors That Could Affect Your Health: _____

Allergies: _____

Have You Been Diagnosed With a Serious Illness Other Than High Blood Pressure? Type(s) of

Illness: _____ When: _____

Surgeries: _____ When: _____

Broken Bones: _____ When: _____

Other Injuries: _____ When: _____

Hypertension:

When Were You Diagnosed With Hypertension: _____

How Did This Diagnosis Occur: _____

Did You Experience Symptoms at the Time of Diagnosis: _____

How Long Have You Had This Illness: _____

Who is Your Physician: _____

What is Your Treatment Program: _____

What BP Medication Do You Take: _____

How Long Have You Been Taking It: _____

Do You Self-Monitor: _____

What Is Your Blood Pressure currently: _____

Social Relations:

What Do You Do In Your Leisure Time: _____

How Many Close Friends Do You Have: _____

Who Are They: _____

What Organizations Do You Belong To: _____

Who Referred you to this study: _____

Appendix J

Directions for Relaxation and Breathing Exercises

Directions for Progressive Muscle Relaxation (Craske, Barlow, & O'leary, 1992; DiTomasso, 2000)

a) Get into a comfortable position, close your eyes, and sit quietly for a few seconds.

b) Build up the tension in your lower arms by making fists with your hands and pulling up on the wrists. If your nails are long, press your fingers against your palms to make fists. Feel the tension through your lower arms, wrists, fingers, knuckles, and hands. Focus on the tension--notice the sensations of pulling, of discomfort, of tightness. Hold the tension for 10 seconds. Now, release the tension and let your hands and lower arms relax onto the chair or bed with palms facing down. Focus your attention on the sensations of warmth in your hands and arms. Feel the release of tension. Relax the muscles for 20 seconds.

c) Now, build up the tension in your upper arms by pulling the arms back and in towards your sides. Feel the tension in the back of the arms, radiating up into your shoulders and back. Focus on the sensations of tension. Hold the tension for 10 seconds. Now, release the arms and let them relax heavily down. Focus on your upper arms and feel the difference compared to the tension. Your arms feel heavy, warm, and relaxed. Relax for 20 seconds.

d) Now, build up the tension in your lower legs by flexing your feet and pointing your toes toward your upper body. Feel the tension as it spreads through your feet, your ankles, your shins, and your calf muscles. Feel the

tension spreading down the back of the leg and into the foot, under the foot, and around the toes. Focus on that part of your body for 10 seconds. Now, release the leg tension. Let your legs relax heavily onto the chair or the bed. Feel the difference in the muscles as they relax. Feel the release from tension, the sense of comfort, the warmth and heaviness of relaxation for 20 seconds.

e) Now build up the tension in your upper legs by pulling your knees together and lifting your legs off the bed or chair. Focus on the tightness through your upper legs. Feel the pulling sensation from your hip down and notice the tension in your legs. Focus on that part of your body for 10 seconds. Now, release the tension, and let your legs drop heavily down onto the chair or the bed. Let the tension disappear. Focus on the feeling of relaxation. Feel the difference in your legs. Focus on the feeling of comfort for 20 seconds.

f) Now, build up the tension in your stomach by pulling your stomach in toward the spine, very tight. Feel the tension. Feel the tightness and focus on that part of your body for 10 seconds. Now let the stomach go--let it go further and further. Feel the sense of warmth circulating across your stomach. Feel the comfort of relaxation, 20 seconds.

g) Now, build up the tension in your chest by taking a deep breath and holding it. Your chest is expanded, and the muscles are stretched around your chest--feel the tension around your front and your back. Hold your breath, 10 seconds. Now, slowly, let the air escape and breathe normally, letting the air flow in and out smoothly and easily. Feel the difference as the muscles relax in comparison to the tension.

h) Moving up to your shoulders, imagine your shoulders are on strings being pulled up toward your ears. Feel the tension around your shoulders,

radiating down into your back and up into your neck and the back of your head. Focus on that part of your body. Describe the sensations to yourself. Focus (10 seconds) and then let the shoulders droop down. Let them droop further and further, feeling very relaxed. Feel the sense of relaxation around your neck and shoulders. Focus on the comfort of relaxation for 20 seconds.

i) Build up the tension around your neck by pressing the back of your neck toward the chair or bed and pulling your chin down toward your chest. Feel the tightness around the back of the neck spreading up into your head. Focus on the tension (10 seconds). Now release, letting your head rest heavily against the bed or chair. Nothing is holding it up except for the support behind. Focus on the relaxation for 20 seconds and feel the difference from the tension.

