

2009

The Psychometric Properties of the Mahan and DiTomasso Anger Scale (Mad-AS) and Its Relationship to Cognitive Distortions and Attitudes among Adults Who Experience Symptoms of Anger

Dorothy Latella-Zakhireh
dorothylz@comcast.net

Follow this and additional works at: http://digitalcommons.pcom.edu/psychology_dissertations



Part of the [Clinical Psychology Commons](#)

Recommended Citation

Latella-Zakhireh, Dorothy, "The Psychometric Properties of the Mahan and DiTomasso Anger Scale (Mad-AS) and Its Relationship to Cognitive Distortions and Attitudes among Adults Who Experience Symptoms of Anger" (2009). *PCOM Psychology Dissertations*. Paper 181.

This Dissertation is brought to you for free and open access by the Student Dissertations, Theses and Papers at DigitalCommons@PCOM. It has been accepted for inclusion in PCOM Psychology Dissertations by an authorized administrator of DigitalCommons@PCOM. For more information, please contact library@pcom.edu.

Philadelphia College of Osteopathic Medicine

Department of Psychology

THE PSYCHOMETRIC PROPERTIES OF THE MAHAN AND DI TOMASSO ANGER
SCALE (MAD-AS) AND ITS RELATIONSHIP TO COGNITIVE DISTORTIONS AND
ATTITUDES AMONG ADULTS WHO EXPERIENCE SYMPTOMS OF ANGER

By Dorothy Latella-Zakhireh, Psy.D.

Submitted in Partial Fulfillment of the Requirements of the Degree of

Doctor of Psychology

April 27, 2009

PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Dorothy Latella-Zakiteh
on the 27th day of April, 2009, 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.

Committee Members' Signatures:

Robert A. DiTomasso, Ph.D., ABPP, Chairperson

Virginia Salzer, Ph.D.

Deborah Chiumento, Psy.D.

Robert A. DiTomasso, Ph.D., ABPP, Chair, Department of Psychology

Dedication

This dissertation is dedicated to Dr. Robert DiTomasso, whose guidance and support started my first year at PCOM when he was my academic advisor. He has come to know me at times better than I know myself. He always had faith in me and taught me never to stop believing in myself. I have unlimited respect and admiration for his mentorship. He taught me the essential qualities in being a psychologist through his unassuming manner. Heartfelt gratitude is given to this man in helping to facilitate a dissertation topic worthy of extensive research. He is a gifted teacher, who cultivated an appreciation, and continued interest to enhance my understanding in statistics and research methods beyond the scope of this project.

Acknowledgements

This dissertation would not have been completed without the help of several people. I would like to specially thank my parents, Dorothy and Philip Latella for helping with the distribution of a good number of the questionnaires employed in this study. I also appreciate the time and effort that my sister, Josephine, put into this project to check for accuracy of scoring and data entry. A special thanks to Dr. Virginia Salzer, for all her time and energy in running back and forth from floor to floor to help solve and address issues with the data entry for the statistical package. I also send a special thanks to Angelika Mohnke for sending me the output data in a way that would be compatible with my computer. Sincere thanks also to Dr. Deborah Chiumento for agreeing to be a member of my dissertation committee. My thanks to Aunt Helene Saulino, for the constant phone calls and messages left in motivating me to finish. I am so grateful to my soul sister, Dr. Lisa Gambino for always being there for me, and to Dr. John and Toby Gordon, as well as friends at Clinical Neuropsychology Associates for believing in me. Finally, I am indebted to my husband, Barry Zakireh, Ph.D. for being my “everything”; you are the strength beneath my wings.

Abstract

The influence of cognitive schema on negative emotions such as depression and anger has been investigated in a number of prior studies. This study sought to assess the relationship between anger and various components of anger with cognitive distortions, and dysfunctional attitudes in a nonclinical sample. Subjects were 128 adult males and females who completed several measures related to anger and cognitive distortions. The measures were the Mahan and DiTomasso Anger Scale (MAD-AS), the Inventory of Cognitive Distortions (ICD), and the Dysfunctional Attitudes Scale (DAS). It was hypothesized that cognitive distortions including depressogenic cognitions, as reflected in various subscales of the measures employed, are significantly related to the degree of anger reported by subjects. Measures of association indicated support for all hypotheses under examination. In particular, cognitive distortions related to magnification; externalization of self-esteem and perfectionism showed a strong or consistent positive relationship to the degree of anger reported by subjects. Furthermore, a strong relationship was found between cognitive distortions (ICD) and several components of anger, including tendencies toward argumentativeness or emotional control. The results are discussed in relationship to cognitive behavioral methods, implications for clinical intervention, and areas of future research.

Table of Contents

| | |
|--|----|
| Table of Contents..... | vi |
| 1. Introduction and literature review..... | 1 |
| 1.1 Overview of Anger..... | 1 |
| a. Statement of the Problem..... | 1 |
| b. Purpose of the Study..... | 4 |
| 1.2 Rational and Theoretical Background..... | 6 |
| 1.3 Related Research | 15 |
| a. Defining Anger..... | 15 |
| b. Prevalence of Anger | 16 |
| 1.4 Anger at the Individual Level..... | 18 |
| a. Neurobiology of Anger..... | 19 |
| b. Personal Characteristics Perpetuating Anger..... | 22 |
| 1.5 Anger at the Social Level..... | 26 |
| 1.6 Secondary Issues to Chronic Anger Arousal..... | 27 |
| a. Health Related Problems..... | 27 |
| b. Road Rage..... | 29 |
| c. Interpersonal Problems..... | 29 |
| d. Criminal Behavior Secondary to Anger..... | 31 |
| 1.7 The Relationship between Anger and Depression..... | 32 |
| 1.8 Treatment of Anger..... | 33 |

| | | |
|------|--|----|
| 1.9 | Assessment of Anger..... | 36 |
| 1.10 | Summary..... | 45 |
| | a. Hypotheses and Relevant Research..... | 45 |
| 2. | Method..... | 53 |
| | a. Participants..... | 53 |
| | b. Overview of Research Design..... | 54 |
| | c. Measures..... | 54 |
| | d. Procedures..... | 61 |
| 3. | Results..... | 63 |
| | a. Statistical Analysis..... | 63 |
| | b. Descriptive Statistics..... | 63 |
| | c. Results | 64 |
| 4. | Discussion..... | 67 |
| | a. Implication for Practitioners..... | 70 |
| | b. Implication for General Public..... | 71 |
| | c. Limitations of the Study..... | 72 |
| | References..... | 75 |
| | APPENDIX | 95 |
| | a. Introduction Letter..... | 95 |
| | b. Participation Criteria..... | 96 |
| | c. General Instructions..... | 97 |
| | d. Demographic Information..... | 98 |

CHAPTER 1: INTRODUCTION

Our nation's emotional state has reached epic proportions in its expression of anger (Begley, 2007). This common emotion is a significant problem that warrants the attention of the professional community. Car accidents resulting from road rage and the manifestation of mental health problems from unresolved anger are a few cases in point. The criminal justice system is encumbered with anger related crimes. The medical and psychological communities are trying to efficiently address all the health related problems secondary to cumulative anger. In addition, researchers have found that many unpleasant situational factors can fuel anger and hostility, these can range from physical pain, excessive and prolonged heat leading to extreme discomfort, to economic hardship (Lindsay & Anderson, 2000). Indeed, many of these issues secondary to anger continue to burden our nation and individuals alike through financial costs, maintenance or expansion of prisons, car insurance rates, skyrocketing medical insurance, and reduction of citizens' paychecks due to taxes. "Unbridled anger is the cause of emotional distress, disrupted relationships, loss of productivity, ruined careers as well as the destruction of property, personal injury and death" (Taylor, Novaco, & Oswald, 2005). The effects of anger infiltrate all our lives. However, its influence on some individuals creates a challenge for living a safe, peaceful, emotionally and/or physically healthy life. This study will explore anger, initially, by discussing the statement of the problem and the purpose of this study.

Statement of the Problem

In the movie, *Anger Management*, the renowned clinical psychologist Dr. Buddy Rydell (played by Jack Nicholson) specialized in the treatment of anger problems. The

story's silliness and lightheartedness bears little, if any, resemblance to the real-world problems and treatment associated with anger (Taylor, Novaco, Oswald, 2005). The entertainment industry and the media cover a broad range of topics that reflect themes of anger (Berkowitz & Harmon-Jones, 2004) including international wars, murders, sexual assault, child abuse, community violence, school shootings, and individuals or groups engaging in aggressive, violent, or criminal behaviors (Beck, 1999; Bushman, Baumeister, & Phillips, 2001). However, only to a lesser degree do the media promote social awareness regarding the effects of anger on one's health by reporting outcome data conducted through medical research (Berkowitz & Harmon-Jones, 2004; Spielberg, 2006). Why are television and movie producers obsessed with stories which depict themes of gang violence, mobsters, verbal hostility, physical fights, police chases, use of guns and other weapons, as well as war movies and stories having themes of family turmoil, anger, and violence? If the entertainment industry is mimicking life and reflecting the social and interpersonal problems in many communities, it has had little impact on altering anger in our midst. How did we get to be such an angry society? Anger expressed in a "positive" manner can be a healthy emotion (Beck, 1999). However, it may be safe to say that most Americans do not consistently express anger positively by countless pieces of documentation regarding the "verbal and physical attacks" on individuals who work or deal with the public (Dillion-Hooper, 2005). Unfortunately, many community employees receive the impact and burden "of the nation's ill temper" (Dillion-Hooper, 2005). These daily social exchanges involve people's perceptions of receiving mistreatment from one another, with both sides frequently manifesting feelings and behaviors of anger (Barclay, Skarlicki, & Pugh, 2005; Aquino, Douglas, & Martinko,

2004). In fact, poor leadership and injustice at an interpersonal level strongly correlate with employees targeting their aggressive behaviors towards their supervisors (Hershcovis, Turner, Barling, Arnold, Dupre, Inness, LeBlanc, & Sivanathan, 2007). Therefore, the increasing incidents of abusive, angry behaviors projected towards community members and employees have compelled “City & Guilds to create the first government-accredited qualification course in conflict management” (Dillion-Hooper, 2005). There seems to be an endless amount of personal misery and damaged relationships caused by the impact of uncontrolled anger (Beck, 1999). Therefore, providing skills in conflict management is a step in the positive direction. However, professionals and community members need to get involved to help reduce anger, “the worst propensity in human nature” (Kassinove & Sukhodolsky, 1995), by addressing its intrapersonal and interpersonal aspects. The experience and expression of anger can be a healthy, beneficial and an adaptive response to the appraisal of physical threat in a social or interpersonal situation (Beck, 1999). However, if there are frequent appraisals that are exaggerated or out of proportion to the situation, this emotion then motivates negative behavior and significantly impacts one’s physical health or psychological well-being (Spielberger, 2006). Therefore it is as important to evaluate and monitor a person’s emotional state as it is necessary to measure his or her pulse rate, blood pressure, and body temperature, which are the vital signs that provide information about the physical health (Spielberger, 2006; Mahan, 2001; Mammen, Shear, Pilkonis, Kolko, Thase, & Greeno, 1999). Sandra Thomas, one of the leading psychologists/researchers in the field of anger, reported little improvement in decreasing the expression of angry behaviors, and citing high incidence of violence among children (Dittmann, 2003). She further

stated the “need to understand anger before effectively intervening” (Dittmann, 2003). In many ways, anger is the same whether “provoked by a rebellious child or a rebellious community as well as an abusive spouse or ruthless government leader(s)” (Beck, 1999). Therefore mental and health professionals will need a well constructed assessment tool. The Mahan and DiTomasso Anger Scale (MAD-AS) was constructed to evaluate, understand, and monitor those who engage in unhealthy expression of anger. It is also important to evaluate the specific errors in thinking associated with the inappropriate expression of anger. “This is particularly evident with regard to the cognitive processes associated with anger. Although cognitive-behavioral therapy is currently the preferred modality in the treatment of angry individual, treatment research is limited by the lack of theoretically derived instruments for assessing the cognitive errors assumed to underlie maladaptive anger”(Martin & Dahlen, 2007).

Purpose of the Study

This study has three objectives. The first is to assess the degree of relationship between distorted thinking, attitudes, and anger in a non-clinical adult sample by employing the measures of MAD-AS and the Inventory of Cognitive Distortions (ICD). The second objective is to examine the relationship between anger, as measured by the MAD-AS, and distorted thinking, as assessed by the Dysfunctional Attitudes Scale (DAS). The third objective is to examine the relationship between cognitive distortions through the ICD, and several components of anger (via MAD-AS). At present, there is no research exploring the specific relationships between and among these factors. This study has the potential to make significant contributions for several reasons. First, if in fact there is a significant correlation between cognitive distortions, attitudes, and anger, then

it would then open the way to more effective intervention strategies in adults with physical and /or emotional problems secondary to anger symptoms. Second, it would facilitate a unified system in the evaluation of cognitive theories of anger and provide a mechanism for evaluating the potential mode specifically for its treatment; third, there will be normative data representing a more diverse sample population for the DAS since it was originally developed on a college population (Weissman, 1979; Oliver & Baumgart, 1985). The current research would represent a sample from a non-clinical adult population. Furthermore, research to date indicates the DAS data produced an overall single-scale score for dysfunctional attitudes as in the original study (Weissman, 1979; Yurica, 2002). Therefore, the Dysfunctional Attitude Scale provided an overall, score representative of the person's dysfunctional attitude. A renowned study reported a correlation of .41 between the DAS and the BDI, which provides evidence that depressionogenic cognitions are significantly related to depression (Oliver & Baumgart, 1985). However, their relationship is only moderate, and the depressionogenic cognitions remain conceptually different from depression (Oliver & Baumgart, 1985). Therefore this study anticipates results that indicate depressionogenic cognitions are more closely related to anger-related thoughts and attitudes. Finally, there is limited to no research at present assessing the factors within the DAS that contributed to the individual differences and vulnerabilities accounting for the dysfunctional, depressogenic attitudes, and schemas. However, two studies in the mid-eighties utilized factor analysis to examine the differences among the responses on the DAS (Cane, Olinger, Gotlib, & Kuiper, 1986; Oliver & Baumgart, 1985). This study utilized a three factor design. The factor, Love, was added to the two factor structure which was refined from Oliver and Baumgart's four

factor design (Cane, et al 1986; Oliver & Baumgart, 1985). Specific details will be provided in the section reviewing the study's psychometric measures.

Rationale and Theoretical Background

One goal of the study is to address the relationship between MAD-AS and the ICD in terms of distorted thinking, attitude, and anger. Because the MAD-AS was modeled after Beck's inventories, then it is reasonable that the theory of anger be based on this perspective as well.

Aaron T. Beck a renowned psychiatrist was a trained psychoanalyst. During the early years of his professional career, psychoanalysis was employed to treat individuals with symptoms of depression. Beck consistently observed a pattern when using the psychoanalytic technique free association; his patients frequently failed to report negative thoughts. These negative thoughts or cognitions were outside of conscious control and occurred without choice. Therefore Beck labeled these cognitions automatic thoughts. He compared the automatic thoughts with Freud's theory of the preconscious when indicating a patient may not be aware of the automatic thoughts, yet becomes aware of the negative affect in such cognitions. Moreover, cognitive therapists and psychoanalysts similarly conceptualize a patient's problem by identifying and modifying "core" issues. However, the differences between these disciplines lie in how they view the nature of the core problem. Psychoanalysts see a patient's "core" problem as the structure of the unconscious, whereas cognitive therapists posit the idea that the "products of this process is largely in the realm of awareness and may be more accessible to consciousness with the aid of various cognitive strategies or techniques" (Greenberg, 2008; Beck, Freeman, Davis & Associates, 2004).

Cognitive therapy, developed by Aaron Beck at the University of Pennsylvania in the early 1960s (Beck, 1964), is characterized as a structured, short-term, present-oriented psychotherapy. Cognitive Therapy is directed at solving current problems and modifying dysfunctional thinking and behavior (Beck, 1964). This perspective and these techniques were originally formulated for individuals experiencing depression (Beck, 1964). Through the years, however, through the years successful adaptations in cognitive therapy with a diverse set of psychiatric disorders have emerged by researchers beyond Beck (Scott, Williams, & Beck, 1989; Freeman & Dattilio, 1992; Freeman, Schrodtt, Gilson, & Ludgate, 1993; Beck, Freeman, Davis, & Associates, 2004). Furthermore, the theoretical concepts and the bases of cognitive therapy remained the same in the adapted versions, which also emphasized the idea that distorted or dysfunctional thinking influences one's mood and behavior (Scott, Williams, & Beck, 1989; Freeman & Dattilio, 1992; Freeman, Schrodtt, Gilson, & Ludgate, 1993; Beck, Freeman, Davis, & Associates, 2004).

A historical overview of the field would provide a rich appreciation for the various manifestations of cognitive behavior therapy that were formulated through cognitive therapy. A few of the important contributors are Albert Ellis' rational-emotive therapy, Donald Meichenbaum's cognitive behavioral modification, and Arnold Lazarus' multimodal therapy. Although it may be very interesting and informative, elaborating any further on the historical heritage is beyond the purpose and scope of this paper.

The various cognitive therapy protocols were applied to many forms of psychopathology other than depression and have been extensively tested (Beck, J., 1995). The empirical data from each study supported the efficacy of cognitive therapy when

working with mood disorders, anxiety disorders, personality disorders, eating disorders, substance abuse, obsessive-compulsive disorder, chronic pain, hypochondriasis and couples' problems (Beck, J., 1995). More recently there has been empirical data supporting the efficacy of cognitive therapy when treating individuals with symptoms of anger (DiGiuseppe & Tafrate, 2001; DiGiuseppe & Tafrate, 2003; Taylor, Novaco, Gillmer, Robertson, & Thorne, 2005).

As previously stated, the basis of Beck's cognitive model is that distorted or dysfunctional thinking influences one's mood and behavior. Beck theorized that one's view of the world is subjective. "Events processed verbally or pictorially in the mind (cognitions), influence affect, and behavior" (Beck, 1976). The original theory further postulated that one's cognitions arose from underlying assumptions and beliefs that were developed from previous world experiences. In addition, perception and experience are active processes including both intraspective and introspective activity (Beck, Rush, Shaw, & Emery, 1979). Moreover, a person's cognitions are an integration of internal and external stimuli. The cognitive process assists in appraising situations as well as formulating the stream of consciousness including the past, present and future view of self, others, and the world. Furthermore, when the content of underlying cognitive structures is changed, it affects the person's emotions and behaviors. Therefore, cognitive therapy aids the awareness of cognitive distortions and the correction of faulty cognitive constructs by guiding a path towards clinical improvement (Beck, Rush, Shaw, & Emery, 1979).

Beck's cognitive model was further developed in the late nineties to incorporate the research and clinical information of the past two decades and to include concepts

extrapolated from his original work and from Popper's theory of development (Popper, 1959; Alford & Beck, 1997). The following section will briefly outline Beck's updated theoretical assumptions of cognitive therapy.

The cognitive model theorizes that various cognitions reside within schemas which are categorically and hierarchically organized, relating to a central theme involving the self, the world or the future (Beck, 1999). Moreover, schemas are important because they direct behaviors, emotions, and aid in providing meaning to the world (Beck, Rush, Shaw, & Emery, 1979). The deepest and most central type of cognition is the core belief which represents the meaning of the schema (Needleman, 1999). In addition, beliefs reside in the schema and communicate its cognitive content (Beck, Rush, Shaw, & Emery, 1979). Less significant derivatives of core beliefs are intermediate beliefs and automatic thoughts (Needleman, 1999). Intermediate beliefs are conditional assumptions, implicit rules, and central goals that a person formulates, whereas automatic thoughts are cognitions derived from specific situations (Needleman, 1999).

Schemas are involved in all aspects of thinking, memory, cognitive processing (the collection and interpretation of information), emotions (the generation of feelings), motivation (the creation of wishes and desires), as well as actions and control (Fusco & Freeman, 2004). Self-monitoring, inhibition, or directions of action are examples in the employment of control (Fusco & Freeman, 2004). The information processed cognitively (automatic information processing), activates schemas which are the products of interpretations, predictions, and images (Beck, 1996). These "meaning-making structures of cognition" are often at the level of awareness (Alford, & Beck, 1997). When cognitive schemas are activated, they influence all aspects of information processing (Needleman,

1999). Schemas color one's perceptions, affect, inferences, and also influence recall of information, and shape the formation of new memories (Beck, 1996). Therefore, "cognitive schemas facilitate the process of assigning meaning to one's immediate experience, in addition to understanding [...] relative to the social and physical world, as well as predicting events, and planning behaviors" (Needleman, 1999). Moreover, schemas are the central pathways to psychological functioning (Alford, & Beck, 1997). Schemas, therefore, evolve through development, facilitating one's adaptation to the environment (Alford, & Beck, 1997). Hence, one's psychological state is neither adaptive nor maladaptive in and of itself unless it is assessed in relation to the context or the person's social environment (Alford, & Beck, 1997).

The components of cognition interacts with emotional, behavioral, attentional and memory systems which facilitate the categorization and translation of meaning to each system (Alford & Beck, 1997). Beck defines this process as cognitive content specificity (Alford & Beck, 1997). However, some professionals believe that individuals have a predisposition to certain cognitive vulnerabilities (cognitive distortions), which predispose them to specific syndromes (Beck, Butler, Brown, Dahlsgaard, Newman, & Beck, 2001). This, then, results in psychopathology when maladaptive meaning is constructed in view of self, the environmental context and future (Alford & Beck, 1997).

Some cognitive theorists propose that the meaning one attributes to self, to others, or to the environment activates strategies for adaptation (Alford & Beck, 1997). Meaning is the product of "information processing", an executive functioning skill localized in the frontal parietal portion of the human brain. When humans cognitively engage the brain in processing information, it facilitates the development of perceiving, consolidating,

storing memories, integrating, and accessing information. Information processing occurs at three cognitive levels (Needleman, 1999; Alford & Beck, 1997). Preconscious, the first level, is automatic information processing. The second level, controlled information processing, is at conscience awareness (Needleman, 1999; Alford, & Beck, 1997). The meta-cognitive is the third level.

Automatic information processing occurs rapidly and is outside of awareness, involving highly practiced tasks or habitual thinking that is difficult to interrupt and modify (Needleman, 1999). Processing information automatically requires limited cognitive capacity and can occur parallel to other cognitive processes (Needleman, 1999). Controlled information processing requires effort and awareness, and occurs in a sequential manner. Controlled information is a higher processing level capable of dealing with complex problems or tasks. A significant amount of the cognitive capacity is utilized during controlled information processing, which inhibits its ability to work simultaneously with other cognitive processes. Finally, the meta-cognitive level of processing information is the ability to think about one's thinking and the development of realistic, rational, and adaptive responses to situations (Alford & Beck, 1997). A combination of automatic and controlled processing facilitates psychological functioning (Needleman, 1999). The meta-cognitive process can deactivate a schema; this is important especially if the schema is irrational or dysfunctional (Needleman, 1999).

Finally, Beck theorized that the meaning of self is divided into the public and private levels. The public meaning of self draws sense from objective situations or from an event that reflects minimal implications for the person. However, the private self generalizes meaning from events that associate a level of significance to the self (Alford

& Beck, 1997). Beck further postulated that approximately six images are involved during any interpersonal encounter. Each person reflects multiple combinations of these images during interpersonal relationships. These perceptions maintain friendly or unfriendly behaviors and actions towards each other (Beck, 1999). The six images are as follows: one's image of self; one's image of the other person; one's projected image (one's perception of how the other person views him or her); the other person's image of self; the other person's image of the other; and the other person's projected social image (how the other person imagines one views him or her).

Beliefs and assumptions influence a person's perception of every encounter and situation. However, some perceptions are biased due to cognitive distortions. Nevertheless, if a person's perception of a situation presents a degree of risk or threat to self, then the individual will quickly assess the degree of threat and the capacity for positively handling the situation positively. Therefore, a person feeling anxious believes that his or her level of self-efficacy and ability to cope is less than what is needed to get safely through the situation safely. However, feelings of anger occur with beliefs that one can ward off the offender without sustaining unacceptable damage to self (Beck, 1999). A list of cognitive distortions and definitions are provided in chapter two under *descriptions of measures*.