j) Build up the tension around your mouth and jaw and throat by clenching your teeth and forcing the corners of your mouth back into a forced smile. Hold the tension (10 seconds). Feel the tightness and describe the sensations to yourself. And now release the tension, letting your mouth drop open and the muscles around the throat and jaw relax. Focus on the difference in the sensations in that part of your body for 20 seconds.

k) Now build up the tension around your eyes by squeezing your eyes tightly together for a few seconds and releasing. Let the tension disappear from around your eyes. Feel the difference as the muscles relax.

l) Now build up the tension across the lower forehead by frowning, pulling your eyebrows down and toward the center. Feel the tension across your forehead and the top of your head. Focus on the tension for 10 seconds and then release, smoothing out the wrinkles and letting your forehead relax. Feel the difference.

m) Finally, build up the tension across the upper forehead by raising your eyebrows up as high as you can. Feel the wrinkling and the pulling sensations across your forehead and the top of your head. Hold the tension for 10 seconds and then relax, letting your eyebrows rest down and the tension leave. Focus on the sensations of relaxation and feel the difference compared to the tension.

n) Now, your whole body is feeling relaxed and comfortable. Take a moment to release all tension from your body. Now, as you spend a few minutes in this relaxed state, think about your breathing. Breathe. Think the word "relax.". Feel comfortable and relaxed.

Finish by evaluating your experience. Were there any parts of your body that were difficult to relax? For very tense areas of your body, it helps to tense and release several times. Were you able to focus your attention? If other thoughts came into your mind, did you let them pass through? Did you feel more relaxed after the exercise?

Directions for Staccato Breathing (Pierrakos, 1989; Wilner, 1999)

Staccato breathing mimics the biological rhythm of all living creatures in the universe. Movement in the human body is based on biological pulsation that involves expansion and contraction (Pierrakos, 1989). Many people seem to have lost the ability to engage in this pulsatory movement. Pulsatory mechanisms, that occur continuously within the body when they have not been blocked by early traumatic experiences, can be recaptured through the practice of staccato breathing.

There are three stages to the breathing: expansion, the active phase; contraction, the receptive phase; and pause, the relaxation phase.

This breathing should not be done automatically or in a mechanical way.

Experience your physical sensations and establish a conscious awareness of your body and your emotional state as you inhale and exhale. This technique should be used ten minutes per day, preferably in the morning. We will practice it together in this session so that you will have confidence that you are doing it correctly when you are at home.

a) The active phase begins the breathing. Start by lying down flat on a couch, mat or carpet with feet flat on the floor, knees bent, and eyes closed. Breathe in short sniffs through the nose with your mouth closed to the count of five: One. Two. Three. Four. Five.

b) As you inhale, arch your back, feeling the stretch of your backbone. Stick your chest out and press your shoulders into the floor, thrusting the pelvis back into the floor at the same time. This position curves the backbone and creates a space between the back and the floor. In this position, hold the breath for approximately 3 seconds before exhaling.

c) In the second phase, the exhalation, you contract. Exhale through the mouth, vocalizing the sound "uuuhhh" softly, letting go of the depleted, used-up air. At the same time, round your shoulders forward, in toward your heart, and tip the lower part of your pelvis up, about an inch off of the floor. Tighten your body. In this position, the back flattens onto the floor and the head either remains resting on the floor or lifts slightly when the shoulders curve forward and inward.

d) Following the contraction stage, relax for a few seconds before beginning the next breath. Let your belly soften. Then start to breathe again. Inhale, one, two, three.... "

Directions for the Meditation Exercise (Benson, 1993; McKay, Rogers, & McKay, 1989)

Directions: To meditate find a quiet, peaceful place in your home. Put yourself in a comfortable sitting position (Benson, 1993; McKay, Rogers, & McKay, 1989, p. 109). It may help to dim the lights or light a candle. The key to meditation is to focus.

a) Sit comfortably in a quiet place and center yourself. Close your eyes.

b) Become aware of your breathing. Your breathing is your main focus.

Allow yourself to breath naturally. Do not change your breath; just observe it.

c) On the in-breath say the word "in" and on the out-breath say the word "out". Continue this breathing labeling your breaths for a few minutes.

d) If a thought passes through your mind, do not dwell on it. Let it pass through and then let it go immediately. The focus is your breathing.

e) Continue to observe your breath, but change the words. On the in-breath say "love", breathing in the love around you. On the out-breath say "fear" or "anger", to let go of whatever negativity you carry within you.