Individuals readily react to the encounters of crass behaviors, such as being dominated, controlled, rejected, criticized, devalued, or abandoned. Whether the display is obvious or concealed, people learn to be astute to crass behaviors in order to defend their interests and maintain a sense of well being. A person's experience of psychological pain occurs when there is a perception about being insulted. This belief prompts the

individual to address the issue at hand. If the person quickly experiences some anger, then the issue may be addressed by attacking the perpetrator instead of trying to clarify his or her intentions. In this case, the manifestation of psychological pain occurred in reaction to the person's perception of a lowered projected social image (the image one assumes that others have of him or her). Even though a counterattack might improve and restore the person's image and self-esteem and also potentially equalize the balance of power in the relationship, it would not necessarily resolve the interpersonal problem. Beck's theory posits the idea that an insecure self-esteem perpetuates one's anger behaviors such as easily "flying off the handle" or having a "short fuse". This hypersensitivity manifests from having core images of the self as weak, vulnerable, and impressionable. Therefore, a person develops ways to protect the self from being a recipient of offensive behaviors by being watchful for potential intrusions on personal interests, in addition to quickly perceiving "opponents as wrong or bad". Sufficient strength to the psychological defenses may be sufficient to prevent damage to one's concept of self. However, a person's reaction to offensive information or behavior depends on whether or not the exchange was processed personally and the level of significance that the offensive acts have, relative to self-esteem issues. Furthermore, there is a general pattern in which people react in anger; this is known as Beck's anger sequence. It can be described as experiencing initial feelings of loss or fear that cultivates feelings of distress from the perpetrator. At this point one shifts the focus of blame to the offender, which leads to feelings of aroused anger in the person. Moreover, the collective image of being insulted, opposed, and threatened by another nation or between gangs or organizations is similar to the reaction of one individual to another (Beck, 1999).

Most people's behaviors are guided by social rules and standards that provide a context for interpersonal actions and beliefs about acting fairly and reasonably. People use these rules to determine if others behave in a favorable or unfavorable way toward them. Therefore a person interpreting another's actions or behavior toward self as favorable results in the person's feeling good, whereas an interpretation of one's self being unfavorable results in feeling hurt and often angry. Hence anger is provoked by thoughts about the implicit rules that were not followed such as thinking that the situation should not have happened. Furthermore, in response to a social encounter a person may emotionally experience distressing feelings and cognitively assess the information as wrong which facilitates anger and alerts an attack. This is known as Beck's hostility sequence (Beck, 1999). Therefore, a hostile behavior was provoked by anger and the anger was impelled by destructive interpersonal behaviors coupled with cognitive distortions. Faulty cognitions and inaccurate attributions create the vicious cycle exacerbating anger and aggression which leads to more anger and aggression. This concept is applicable to minor interpersonal arguments as well as to domestic violence, rape, prejudice, war and genocide (Beck, 1999).

Aside from having faulty cognitions and inaccurate attributions, individuals may exercise superficial thinking or heuristics to aid in the formulation of an important decision. This type of decision making is a less taxing mental shortcut, aiding the brain to make decisions quickly (Sternberg, 1999). However, it is more frequently to errors in judgment based on emotional reasoning, conditioning, and congruent information that matches one's schemas (Sternberg, 1999). In addition, logical deductive reasoning and

abstract forms of reasoning are other methods utilized in formulating a decision without past influences, experiences, and conditioning (Sternberg, 1999).

Related Research

Defining Anger

Professionals are not united in defining anger, hostility, and aggression (Martin, Watson, & Wan, 2000). Moreover, they frequently use these concepts interchangeably (Martin, Watson, & Wan, 2000). Some called anger, hostility, and aggression the “AHA” phenomenon which recognized anger being at the core of the triad (Speilberger, Reheiser, & Sydeman, 1995). Others summarized this triad as the “ABC” structure of trait anger that symbolizes “A” being angry affect; “B” as behavioral aggression; and “C” representing cynical cognitions (Martin, Watson, & Wan, 2000). However, anger is an affective or emotional state, which ranges from mild irritation to intense fury and rage. Aggression is the behavior intended to cause personal harm or destroy objects and property. Furthermore, hostility is related to anger and aggression by a complex set of attitudes and judgments that motivated aggressive behavior (Spielberg, Jacobs, Russell, & Crane, 1983). This study will define anger according to Kassinove and Sukhodolsky (1995) definition of anger: “Anger is a negative, phenomenological or internal feeling state associated with specific cognitive and perceptual distortions and deficiencies such as misappraisal, logical errors, and attributions of blame, injustice, preventability, and/or intentionality, as well as subjective labeling, physiological changes, and action to engage is socially constructed and reinforced organized behavioral scripts (p. 7).” This definition is consistent with prior studies that utilized the MAD-AS to assess anger (Martin, 2002; Yurica, 2002; Mahan, 2001).

Prevalence

There is a lack of empirical research regarding the prevalence of anger for both the clinical and non-clinical populations (Anderson, 2006). Other than Intermittent Explosive Disorder (IED), no other form of anger disorder has been listed in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR, 2000). The essential features of this disorder include discrete episodes in the failure to resist aggressive impulses that result in serious assaultive acts or destruction of property. Furthermore, the degree of aggressiveness expressed during an episode is grossly out of proportion to any provocation or precipitation of psychosocial stressor. “Reliable information” regarding the prevalence of IED is “lacking” but the DSM-IV-TR reported that the disorder is rare (DSM-IV-TR, 2000). However, a national survey determining the prevalence of IED was conducted by Harvard Medical School and the University of Michigan between the years of 2001 and 2003. After interviewing a large sample (n=9282) of non-clinical adults from the US, the results indicated that IED was a fairly common disorder which has lifetime prevalence between 5.4% to 7.3% and twelve-month prevalence between 2.7% to 3.9% (Kessler, Coccaro, Fava, Jaeger, Jin, & Walters, 2006). These rates are equivalent to approximately 11.5 million to 16.0 million lifetime cases and 5.9 million to 8.5 million cases in a twelve-month period in the United States (Kessler, Coccaro, Fava, Jaeger, Jin, & Walters, 2006). Since 1995, the Scripps Research Center at Ohio University has been tracking the levels of resentment and anger people feel toward the federal government since 1995. Current data obtained from a sample of 1,010 adults residing in the United States indicated that 54 percent of the sample was “personally more angry” at the government and 77 percent from the same group reported

that their friends and acquaintances recently have become “angrier with the government” (Hargrove & Stempel, 2006). The results of this survey were consistent with data from another survey examining variables contributing to the overall anger and anxiety among people living in America (PR Newswire Associates, 2007). Results obtained from a sample of working Americans with or without college education indicated that 70% to 80% of both groups felt angry and anxious with the government for not taking action to “rein in greedy and unethical behaviors” conducted by powerful corporations and the chief executive officers (PR Newswire Associates, 2007). Furthermore, 85% of all respondents reported that they wanted the government to take action in helping reduce the struggle of families with their rising costs, eroding benefits, and stagnant wages (PR Newswire Associates, 2007).

The U.S. Department of Justice gathers criminal records and related information for research and national surveys. This enhances accessibility when assessing the prevalence of violent criminal acts compared with determining solely the overall prevalence of anger (Tsytsarer & Grodnitsky, 1995). Some professionals have stressed the need to better understand the relationship between anger and aggression before categorizing criminal acts as unresolved anger (Kassinove & Sukhodolsky, 1995). Although crime may often involve anger and aggression, not all aggressive acts are criminal in nature. Furthermore, one does not have to be angry to engage in violent acts; this may be seen in individuals such as professional “hit men” who are paid to kill (Tsytsarer & Grodnitsky, 1995).

The national surveys which were previously discussed found high percentages of the sample population who reported feeling and expressing anger. However, the overall

prevalence of anger (individual and social levels) is significantly underestimated and only a portion of the estimated total was represented in those surveys. A more representative or accurate sample will need to include some of the following factors: 1) estimates of the prevalence of anger in criminal justice samples. 2) Estimates of unreported crimes or cases outside the criminal justice system such as those followed by various social service agencies. 3) Accounts of the cases in which charges were dropped as part of a plea bargain. 4) Accounts of the adults seen by their primary care physician for health problems secondary to stress and anger and have not participated in any national survey regarding anger. 5) Accounts of the adult cases which have not been part of in any national survey about anger but involve adult cases handled by psychologists, social workers, and counselors providing treatments for mood disorders, anxiety disorders, conduct/behavior problems, eating disorders with underlying anger issues (Bureau of Justice, 2005; Moore, Crumpton-Franey, & Geffner, 2004). Unfortunately, no study to date has found fully effective research methods or a system for integrating these factors that have been cited to obtain more accurate prevalence rates of angry, aggressive, and violent cognitions and behaviors among adults.

Anger at the Individual Level

The Mental Health Foundation (MHF) conducted a survey in the year 2008 on anger. The results indicated that one in four people indicate that they are worried about how angry they sometimes feel, and a third of the same sample reported having a close friend or a family member who has trouble controlling his or her anger (MHF, 2008). Not all individuals sharing similar situations experience anger with the same frequency or intensity (Aquino, Douglas, & Martinko, 2004). Therefore, to say that people vary in

levels of tolerance is a major understatement. There are people who are able to laugh off or take in good stride abrasive comments or behaviors that would easily set another to “fly off the handle” in a fit of anger. The following section will explore some of the popular theories which may describe some factors enhancing a person’s proneness to anger.

Neurobiology of Anger

It is imperative to be cognizant that the mind and body are not separate entities and “each influences the other” (Kolb, & Whishaw, 1999). Therefore, knowing the possible constructs in healthy brain activity will provide a baseline or frame of reference when working with those having neurobiological brain alterations secondary to cumulative stressful life events or trauma.

Any change in the central nervous system can change one’s personality, and impair mobility, perception, language, and memory (Kolb & Whishaw, 1999). Neuropsychological testing focused on the brain’s executive functions has been consistent with clinical and neuroimaging studies (Siever, 2008; Spinella, 2007). A significant number of individuals sustaining a brain injury or diagnosed with a neurological illness manifest extreme emotional reactions and prefrontal dysfunction (e.g., executive functioning deficits; disinhibition) (Spinella, 2007). However, a healthy brain’s prefrontal system varies in degree of adaptability when regulating emotions based on various neurobiological and psychological factors during one’s life (Siever, 2008; Spinella, 2007).

Neuroimaging studies have indicated that the prefrontal system in the brain plays a significant role in the regulation of emotions observed in both clinical and non-clinical

populations (Siever, 2008; Spinella, 2007). It has been documented that individuals sustaining a traumatic brain injury, especially at the prefrontal anterior temporal structures of the brain, experience changes in emotional state and personality (Lezak, Howieson, & Loring, 2004; Max, Robertson, & Lansing, 2001). In addition, stroke victims with frontal-lenticulocapsular pontine lesions demonstrated dyscontrol of anger and aggression as well as motor dysfunction and dysarthria (Kim, Choi, Kwon, & Seo 2002). Nevertheless, some researchers believe that impulsive anger and aggressive behaviors are secondary to the brain's having a faulty emotion regulation system (Davidson, Putnam, Larson, & 2000). It has been proposed that people with anger related problems possibly have dysfunctional neural components in the brain's emotion regulation system (Davidson, Abercrombie, Nitschke, & Putnam, 1999). The significant neural components of this system are the prefrontal cortex, anterior cingulate, parietal cortex, and the amygdale (Davidson, Abercrombie, Nitschke, & Putnam, 1999).

An important role of the prefrontal systems appears in the cognitive appraisal of situations, interpretations, and labeling of emotions (Spinella, 2007). Literature relative to this area has indicated that the left-prefrontal cortical activity was associated with positive affect, or approach motivation, and that right-prefrontal cortical activity is associated with negative affect, or withdrawal motivation (Harmon-Jones & Sigelman, 2001; Kolb & Whishaw, 1999). Research has demonstrated the activation of the amygdale when participants matched emotional tones to facial expressions (Hariri, Bookheimer, & Mazziotta, 2000). However, when participants verbally labeled the same expression, the area in the brain activated was the right prefrontal cortex with diminished activation in the amygdala (Hariri, Bookheimer, & Mazziotta, 2000). Furthermore, one's

emotional evaluation of self appeared to be the input of the right prefrontal cortex (Lezak, Howieson, & Loring, 2004; Spinella, 2007). Research has demonstrated that the right dorsomedial prefrontal cortex was activated when participants determined whether positive or negative personality traits describe them (Fossati, Hevenor, Graham, Grady, Keightley, & Craik, 2003). The data further indicated that positive traits caused a strong activation in this area (Fossati, Hevenor, Graham, Grady, Keightley, & Craik, 2003). However others reported that when people are judging whether or not a trait was generally desirable, then the lateral prefrontal cortex of the brain was activated (Spinella, 2007). Other research has demonstrated that trait anger, a negative, but an approach related emotion was associated with increased left prefrontal activity and decreased right prefrontal activity (Harmon-Jones & Sigelman, 2001). This research suggested that the prefrontal asymmetrical activity was associated with motivational direction and not emotional valence (Harmon-Jones & Sigelman, 2001).

Some researchers have postulated that the activation of the right prefrontal cortex aids in the utilization of meta-cognitive strategies to regulate emotions (Paquette, Levesque, Mensour, Leroux, Beaudoin, & Bourgouin, 2003). Furthermore, the literature has documented that mood disorders, anxiety disorders, and personality disorders have been attributed to aberrant activity in prefrontal subcortical- limbic circuits in the brain (Sheline, 2003; Bassarath, 2001; Kolb, & Whishaw, 1999). Therefore, any person with a brain abnormality secondary to genetic defects, trauma or health problems are more neurologically at risk for sustaining emotional problems such as anger, depression, anxiety disorders, and changes in personality. According to the research, the specific problem that is manifested depends on the place where the trauma was lateralized in the

brain and the degree of severity in the brain that was injured (Siever, 2008; Kolb & Whishaw, 1999).

Personal Characteristics Perpetuating Anger

In addition to one's brain having a neurobiological predisposition to anger, current research explores how personality shapes the person's style in cognitively processing information which facilitates differences in anger arousal and reactive aggression (Wilkowski & Robinson, 2008).

Another factor that enhances the arousal of anger expression in a person is a low belief about self. Individuals with a secure, healthy and positive regard for themselves are less likely to engage in cognitive errors to improve their self-esteem (Kenrick, Neuberg, & Cialdini, 2002). The desire for positive self-regard is needed for at least two reasons: first, with positive self-regard comes the belief that one is effective and able to accomplish personal goals (Bandura, 1977). A person with such beliefs helps assemble the energy needed to achieve (Bandura, 1977). From this perspective, positive self regard drives a person toward success (Kenrick, Neuberg, & Cialdini, 2002). Second, positive self-regard indicates the ability by which one manages socially. When self regard is low, one would likely try to enhance it in order to reduce feeling anxious. A person's thoughts, perceptions, and attributes towards the social world influence one's behavior towards that world (Kendrick, Neuberg, & Cialdini, 2002). More importantly, the cognitive process such as attention, interpretation, judgment, and memory are influenced by core beliefs which at times may facilitate cognitive distortions and dysfunctional attitudes while processing information (Beck, 1999). Moreover, distorted thinking is associated with a negative emotional state and those engaged in greater distorted thinking are more prone

to experiencing anger (Beck, 1999). Therefore, cognitive errors or dysfunctional attitudes may arise to aid one in an effort to enhance and protect the self-image (Beck, 1999; Kenrick, Neuberg, & Cialdini, 2002).

Recent research has examined trajectories of depressive symptoms, self-esteem, and anger in the critical years of emerging adulthood (Galambos, Barker, & Krahn, 2006). Participants (n=920) were a sample of twelfth graders (18 years) from a school-based community. More than 90% of the participants remained in this longitudinal study of school-work transition and youth-adult transition. The data indicated that when social support was higher, self-esteem was also higher, and depressive symptoms and expression of anger were lower. This indicated that during emerging adulthood, losses in social support are connected with a shift towards lower psychological well-being (Galambos, Barker, & Krahn, 2006). Nevertheless, emerging adulthood was not a positive experience for everyone, because there was great inter-individual variability in intra-individual change. Depressive symptoms, anger expressions, and low self-esteem were reactions to difficult life transitions for many of the participants from a lower socioeconomic background, and from those experiencing losses in social support or employment (Galambos, Barker, & Krahn, 2006). Furthermore, the effects of chronic physical pain, or other physically unpleasant conditions involving social stress and aversive conditions were found to be significant triggers in anger expression (Berkowitz & Harmon-Jones, 2004).

There are people who feel justified in using anger to get what they want. Some of these individuals may have a narcissistic personality style. Research has not confirmed whether or not anger associated with narcissism results from low self-esteem and self-

efficacy or high self-esteem and self-efficacy (DiGiuseppe & Tafrate, 2001). According to the DSM-IV-TR, narcissistic individuals have a “grandiose sense of self-importance; are preoccupied with unlimited success, power, brilliance, beauty, or ideal love; have beliefs about being special, unique, or understood by other special or high-status people or institutions associated with them; and have a sense of entitlement”(DSM-IV-TR, 2000). However, some believe that not all narcissists have high, unstable self-esteem (DiGiuseppe & Tafrate, 2001). One theory proposes that anger associated with narcissism is a defensive reaction to a low opinion of self (Kohut, 1978). However, a narcissist’s anger in reaction to high self-esteem “reflects anger’s defensive function against depression” (DiGiuseppe & Tafrate, 2001).

People’s attribution style and appraisals of a situation are believed to be individual factors that instigate anger arousal (Berkowitz & Harmon-Jones, 2004; Carmony & DiGiuseppe, 2003). An argument that proposed the idea anger is differentiated from depression suggests that those who were angry attributed blame to others more often than individuals who were depressed (Averill, 1983). The literature has demonstrated strong theoretical consensus and substantial empirical support for the appraisal theory, which accounts for the experience of anger as stemming from one encountering an unpleasant event which results in the possible restriction of a personal goal and having the perception that it was perpetrated by another person (Brown, Hammen, Craske, & Wickens, 1995; Beck, 1999; Ellsworth & Tong, 2006; Barclay, Skarlicki, & Pugh, 2005; Carmony & DiGiuseppe, 2003). Perceiving another is at fault or blame for the bad situation is a key factor in the appraisal theory (Lazarus, 2001). To support this theory is another study was conducted, which exposed the research

participants to negative events with ambiguous causes (Neumann, 2000). Participants demonstrating patterns of external attributions tended to react to the scenarios with anger, but those who typically had an internal attribution style most frequently experience guilt (Neumann, 2000). Other appraisals for the component of anger were the perception of unfairness, a sense of control, and the belief that harm was intentional (Beck, 1999).

Social interpersonal exchanges provided the setting during which a situation or event occurred, provoking anger in many people (Aquino, Douglas, & Martinko, 2004). Research explored possible effects of individual and contextual variables in a sample of municipal employees (n=158). Results showed a relationship between the participants' perceptions of direct victimization and overt anger. In addition, higher levels of anger resulted when participants had a higher hostile attribution style and perceived the organizational norms as more oppositional (Aquino, Douglas, & Martinko, 2004).

The literature filters down further possibilities such as a personality traits that cause certain individuals to react more readily to anger (Parrott, Zeichner, & Evces, 2005). "Traits refer to long standing personality characteristics that endures over time and situations where as state refers to potentially short lived conditions usually emotional in nature" (Millon & Davis, et al., 2000, p. 80). Therefore, trait anger is conceptualized as an enduring disposition which is experienced more frequently, more intensely, and for longer periods (Deffenbacher, 1996). Individuals high in trait anger are quick to detect aggression, threats, and danger in the world around them (Berkowitz, 1993 p. 134). Beyond innate anger traits, evidence supports the fact that these individuals show biases in cognitively processing stimuli as anger relevant (Parrott, Zichner, & Evces, 2005).

The last variable in this study that is associated with facilitation of anger response in persons pertains to more general mental health issues such as clinical disorder (e.g., depression) and personality disorders (Painuly, Sharan, & Mattoo, 2005; Blatt, Quinlan, Pilkonis, & Shea, 1995). The literature and research cited evidence linking anger with depression (Painuly, Sharan, & Mattoo, 2005). This relationship helped to bring anger into the DSM-IV-TR under “atypical features specifier” for the Mood Disorders (Painuly, Sharan, & Mattoo, 2005). However, there is no mention of the word “anger” per se, but a description of the behavior is outlined stating “...pathological sensitivity to perceived interpersonal rejection is a trait that has an early onset and persists throughout most of adult life. Rejection sensitivity occurs both when the person is and is not depressed, though it may be exacerbated during depressive periods. The problems that result from rejection sensitivity must be significant enough to result in functional impairment. There may be stormy relationships with frequent disruptions and an inability to sustain a longer-lasting relationship. The individual’s reaction to rebuff or criticism may be manifested by leaving work early, using substances excessively, or displaying other clinically significant maladaptive behavior responses. There may also be avoidance of relationships due to interpersonal rejection...p. 421” (DSM-IV-TR, 2000).

Anger at the Social Level

The social conditions and inequalities shape the propensity to experience negative emotions (Marx [1852], 1983). Hostile and strange outcomes were the product of the production of organizational systems, and the estrangement of labor. Furthermore, the poorly educated and those at the “bottom of society” experience significant burdens, hardship, barriers to achievement, inequality, victimization, and exploitation (Berowitz &

Harmon-Jones, 2004; Miriwsky & Ross, 1989:95). As mentioned previously, working Americans with or without a college education reported feeling anxious and angry with the government for not taking action in reducing the struggles with rising costs, eroding benefits, and stagnant wages (PR Newswire Associates, 2007). Therefore, anger appears to be a common emotion that people feel under such stressful social conditions. Research explored participants' (n= 1,442) perceptions and evaluations about their personal and social conditions via a survey (Schieman, 2003). The results indicated that inequality, disadvantages, threats to identity, low education, and worsening economic conditions are associated with anger expressions (Schieman, 2003). Furthermore, it is understandable "for people of all ages experiencing deterioration of financial circumstances can frustrate one's achievement in pertinent daily goals such as the attainment of basic needs like food, clothing, consistent shelter, and medical care" (Schieman, 2003).

Secondary Issues to Chronic Anger Arousal

Individual problems secondary to anger infiltrate to the societal level and vice versa. Both the perpetrator and recipient of anger both are at risk for anger related problems such as poor health, motor vehicle accidents, limited social support from friends and acquaintances, fractured relationships, physical and emotional abuse, domestic violence, and crime. The following section will attempt to address, briefly, the salient research and findings regarding health consequences secondary to anger.

Health Related Problems

"Emotions motivate behavior and have a significant impact on physical health and psychological well being" (Spielberger, 2006). A current study reports that trait anger has a negative impact on physical, social, and psychological health variables (Wilkowski &

Robinson, 2008). Medical researchers found a positive correlation between anger, anxiety, and depression with coronary heart disease (Tennant, & McLean, 2001). Another study indicated anger-prone individuals diagnosed with coronary heart disease are in potential danger because of the physiological responses that anger evokes within the body (Futterman, & Lemberg, 2002). Further research indicates a strong relationship between one's level of negative affect and increased risk of physical illness (Neeleman, Ormel, & Bijl, 2001). Individuals experiencing high levels of negative affect such as anger had more colds after the administration of the rhino virus, compared with the control group with low levels of negative affect (Cohen, 1995). Other aversive affects due to high levels of anger arousal are ventricular arrhythmias (Lampert, Joska, Burg, Batsford, McPherson, & Jain, 2002) and increased heart rate secondary to stress (Rhodes, Harrison, & Demaree, 2002). Some theorize prolonged anger facilitates physical diseases when encountering chronic psychological distress such as job burnout, which perpetuates persistent physiological arousal and biological changes within the body (Selye, 1976; Lovallo, 1997). Several studies reported such cumulative effects of anger and stress as hypertension (Schum, Jorgensen, Verhaeghen, Sauro, & Thibodeau, 2003; Cottington, Matthews, Talbott, & Kuller, 1986) and high level of triglycerides (Finney, Stoney, & Engebretson, 2002) manifesting within the human body.

Reports of individuals experiencing migraine headaches and also being prone to aggressive and hostile behavior, suggested that anger-related coping was closely associated with self-reports of pain and headaches (Cao, Zhang, Wang, Wang, & Wang, 2002). However, researchers postulated that pain adversely impacts mood rather than negative mood being a predisposing factor in the development of chronic pain (Gaskin,

Greene, Robinson, & Geisser, 1992). Individuals who experience chronic anger reported a low tolerance and threshold for pain (Janssen, Spinhoven, & Brosschot, 2001).

Consistent with this view, hostility and poor coping or management of anger contributes to the exacerbation of persistent lower back pain (Burns, 1997).