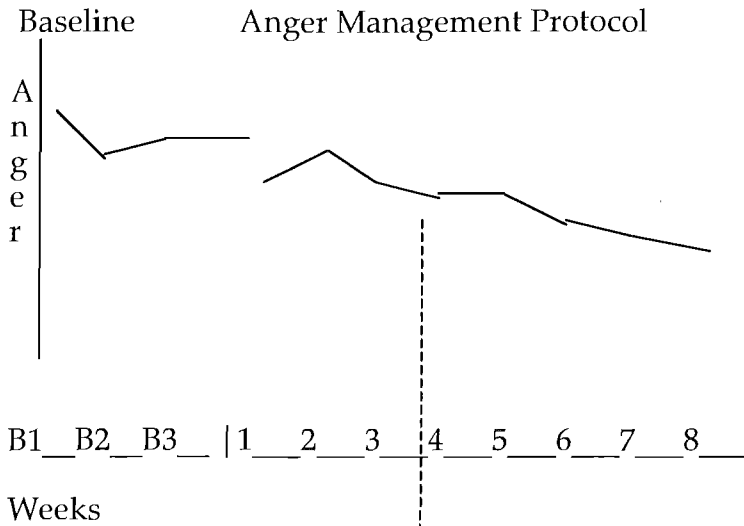
Do the meditation once daily for at least ten minutes. If it is difficult for you to focus, start out by meditating for a shorter time period, such as 5 minutes.

Meditation is a wonderful way to begin or end a day. Eventually you may choose to meditate in one or two 15 or 20 minute sessions per day.

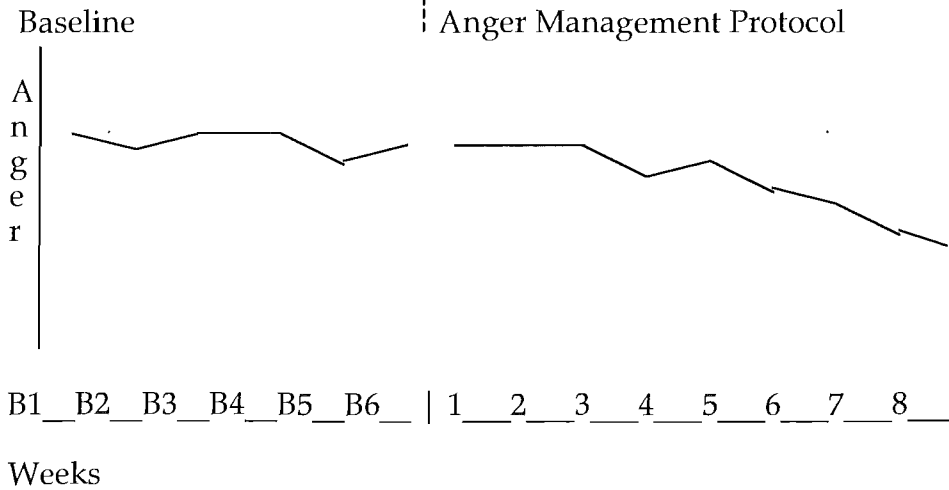
Appendix K

Multiple Baseline, Time-Lag, Experimental Design, Across Individual Subjects

Subject 1



Subject 2



After the first subject's anger scores decrease, the Anger Management Protocol is introduced to the second subject.

Appendix L

Letter of Solicitation

10/10/02

Dear Patient,

We are doing a study about anger and high blood pressure. You are being asked to be in this study because you have high blood pressure and your physician has referred you.

Your participation will involve a forty-five minute interview. After that you will fill out a set of questionnaires that will take about one hour to complete. You will be asked to answer questions about anger, how you deal with it, and how it affects you. Your blood pressure will be taken by your physician.

If you are chosen to be in the study, you will be asked to attend eight, one hour, weekly meetings, at no cost to you, at your doctor's office. Although the study will take time, you will learn new ways to deal with anger, and how to relax, release tension, and deal with stress that might lead to high blood pressure.

To participate, you must get a permission letter from your doctor. Your doctor will get a written summary of the overall findings as they apply to you. You will not receive payment for being in the study. However, you will receive 8 free sessions about how to deal with anger, and a blood pressure machine that is worth approximately \$90.00.

If you wish to be in the study, please call Karyne Wilner at 215-665-0705 and leave your telephone numbers and the best times to reach you

Sincerely yours,

Karyne B. Wilner, MA, MA, MS
Doctoral Candidate in Psychology
Philadelphia College of Osteopathic Medicine

Robert A. DiTomasso, Ph.D., ABPP
Professor, Director of Clinical Research, Vice Chairman
Philadelphia College of Osteopathic Medicine