Although some studies report various health-related problems associated with excessive anger expression, an opposing view reports that inhibiting the expression of emotion such as anger can lead to impaired immune system function and poorer health on a variety of indices (Greenberg, 2008).

Road Rage

Relative to other common daily activities and emotions, anger was more likely to occur while driving (Parkinson, 2001). A byproduct of anger most frequently reported is road rage (Deffenbacher, Lynch, Oetting, & Swaim, 2002). Verbal discord or physically aggressive mannerisms are the angry behaviors of road rage (Deffenbacher, Lynch, Oetting, & Swaim, 2002). One study surveyed a group of drivers (Smart, Mann, & Stoduto, 2003), and reported that 50% were yelled at, cursed at, or had rude hand gestures directed at them within the previous year (Smart, Mann, & Stoduto, 2003). Approximately 7% of these individuals reported being threatened with personal injury or having experienced damage to their vehicles (Smart, Mann, & Stoduto, 2003). In addition, nearly one-third of the respondents disclosed engaging in cursing or shouting at someone while driving (Smart, Mann, & Stoduto, 2003).

Interpersonal Problems

Anger can motivate forms of communication that help individuals solve interpersonal problems, realize objectives in group contexts, and ward off interpersonal

threats (Schieman, 2003; Jenkins & Oatley, 1996). However, individuals who over-express or suppress anger, or experience it too frequently, too intensely, or for too long, may be at greater risk for disturbed interpersonal relationships (Schieman, 2003). Harsh interpersonal behaviors and cognitive distortions provoke anger and elicit hostile behavior (Beck, 1999). Although anger is potentially an adaptive reaction, it becomes maladaptive when one frequently exaggerates the magnitude of the offense (Beck, 1999).

The differences between individuals prone to anger and people not having this disposition was studied (Lench, 2004). Participants' levels of anger were measured through the State-Trait Anger Inventory (STAXI). The participants without an angry disposition were a sample (n= 115) of undergraduate students (Lench, 2004). The participants prone to anger were 66 individuals referred by the court for anger management treatment. The data from the STAXI confirmed higher anger classification for the group of individuals with anger issues, compared with the group of college undergraduates (Lench, 2004). The results indicated the relationships of the anger management group were filled with verbal and physical conflict. Further results reported that this group had more friendships disrupted or destroyed by anger conflicts (Lench, 2004). Also, the social and romantic relationships of the anger management group demonstrated differences that were dysfunctional compared with the college undergraduate group (Lench, 2004).

A more recent study examined the relationship and the change in marital adjustment over 18 months in 122 married couples (Baron, Smith, Butler, & Nealy-Moore, 2007). In prospective analyses, wives' but not the husbands' hostility and anger were related to change in marital adjustment. Another study reported anger as being an

important factor in occupational maladjustment, family conflict, and criminal behavior (Turner, Russell, Glover, & Hutto, 2007). This study examined early factors and recent antecedent factors that facilitate anger proneness in social, family and work relationships (Turner, Russell, Glover, & Hutto, 2007). Prior exposure to violent events, prior exposure to social stress, and certain personal attributes were found to be significant antecedents of both of hostility and of short-tempered forms of anger (Turner, Russell, Glover, & Hutto, 2007). However, the data demonstrated a decrease in the level of anger with increasing socioeconomic status (Turner, Russell, Glover, & Hutto, 2007). Furthermore, anger expression is related to the relative social power and rank in the relationships in which it occurs (as cited in Gilbert, Irons, Olsen, Gilbert, & McEwan, 2006).

Scientist researched the effects of anger at a high intensity level and high frequency rate and its possible relationship to the arrangements and conditions reflected in the social roles of spouses, parents, and workers (Schieman, 2003). The data indicated that some participants holding many roles were engaged in more activities that stressed a high level of responsibilities; these increase a striving for desired outcomes (Schieman, 2003). Thus the participants believed that their anger was justified, legitimate, and appropriate in response to an insult or in response to their perception of “the way things should be” (Schieman, 2003). Nevertheless, anger can affirm one’s sense of power, communicate disagreement, and inspire modification in social conditions (Keltner & Haidt, 2001).

Criminal Behavior Secondary to Anger

“Human aggression and violence are unfortunate realities that adds substantial costs to our society” (Siever, 2008). The National Crime Victimization Survey (NCVS)

annually conducts surveys of households that experienced violent crimes. The NCVS interviewed about 134,000 persons in 77, 2000 households. Reports of violent crimes included such events as rape, sexual assault, robbery, aggressive assault, and simple assault. Property crimes consisted of burglary, motor vehicle theft, and property theft. The data further included estimates on households that experience vandalism and intimate partner violence. In 2005 about 16 million of the 117.1 million U.S. households experienced one or more violent or property victimization. Approximately 1 in 320 households was affected by intimate partner violence. Most hate crimes described by victims involved rape, sexual assault, physical assault, or robbery (84%). The remaining 16% were associated with property crimes including burglary or theft. There were no significant differences in rates of hate crime vulnerability for racial or ethnic groups.

When anger exceeds inhibitions, aggression is expressed behaviorally (Driscoll, Zinkivskay, Evans, & Campbell, 2006). Empirical evidence points to the central role of poor inhibition or high impulsivity in accounting for aggression (Driscoll, Zinkivskay, Evans, & Campbell, 2006). Evidence from criminological studies also implicated poor impulse control. A meta-analytic review concluded that executive dysfunction shows a very strong relationship with both criminality, $d = .94$, and delinquency, $d = .78$ (Morgan & Lilienfeld, 2000). However, another study reported that antisocial behavior results from low self control in interaction with criminal opportunity (Gottfredson & Hirchi, 1990). Poor self-control is conceptualized as a combination of impulsivity, risk seeking, present orientation, temper, and carelessness, and is measured with psychometric instruments (Gottfredson & Hirchi, 1990).

The Relationship between Anger and Depression

Research provides evidence to support more frequent occurrences of anger, irritability and hostility in depressed patients, compared with healthy controls (Painuly, Sharan, & Mattoo, 2005; Carmony & DiGiuseppe, 2003). Anger attacks have been proposed as a specific form of anger in depression (Painuly, Sharan, & Mattoo, 2005).

Some researchers suggested that irritability and anger may be broader indicators of depression (Dan, Crone, Wise, Martin, Ramsey, Magee, Sjogren, Ong, & Younossi, 2007). Others characterize the depressive anger as “a rapid onset of intense anger and a crescendo of automatic arousal which occurs in response to trivial provocation” (Painuly, Sharan, & Mattoo, 2005). However, the DSM-IV reports depressive anger as a depressive episode with atypical features with a diagnostic subcategory in which hypersensitivity to rejection is a central aspect. Some studies report that anger was found more frequently with individuals having bipolar depression than in those with unipolar depression, yet other studies found a relationship between anger and the severity of depression (Painuly, Sharan, & Mattoo, 2005). Nevertheless, both anger and depression have been traced to similar cognitive deficits (Beck, 1999; Oliver & Baumgart, 1985; Navaco, 1977).

Treatment of Anger

The judicial system continues to identify an increasing number of people referred for anger management despite limited treatment guidelines and diagnostic taxonomy as in the DSM-IV-TR (Lench, 2004). However, some experts in the area of anger are concerned with the recent growth of anger treatment groups because many of these treatment programs fail to use empirically supported interventions, or those with little or no therapeutic utility, or those which fail to make an enduring impact on clients

(DiGiuseppe & Tafrate, 2003). These authors have questioned the effectiveness of anger treatments and interventions or techniques (DiGiuseppe & Tafrate, 2003). Therefore they conducted a meta-analysis in quest for a solution (DiGiuseppe & Tafrate, 2003).

DiGiuseppe and Tafrate (2003) discovered that some studies neglected the importance of methodological issues that contributed to an incomplete understanding of treatment effectiveness (Beck & Fernandez, 1998). The manner of selecting subjects varied among studies as well as a minimal concurrence in the utilization of standardized assessments when documenting participants' progress (DiGiuseppe & Tafrate, 2003). The 57 studies utilized for research had the following factors: fifty of these studies compared at least one treatment to a control condition; seven studies evaluated only within-group treatment with pre- to post-treatment measures, and eighteen of the between-group studies included follow up data but none was provided by the within-group studies (DiGiuseppe & Tafrate, 2003). Furthermore, a significant amount of research on the treatment of anger that provided empirical evidence in support of the intervention or theory was from the behavioral, cognitive, or cognitive-behavioral orientation. The treatment of anger was not found for the theoretical orientations of psychodynamic, family systems, gestalt, or client-centered therapy (DiGiuseppe & Tafrate, 2003). Other theoretical orientations that did not adhere to an empirical methodological system when documenting treatment results were not reviewed and were not part of the meta-analysis (DiGiuseppe & Tafrate, 2003).

A comprehensive treatment model was formulated secondary to reviewing the anger-research literature and the meta-analysis results (DiGiuseppe & Tafrate, 2003). The core components included establishing a positive therapeutic alliance while utilizing and

addressing the stages of change model with the client (Thor, 2005). Anger perpetuates bodily tension; therefore, managing the client's physiological arousal was proposed in addition to fostering cognitive change with cognitions concerning blame, unfairness, tendency to be demanding, and suspiciousness. Furthermore, learning and practicing new responses to anger provides clients alternative positive methods to enhance one's ability to cope when feeling angry. Additional components to the anger treatment model addressed the importance of providing relapse prevention and incorporating interventions to manage impulsive behaviors, in addition to facilitating guidance in aiding the patient's ability to forgive (DiGiuseppe & Tafrate, 2001). Because a person frequently directs anger at significant others, considering the social system or context in which anger occurred was a component that was important to incorporate into anger treatment. Furthermore, provisions to assist the client's needs in restitution and in some cases reintegration back to broken relationships are other factors to be considered. It is also essential to guide the client's establishment of new and positive relationships as well as assisting in the establishment of community support (DiGiuseppe & Tafrate, 2001).

Current review of the literature indicates that cognitive-behavioral therapy is the preferred anger management treatment (Wilkowski & Robinson, 2008; Martin & Dahlen, 2007). A clinical case study provided data to supports the Cognitive-Relaxation Coping Skills (CRCS) protocol for treating angry patients (Dahlen, 2007). The CRCS was developed by Deffenbacher and colleagues in 1988. In light of the research within the previous two years, the current trend suggests that the form of cognitive therapy developed by Beck be adapted to better fit the needs and issues of clients with anger

problems (Wilkowski & Robinson, 2008; Thibodeau, Jorgensen, & Jonovich, 2008; Martin & Dahlen, 2007; Dahlen, 2007).

Assessment of Anger

A classic study on anger conducted in the past decade reported that most people experience anger a few times a week and 58 percent of the anger episodes include yelling or screaming (Kassinove, 1995). In light of current changes and problems in our nation, it may be safe to hypothesize that episodes of anger would be more than a few times a week if this study were currently conducted. Individuals who may have the tendency to cognitively process stimuli/information tainted with an obnoxious and personal perception, create the ingredients for brewing the emotion and expression of anger (Wilkowski & Robinson, 2008). Unfortunately, uncontrollable anger leading to aggressive and/or violent behavior costs the nation anywhere from five to ten billion dollars per year in the following expenses: medical, police and court costs, shelters, foster care, sick leave, absenteeism, and unproductive employees (Wyshak, 2000). As stated, anger impacts the nation financially and also significantly affects one's health, and psychological well being (Spielberger, 2006; & Taylor, Novaco, & Oswald, 2005). Therefore if medical professionals provide a health screener such as checking a person's beating heart with a stethoscope, determining body temperature with a thermometer, obtaining blood tests to rule out various diseases, then it is just as important to check and measure one's level of anger. The data reported from various studies citing a positive association between anger, and one physical health hopefully would enhance awareness and consistency in screening every patient's level of anger from health professionals, psychologists and social workers. However, the administration of the proper instrument

when measuring anger should not take an excessive amount of time to complete. In addition, limited financial reimbursement from insurance companies for many medical and psychological tests is the current trend and reality. Any anger assessment tool should be reasonable in cost, in addition to being understandable and not highly complex in the administration and interpretation of this instrument. Of greatest importance, the tool measuring various components of anger should be valid and reliable. The data of this study anticipate the utilization of the Mahan and DiTomasso Anger Scale (MAD-AS) as one of the essential tools in measuring a person's anger. Specific details about this tool as well as the Inventory of Cognitive Distortions (ICD) and the Dysfunctional Attitudes Scale Form A (DAS-A) will be provided in chapter two under descriptions of measures.

Examining the assessment literature revealed “a shortage of valid anger assessment instruments to enhance the researcher's ability to study, understand, and explain the dynamical, non-stationary behavior of a nonlinear phenomenon” (Mudge, 2003). A comprehensive review and history about anger assessments or tools is beyond the scope of this paper. Nevertheless, the following section will provide a small sample of instruments used to assess various forms of anger-related problems. Each tool has its strengths and weakness and one should be aware of this information before its utilization.

Aggression Questionnaire (AQ) is a self-report inventory containing 29 items. Each item is rated on a five point Likert scale, in which one represents “extremely uncharacteristic of me” to five represents “extremely characteristic of me”. The inventory produces four scales such as Physical Aggression, Verbal Aggression, Anger, and Hostility.

The development of this instrument resulted when professionals needed a stable tool and psychometrically sound tool for testing components of hostility and aggression (Buss & Perry, 1992). Although the original *Hostility Inventory* (HI), a two-factor model, was available and useful, the literature indicated that it did not provide a consistent factor structure (Buss & Perry, 1992). Despite the similarities between the AQ and HI, each item from the *Aggression Questionnaire* is analyzed by two additional factors, Physical Aggression and Verbal Aggression. These two new factors along with the Hostility and Aggression subscales contribute in determining further individual differences and vulnerabilities accounting for hostility and aggression.

The *Aggression Questionnaire* has a test-retest reliability of .80 for the total scale score (Buss & Perry, 1992). The test-retest reliability for each subscale is Physical Aggression, .80; Verbal Aggression, .76; Anger, .72; and Hostility, .72 (Buss & Perry, 1992). This instrument's internal consistency for each factor is Physical Aggression, .85; Verbal Aggression, .72; Anger, .83; Hostility, .77; and factors total score, .89 (Buss & Perry, 1992).

Anger Self-Report (ARS) has 64 questions differentiating the awareness and expression level (via Likert scale) of anger and aggression. The instrument was normed from a clinical and non-clinical sample population of psychiatric patients and students (Zelin, Adler, & Myerson, 1972). The ARS provides five scores in the area of Awareness of Anger, Expression of Anger, Guilt, Condemnation of Anger, and Mistrust. However, an additional scale, the Problem Appraisal Scale, was formulated and incorporated into the ARS for the psychiatric sample. Furthermore, the ARS has three additional subscales

(General, Physical, Verbal Anger Expression) incorporated into the Expression of Anger Scale.

The original research conducted on the ARS demonstrated significant differences between the normed samples on all scales except for the Mistrust Scale. In addition, a significant correlation between the scales yielded for convergent and discriminant validities (Zelin, Adler, & Myerson, 1972). Biaggio and Associates' (1981) research reported fair reliability and good predictive validity of the ASR's subscales; however, there was a lack of test-retest reliability and a lack in a significant and positive correlation with social desirability (Biaggio, Supplee, & Curtis, 1981).

Buss-Durkee Hostility Inventory (BDHI) is one of the oldest and most frequently used inventories assessing anger and hostility (Buss & Durkee, 1957). The BDHI has 75 statements presented in a true or false format. This tool generates the attitudinal and motor components for hostility. The attitudinal component comprise of the Resentment and Suspicion subscales and the motor component comprises the Assault, Indirect Hostility, and Irritability subscales.

Research data on the BDHI has been either inconsistent or ambiguous. Some researchers report major problems regarding the instrument's test reliability (Biaggio, Supplee, & Curtis, 1981). Other researchers stated the total BDHI score to be "fairly reliable"; however, the reliability and validity of the subscales are in question (Biaggio & Maiuro, 1985). Furthermore, no evidence was presented on test-retest reliability of this inventory. However, several research studies indicated a high correlation between the BDHI subscales and social desirability (Biaggio, 1980; Heyman, 1977; Leibowitz, 1968; Buss & Durkee, 1957).

The Hostile Interpretations Questionnaire (HIQ) is a recently developed tool measuring hostility and anger (Simourd & Mamuza, 2000). The questionnaire is a 35-item self-report consisting of seven vignettes, each vignette containing five questions. The responses are scored on an adapted 5-point Likert scale. The vignettes depict a diverse range of commonly experienced social situations in which hostility may manifest; these include such areas as Authority-Relationship, Intimate-Relationship, Family-Relationship, Acquaintance-Relationship, Work-Relationship, and Anonymous Relationship. The data yield a score for each area/subtype of hostility as well as a total hostility score. In addition, hostility is further divided into such thinking errors as Overgeneralization, Attributions, Personal Responsibility, Hostile Reaction, and External Blame.

The HIQ, which is in the preliminary stages of validation, was designed to minimize possible responses with intentional manipulation or faking by limiting the degree of transparency of item contents. Nevertheless, HIQ was found having acceptable internal consistency, with most subscales and total scores based on the Cronbach's alpha. Correlations between subscales were modest. Furthermore, the HIQ moderately correlated with the Novasco Anger Scale ($r = .52$) and the Aggression Questionnaire ($r = .64$), thus producing an acceptable construct validity (Simourd & Mamuza, 2000).

Millon Clinical Multiaxial Inventory-III (MCMI-III) contains 325 items written in a true or false format. The inventory assesses both clinical and personality disorders in which anger problems are evaluated. Even though, the MCMI-III has several subscales assessing anger issues and its expression or control, it cannot identify any anger disorders

other than Intermittent Explosive Personality Disorder, for it is the only anger disorder in the DSM-IV-TR (Groth-Marnat, 1997).

The MCMI-III's internal consistency for the clinical scales, range from .66, for the Compulsive scale, to .90 for Major Depression. The statistical power alpha exceeded .80 for twenty of the MCMI-III scales (Millon, Davis, & Millon, 1997). The media stability coefficient of the MCMI-III was .91 (Millon, Davis, & Millon, 1997).

The manual for the MCMI-III specifically states that this inventory is not a general personality instrument to be used with normal populations or for the purposes other than diagnostic screening or clinical assessment. "The normative data and transformation scores for the MCMI-III are based entirely on clinical samples and are applicable only to individuals who evidence problematic emotional and interpersonal symptoms or who are undergoing professional psychotherapy or a psychodiagnostic evaluation" (Millon, Davis, & Millon, 1997). The MCMI-III categorizes symptoms by its prototype, which consists of the most common features or properties of members of a category and thus describes a theoretical ideal or standard against which real people can be evaluated. "No one property is necessary or sufficient for membership in the category, only different approximations or degrees that more closely represents the category" (Millon, Davis, & Millon, 1997). The MCMI-III, a multiaxial instrument, "formulated from the integration of psychopathology and personality models which parallels the multiaxial model of the DSM-IV" (Millon, Davis, & Millon, 1997).

Minnesota Multiphasic Personality Inventory-2 (MMPI-II): This inventory contains 567 items written in a true or false format. A minimum of a sixth grade reading comprehension level is needed for accurately completing the questions. The MMPI-2 was

designed to assess major personality patterns and psychological disorders. In addition, anger is evaluated and categorized under the two content scales of Explosive Behavior and Irritability (Butcher, Graham, Ben-Porath, Tellegen, Dahlstrom, & Kaemmer, 2001). Aside from the MCMI-III, the MMPI-2 cannot indicate any specific anger disorder.

The internal consistency and temporal stability of the MMPI-2 are at a moderate level with values that range from a low of .71 to a high of .84 (Groth & Marnat, 1999). The test-retest reliabilities are at a moderate level, which was calculated for a narrow population over short-term retesting intervals (Groth & Marnat, 1999). Furthermore, the numbers of items that overlap are high, resulting in a high inter-correlation among various scales (Groth & Marnat, 1999).

The MMPI-2 is one of the most widely used instruments in both the clinical and research settings. This tool has over 10,000 published research references and many cite its utility and value (Butcher, Graham, Ben-Porath, Tellegen, Dahlstrom, & Kaemmer, 2001). However, there are several limitations such as using some obsolete diagnostic labels that are not used in the DSM-IV-TR, which perpetuates ineffectiveness when diagnosing either Axis I or Axis II conditions (Groth & Marnat, 1999). Further limitations are the length of the inventory, as well as the technicality of hand scoring and the added cost to obtain computerized scores, data, and report for each protocol.

The Multidimensional Anger Inventory (MAI) has 38 items measuring the dimensions of frequency, intensity, duration, and magnitude of anger as well as its mode of expression, hostile outlook, and range of anger elicited in various situations that may be related specifically for individuals with coronary heart disease (Siegel, 1986). Responses for each statement are rated on a five-point Likert scale.

The MAI's test-retest reliability obtained through the Pearson correlation coefficient was .75 (Siegel, 1986). The internal consistency for all subscales were within the alpha range from .71 to .89, with the exception of the Anger-Out scale in which the alpha was .41. However, this scale consisted of two items (Siegel, 1986).

Novaco Anger Scale was revised and re-titled, *Anger Inventory* (AI), (Novaco, 1975, 1977). This inventory, containing 80 items, are rated on a five-point Likert scale concerning the degree of anger a person would feel with presented situations that may provoke anger (Novaco, 1977). However, this instrument was found to have significantly low test retest reliability coefficient of .17 (Biaggio, Supplee, & Curtis, 1981). These same researchers reported that the original inventory, the *Novaco Anger Scale* (NAS), was not significantly correlated with either the self-ratings of anger provocation or with reactions to imagined or role-played situations, which questions the criterion validity (Biaggio, Supplee, & Curtis, 1981). Furthermore, there is a wide range (mean $r = .24$) between other correlational measures and the NAS (Biaggio, Supplee, & Curtis, 1981).

The format and design of the AI was based on the NAS which was the original anger instrument. However, the NAS contained 90 items (Novaco, 1995). The preliminary study for the NAS was administered to two groups (males & females) of undergraduates, each group containing 138 participants. The data indicated that the internal consistency via Cronbach alpha was .94 for males and .96 for females (Novaco, 1995).

Reaction Inventory (RI) is a 76-item questionnaire developed to identify specific situations that lead to anger (Evans & Strangeland, 1971). The items were selected intuitively and the tool's primary utilization was designed for use in the clinical setting

(Evans & Strangeland, 1971). In administering the test, the examiner would read a scenario to the client followed by an inquiry about the degree of anger elicited via the questionnaire. The degree of anger was recorded through endorsing one of the 5-point Likert-like scale responses ranging from “not at all” to very much” (Evans & Strangeland, 1971). Therefore the goal was to determine the individual situational stimulus that resulted in anger for these people (Evan & Strangeland, 1971). The summations of individual item scores produced a single score which reflected the person’s degree of anger. Therefore, a higher the score would indicate the person had a higher degree of anger (Evan & Strangeland, 1971).

In order to have normative information, data were obtained in a non-clinical population. The RI was, therefore, administered to a sample consisting primarily of college students (n=275). The total sample was divided into four groups according to age with the mean age ranging from 16 years (group 1) to 25 years (group 4). The data indicated that a fair internal consistency of .46 was obtained through a mean item-test correlation coefficient. The data were reanalyzed via another formula which produced an estimate of the internal consistency coefficient as .95 ($p < .01$). Using a varimax statistical method yielded a ten orthogonal rotation with eigenvalues greater than 1.5 for the following ten factors: Minor Chance Annoyances, Destructive People, Unnecessary Delays, Inconsiderate People, Self-Opinionated People, Frustration in Business, Criticism, Major chance Annoyances, People Being Personal, and Authority (Evans & Strangeland, 1971).

State-Trait Anger Expression Inventory-2 (STAXI-2), a 57-item is the latest revision of this instrument. Spielberger (1999) conceptualized anger as having two

components. The first is defined as a psychobiological emotional state, condition, or state anger which is marked by subjective feelings that vary in intensity from a mild irritation to intense fury and rage; state anger is a transitory emotional condition. The second anger component is trait anger. It is defined as the individual differences within a person's disposition when perceiving various situations such as being frustrated, annoyed or to the point of provoking angry/aggressive behaviors (Spielberger, 1999).

The STAXI-2 consists of six scales, five subscales, and an Anger In and Out Expression Index that provides an overall measure of anger control and expression. The STAXI-2, like its predecessors, assesses state anger, trait anger, and anger expression. The Anger Expression Index consists of behaviors associated with the anger experience. The STAXI-2's new anger control scales measure people's attempts in controlling the outward anger expression to their initiations in calming down (Spielberger, 1999).

The STAXI-2 is brief and easy to administer as well as to score. However, participants need a minimum of a sixth grade reading comprehension level to understand the questions and independently complete the questionnaire. The STAXI-2 possesses strong psychometric properties. It was normed, based on hospitalized psychiatric adult patients and a nonclinical sample of adults who were characterized as "heterogeneous". The mean age of the normed sample population was twenty-seven years. Internal consistency alpha coefficients were consistently high across all scales and subscales (.84 or higher, median $r = .88$), except for the four-item T-Ang/R subscale for normal adults, which was .76 (females) and .73 (males) for the non-clinical sample.

Hypotheses and Supportive Theories

The next section will initially provide this research's three hypotheses and an outline of these in Table-1. Following this, each hypothesis will be presented again with the theories and supporting research.

The present research addresses the three following hypotheses:

Hypothesis I: There will be a significant, positive correlation between the total MAD-AS score, the total ICD, and the following five ICD subscales: Externalization of Self Worth, Magnification, Perfectionism, Comparison to Others, and Emotional Reasoning.

Hypothesis II: There will be a significant, negative correlation between the total MAD-AS score, the total DAS score, as well as the three DAS subscales: Approval, Love, and Perfectionism.

Hypothesis III: There will be a significant, positive correlation between the total ICD score, and the following three MAD-AS subscales: Anger Resolution, Emotional Dyscontrol, and Argumentativeness.

Table 1 Hypotheses

| Predictions: | MAD-AS |
|---|--------|
| I. Inventory of Cognitive Distortions (ICD) Subscales: | |
| * ICD Total Score | +r |
| 1. Externalization of Self Worth | +r |
| 2. Magnification | +r |
| 3. Perfectionism | +r |
| 4. Comparison to Others | +r |
| 5. Emotional Reasoning | +r |
| II. Dysfunctional Attitude Scale (DAS) Subscales: | |
| * Dysfunctional Attitude Scale total score | -r |
| 1. Approval | -r |
| 2. Love | -r |
| 3. Perfectionism | -r |
| III. The ICD and MAD-AS subscale scores: | |
| 1. ICD total score & Difficulty with Anger Resolution | +r |
| 2. ICD total score & Emotional Dyscontrol | +r |
| 3. ICD total score & Argumentativeness | +r |

The first hypothesis states that there will be a significant, positive correlation between the total MAD-AS score, the total ICD and the following five ICD subscales: Externalization of Self Worth, Magnification, Perfectionism, Comparison to Others, and Emotional Reasoning. Research has recognized the relationship between one's cognitions and his or her emotional process (Greenberg, 2008; David, Schnur, & Belloiu, 2002). Empirical reviews have provided compelling support that individuals having the propensity to utilize irrational beliefs/ cognitive distortions (trait-congruent cognitive thoughts) may cognitively process stimuli for anger (Greenberg, 2008; Parrott, Zeichner, & Evces, 2005; Martin & Dahlen 2002, 2007; David, Schnur, & Belloui, 2002). In essence this means "how one thinks about an emotional event can shape the emotional response one has" (Ray, Wilhelm, & Gross, 2008).

Externalization of self-worth is the first of the five ICD subscales referenced in hypothesis one. Externalization refers to the development and maintenance of self-worth based almost exclusively on how the external world views one (Yurica, 2002). There is relative agreement because an external agent (a person, place or thing) must be seen as responsible for the negative event if there is to be anger (Berkowitz & Harmon-Jones, 2004). "The basic motive to preserve or enhance self-esteem against assault is one type of ego-involvement must ... be activated for anger to occur" (Lazarus, 2001, p. 57). Therefore one's distorted thoughts such as externalization of self-worth, or negative memories without the operation of positive attributions and appraisals are associated with anger (Berkowitz & Harmon-Jones, 2004).

Magnification is the second ICD subscales referenced in hypothesis one.

Magnification is a cognitive distortion that refers to the tendency to exaggerate, magnify

either positive or negative importance or consequence of some personal trait, event, or circumstance. Therefore, a minor or slight criticism is perceived as a major attack and rejection (Freeman, Pretzer, Fleming, & Simon, 1990). Most people experience anger when they perceive that they are being threatened.

Perfectionism is the third of the ICD subscales referenced in hypothesis one. Perfectionism is a cognitive distortion that refers to a constant striving to live up to some internal or external standard of perfection without examining the evidence for the reasonableness of these standards. When a person uses perfectionism it is in an attempt to avoid a subject's experience of failure. The desire for perfectionism can be a positive factor in adjustment and achievement. However, those who hold exaggerated or unrealistic perfectionist expectations are found to be closely linked to depression and general psychological maladjustment such as anger issues (Blatt, Quinlan, Pilkonis, & Shea, 1995).

Comparison with others is the fourth of the ICD subscales cited in hypothesis one. Comparison is a cognitive bias that is employed when the tendency to compare oneself typically results in the conclusion that one is inferior or worse off than others (Beck, 1999). Festinger argued that people have a fundamental drive to evaluate their abilities and opinions and often do so by comparing themselves with others. People often compare themselves with others for the purpose or the desire to enhance and protect their self-images (Kendrick, Neuberg, & Cialdini, 2002). If a person is similar to another person and is very successful, he or she may be able to "bask in other's glory". However, if the similar person's triumphant performance is in an area you regarded as a special skill of his or her own then it may lead that person to feeling sadly about his or her own

performance. Therefore, individuals are not bothered if they find another is better than they at something they do not regard as centrally relevant to how they define themselves (Kendrick, Neuberg, & Cialdini, 2002). However people are bothered and angered when another is better at something the persons regards as important or relevant to them.

Emotional Reasoning is the fifth of the ICD subscales addressed in hypothesis one. Emotional reasoning is a cognitive distortion that refers to the predominant use of an emotional state to form conclusions about oneself, about others or about situations. An individual thinks something must be true because he or she “feels” and strongly believes its validity, which perpetuates behaviors (e.g. anger) and ignores or discounts the contrary evidence (Beck, J., 1995). This kind of “counterfactual thinking” influences one’s emotional reactions such as anger to common everyday events (Roese & Olson, 1995).

The second hypothesis in this study is that there will be a significant, negative correlation between the total MAD-AS score, the total DAS score, and the following three DAS subscales: Approval, Love, and Perfectionism. Some researchers may support this hypothesis by indicating that sensitivity to loss of rank, social subordination, being criticized, put-down, harassed, and bullied can be major concerns for many people (Gilbert, Irons, Gilbert, & McEwan, 2006). When a person feels highly threatened and insecure, a menu of defenses is triggered which may include anger and a dysfunctional attitude (Gilbert, Irons, Gilbert, & McEwan, 2006).

Approval is the first of the DAS subscales addressed in hypothesis two. The desire for approval can leave one open to the influence of others to change in order to be more easily accepted and to belong in their group or culture (Kenrick, Neuberg, &

Cialdini, 2002). However if the approval is not met, then rejection sensitivity is linked to attachment concerns and has a cognitive focus on the proximity and availability of others for help and support (Gilbert, Irons, Olsen, Gilbert, & McEwan, 2006). Disruption to these relationships can produce angry or anxious protest and/or clinging (Bowlby, 1973). Therefore when a person believes that approval or acceptance is lacking from certain people who are important and/or play a role in his or life, then the person will likely experience anger.

The second DAS subscale is love. Carl Rogers proposed that receiving love in the form of unconditional positive regard was a crucial key to happiness and adjustment (Rogers, 1959). The problematic implications of unrequited love involve lowered self-esteem and humiliation for the would-be lover but involved guilt for the rejecter (Baumeister, Wotman, & Stillwell, 1993). Rejection sensitivity is linked to attachment concerns and has a cognitive focus on proximity to, and availability of others for help and support (Gilbert, Irons, Olsen, Gilbert, & McEwan, 2006). Disruption to an intimate or loving relationship can produce angry or anxious protest and/or clinging (Bowlby, 1973).

Perfectionism is the third DAS subscale addressed in hypothesis two. As mentioned in hypothesis one, Perfectionism is a cognitive distortion that refers to a constant striving to live up to some internal or external representation of perfectionism without examining the evidence for the reasonableness of these standards. Both anger and depression have been traced to cognitive deficits/ cognitive distortions (Beck, 1999; Novaco, 1977). Furthermore, emerging evidence links anger and related emotions with depression (Painuly, Sharan, & Mattoo, 2005; Carmony & DiGiuseppe, 2003). Hence, there is some support indicating the DAS subscale Perfectionism as a factor associated

with depression. Therefore it is believed that the Perfectionism subscale of the DAS will positively correlate to one's overall anger.

The third hypothesis of this research states that there will be a significant, positive correlation between the total ICD score and the following three MAD-AS subscales: Anger Resolution, Emotional Dyscontrol, and Argumentativeness.

Difficulty with Anger Resolution is the first MAD-AS subscale. In support of the third hypothesis, individuals are inclined to be tolerant of their own self-serving behavior; however, they tend to be judgmental towards others who show similar behavior. Different kinds of "offense" can lead to anger and the desire to punish the offender. When feeling unfairly treated, being wronged, believing that another did not live up to expectations, feeling let down, or feeling that one cannot trust this person can prompt angry reactions and facilitates difficulty with anger resolution (Beck, 1999). Because there is a relationship between people's cognitions and their emotional processes, some people will utilize cognitive distortions when they perceive that they are being unfairly treated, which then prompts anger.

Emotional Dyscontrol is the second MAD-AS subscale. Supporting the third hypothesis, Ellis' cognitive theory of emotion states that when a person experiences an undesirable/ unpleasant situation, he or she may have rational as well as irrational beliefs (Ellis, 1994). These beliefs will lead to emotional, behavioral, and cognitive consequences (David, Schnur, & Belloiu, 2002). Therefore, irrational beliefs or cognitive distortions surfacing during an undesirable situation will lead to anger which will facilitate emotional issues such as emotional dyscontrol.

Argumentativeness is the third MAD-AS subscale referenced in hypothesis three. From the moment of birth, each person enters the world with a distinctive disposition and sensitivity known as temperament. An individual's overall personality patterns, coping skills and adaptive flexibilities, determine whether one responds constructively or succumbs to the psychosocial environment (Millon, Davis, et al., 2000). Therefore, people who are upset sometimes believe that an aggressive act such as arguing with another person will improve their emotional states (Bushman, Baumeister, & Phillips, 2001).

CHAPTER 2: METHOD

Participants

This study consisted of 128 men and women from a non-clinical population. Participants' consent was voluntary and personal information remained anonymous. The selected adults were obtained through local colleges, churches, and community organizations. Their ages ranged from 18 to 80 years. The selected adults were a sample from the non-clinical population who are competent in reading and comprehending written text in the English language. Furthermore, these adults were not in psychotherapy nor did they have any outstanding emotional and physical problems that could possibly bias their responses or hinder their performance capabilities. Therefore, those with the following factors were excluded from the study: participants younger than 18 and older than 88 years of age; those experiencing a limited understanding in the written and spoken English language; participants with incomplete protocols; those with an educational level below the eighth grade; participants who sustained a brain injury or were experiencing cognitive decline secondary to a car accident, a fall, a sport accident, or a medical condition; additionally excluded were participants with mental retardation, or any pervasive developmental disorder or physical disability hindering their ability to participate independently in this study.

Demographic Form

This form was specifically designed for the present study. Questions target pertinent information such as age, sex, and education level and other personal and psychosocial information relevant to this study. Appendix A includes an example of this form.

Overview of Research Design

This study utilized a cross sectional correlational design to assess and determine the degree of significance in the relationship between the *Mahan and DiTomasso Anger Scale* (MAD-AS), the *Inventory of Cognitive Distortions* (ICD), and the *Dysfunctional Attitudes Scale* (DAS), as proposed in all the hypotheses.

Measures

This study utilized the following instruments to measure the research objectives: The *Mahan and DiTomasso Anger Scale* (MAD-AS), the *Inventory of Cognitive Distortions* (ICD), and the *Dysfunctional Attitudes Scale Form A* (DAS-A)

Description of Measure

The *Mahan and DiTomasso Anger Scale* (MAD-AS) is a short questionnaire that measures the presence and degree of anger or absence of anger. In addition, this instrument measures self-reported physiological, cognitive, and behavioral aspects of anger. This anger scale was modeled after the Beck inventories. There are 43 items each having a cluster of four sentences relating to the target item. The MAD-AS contains several valuable functions such as the ability to produce a scale rate (from zero to three) for the frequency, intensity, and duration of anger episodes.

The original study's factorial analysis indicated that the scales measured several components of anger such as Anger Dyscontrol, Anger Cognitions, Verbal Anger Expressions, Physiological Arousal, Anger Justification, Externalization, and Anger Resolution Difficulty (Mahan, 2001). Furthermore, the research reported that these seven components were homogeneous and reasonably stable over time (Mahan, 2001). The MAD-AS internal consistency for the total scale was equal to .96 (Mahan, 2001). The

respective coefficient alpha values for scales one through seven were as follows: Scale 1: .93, Scale 2: .83, Scale 3: .82, Scale 4: .86, Scale 5: .70, Scale 6: .73, and Scale 7: .69.

The MAD-AS test-retest reliability coefficient total score was .82. During the same study the validity for all seven factors was calculated and the overall Wilks' lambda was equal to .66 (Mahan, 2001).

Since Mahan's research, another study was conducted using the MAD-AS; however, it utilized a sample from the non-clinical population (Martin, 2002). Its test-retest reliability coefficient total score was .82 (Martin, 2002). The internal consistency total score obtained a Cronbach's coefficient alpha of .90 (Martin, 2002).

The Martin study provided some support for the MAD-AS' psychometric properties. However, the data revealed several discrepancies from the Mahan study, which was conducted with a clinical population. Five items failed to load on any of the first study's factors (Mahan, 2001; Martin, 2002). Therefore, the five items that did not load on any of the factors were removed because of the transparency of the items which possibly elicited exaggerated or understated responses (Martin, 2002).

This research will use the factors and construct definitions as stated in the Martin (2002) study. Factor 1 is Difficulty with Anger Resolution which consists of five items. High scores would suggest holding grudges, difficulty in letting go of anger and bitterness.

Factor 2 is Emotional Dyscontrol which consists of five items. It endorses relationship problems caused by being a hothead and losing control when angry.

Factor 3 is Physiological Arousal, which consists of four items. This factor consists of items that assess the typical ways in which anger may be experienced in the

body, such as accelerated heart rate, increased muscle tension, rapid breathing, and feelings of restlessness or agitation.

Factor 4 is Physical Anger/Aggression, which consists of four items. It endorses items such as getting angry without reason, threatening, and hitting so that individuals with high scores on this scale can be expected to be physically aggressive and act out on their anger.

Factor 5 is Argumentativeness which consists of four items. It is related to arguing, to relationship or job problems. This suggests not only that individuals with high scores have a tendency to argue but also that this propensity has caused them to have problems in relationships and on the job.

Factor 6 is Display Anger which consists of two items: 1) I tell people when they annoy me, and 2) When I am angry, I let it show. There would be no way to tell from the participants' self-reports' and high endorsement of this scale whether or not they were simply asserting themselves or being aggressive.

Factor 7 is Angry Cognitions which measures such things as thoughts about retribution, attribution of intention, and obsession-like thoughts about anger provoking situations. This scale taps the cognitive aspects of anger. In this sense the angry person believes he or she has been wronged, which causes tension that is relieved when the offending agent is punished. The person believes he or she has been wronged. Those scoring high on this subscale engage more frequently in thinking about situations that provoke their anger, thereby possibly precipitating anger and sustaining it.

Factor 8 is Social/Occupational and consists of three items that include items regarding threatening behavior and problems in relations and on the job.

The *Inventory of Cognitive Distortions* (ICD) (Yurica, 2000), is a 69 item scale designed to measure not only thinking errors, but also the frequency of these. A number of cognitive distortions were identified and evaluated by this instrument compared with other similar tools. The ICD is consistent with the cognitive theory which states that cognitive distortions are errors that occur during cognitive processing, affecting the content and meaning of information (Alford & Beck, 1997). Furthermore, this inventory positively correlates with the Beck's Depression Inventory (BDI-II), the Beck's Anxiety Inventory (BAI), and the Dysfunctional Attitude Scale (DAS; Yurica, 2002). This is the only instrument that assessed the frequency in thinking errors. In addition, it has eleven subscales; ten are the cognitive distortion subscales and a total cognitive distortion score.

The preliminary study administered the ICD to both samples: the psychiatric outpatients and the non- clinical population. The assessment of thinking errors was demonstrated to span diagnostic categories rather the restriction to a particular diagnosis (Yurica, 2002). All factors significantly correlated with each other ($p < .01$) and statistically significant differences were identified across all factors between the psychiatric outpatients and non- clinical population (Yurica, 2002). The ICD demonstrated a high internal consistency among the items. The content obtained a valid measure for the overall homogeneous scale. Both the constructs individual cognitive distortions and the total cognitive distortion score both demonstrated high internal consistency (Yurica, 2002).

Further validation of the ICD was conducted through the examination of the distorted thinking, the number and severity of Axis I and Axis II pathology in a mental

health outpatient clinic (Rosenfield, 2004). Combined severity scores across Axis I and Axis II correlated with total ICD score ($r = .75, p < .001$; Rosenfield, 2004).

Several studies utilized the ICD with the non-clinical population (Whaley, 2007; Uhl, 2007). The first study examined the impact of parenting on the development of healthy and maladaptive schemas as well as cognitive distortions between parents and their adult children (Whaley, 2007). The Uhl study examined the association between the frequencies of cognitive distortions, psychiatric and psychosocial factors possibly shaping the way medical patients handle their health problems (Uhl, 2007).

The following section will present the ten cognitive distortion subscales from the ICD as well as the definitions which are from the Yurica (2002) study:

Externalization of Self-Worth Refers to the development and maintenance of self-worth, based almost exclusively on how the external world views one.

Fortune Telling The process of foretelling or predicting the negative outcome of a future event or events and believing this prediction is absolutely true for oneself.

Magnification Refers to the tendency to exaggerate, magnify either the positive or negative importance or consequence of some personal trait, event, or circumstance.

Labeling The cognitive process of labeling oneself using derogatory names

Perfectionism Refers to a constant striving to live up to some internal or external representation of perfection without examining the evidence for the reasonableness of these perfect standards, often in an attempt to avoid a subject's experience of failure.

Comparison The tendency to compare oneself, whereby the outcome typically results in the conclusion that one is inferior or worse off than others

Emotional Reasoning Refers to the predominant use of an emotional state to form conclusions about oneself, about others or about situations

Arbitrary Inference/Jumping to Conclusions Refers to the process of drawing a negative conclusion, in the absence of specific evidence to support that conclusion (Beck et al., 1979; Burns, 1999).

Minimization Refers to the process of minimizing or discounting the importance of some event, trait, or circumstance

Mind Reading Refers to one's arbitrary conclusion that someone is reacting negatively, or thinking negatively towards him/her, without specific evidence to support that conclusion.

The *Dysfunctional Attitude Scale, Form A* (DAS) is a 36-item attitude scale of depressionogenic cognitions. The DAS, Form A, copyrighted in 1978 by Arlene Weissman was the version used for this study. The instrument is constructed of single-sentence items answered on a 7-point Likert scale. The DAS provides a single-scale score which ranges from 40-280. The lower scores indicate the presence of more dysfunctional attitudes, and higher scores represent the presence of more adaptive attitudes. This instrument is widely used in the research setting. However, there is limited information about the utility of the DAS in the clinical setting.

Weissman (1979) designed the DAS specifically to validate Beck's (1976) cognitive theory of depression as well as to measure the presence of attitudes hypothesized to predispose an individual to depression (Cane, Olinger, Gotlib, & Kuiper, 1986). The items were developed to represent the seven major value systems in humans beings such as approval, love, achievement, perfectionism, entitlement, omnipotence, and

autonomy. People's common assumptions or dysfunctional attitudes were represented for each value system. During the development and validation of the DAS, the terms cognitive distortions, errors in thinking and dysfunctional attitudes were used synonymously (Weissman, 1979). The preliminary study used the six original cognitive errors defined by Beck (1976), including arbitrary inference, selective abstraction, overgeneralization, magnification, personalization, and dichotomous reasoning to construct the items (Weissman, 1979). Two versions of the DAS (A and B) were validated by utilizing 355 undergraduate and graduate students in psychology.

Dated studies reported internal consistency coefficients for the DAS in the range of .79 to .93 for a universal population (Cane, Olinger, Gotlib, & Kuiper, 1986; Dobson & Breiter, 1983; Weissman, 1979; Weissman & Beck, 1978). The DAS' internal consistency coefficient for an unselected adult population was .85 (Oliver & Baumgart, 1985). Regarding the construct validity for the DAS, depressed people scored higher than non-depressed people on this inventory (Cane, Olinger, Gotlib, & Kuiper, 1986). Nevertheless, the correlation of .41 between the DAS and the BDI provides evidence that although depressionogenic cognitions are significantly related to depression, their relationship is only moderate, and thus, depressionogenic cognitions remain conceptually different from depression (Oliver & Baumgart, 1985).

Despite the significant contributions and utility which the DAS provides, its limitations need to be addressed. First of all, the terms belief, schema, cognitive distortions, and dysfunctional attitudes were used interchangeably. Second, the DAS was designed to assess attitudes that are relatively stable or enduring and reflect the negative schemas that constitute diatheses to depression (Oliver & Baumgart, 1985). Furthermore,

this instrument provides a total score for cognitive distortion. Therefore clinical information in terms of categorizing and identifying specific types of cognitive distortions cannot be obtained.

This study is interested in exploring the different vulnerability factors which underlie an individual's total DAS score. Therefore, Cane, Olinger, Gotlib and Kuiper's (1986) two major factors, Performance Evaluation and Approval by Others, were found to account for a large proportion of the variance in the DAS-A scores. Similar factors, Approval and Perfectionism, were identified by Oliver and Baumgart (1985) as the first two factors in a four-factor solution (Cane, Olinger, Gotlib, & Kiooper, 1986). These researchers examined the robustness of the two factor solution by randomly dividing the sample and conducting two separate factor analyses (Cane, Olinger, Gotlib, & Kuiper, 1986). DAS-A questions Factor 1 is performance evaluation for Factors 1 and 2, coefficients of .987 and .974, respectively, were obtained, indicating a high degree of congruence for the two-factor solutions (Cane, Olinger, Gotlib, & Kuiper, 1986). Cane's et al. (1986) two factor structure of the DAS-A was adapted for this study. The Approval scale remained unaltered; however, three questions from the Perfectionism scale were placed in the added scale, Love.

Procedure

Materials needed to implement this study were assembled into packets for each participant. Yellow folders containing the essential materials needed secured close with a paper seal. Attached to the outside of the folder there was a letter to inform the participants about the general purpose of the study; the letter also contained the requirements, and restrictions. After reviewing this form, those who met the requirements

were given a yellow folder which contained a pencil, the demographic form, participation criteria form, the MAD-AS, ICD, DAS-A and a 12" x 15" envelope. Verbal instructions were provided to insure accuracy and completion of surveys. Those who took part in this study were also informed about the choice to discontinue participation at any time. After the participants finished completing all requirements, they were instructed to place all forms and protocols into the provided envelope and seal it before it was collected by the researcher.

CHAPTER 3: RESULTS

Statistical Analysis

Of the 200 packets that were administered, 12 were returned for not meeting the criteria and an additional 50 were not utilized because the DAS was not fully completed. Hence, a total of 128 protocols were available for data analysis. A database was created through the Statistical Package for the Social Sciences (SPSS-17) in order to enter the information gathered through this study. Descriptive statistical analysis was computed for the means, standard deviation, and frequency distributions. A frequency distribution was determined for the categorical data. Pearson product-moment coefficients were computed to determine the correlations between all relevant variables. This study did not obtain a sufficient number of subjects in order to have a Factor Analysis to be conducted. The following sections will outline the data from SPSS addressing the pertinent demographic information and the outcome for each hypothesis.

Descriptive Statistics:

Gender distribution for the total sample (n= 128) consisted of 61 males (47.7 %) and 67 females (52.3 %). The ages ranged from 18 to 80 years. The mean age was 42.7 years old with a standard deviation of 13.5. Marital Status variable was distributed as follows: 67 subjects were married (52.3%); 14 subjects were widowers (10.9%); 36 subjects were never married (28.1%), and 11 subjects were divorced (8.6%). The races of subjects were categorized as follows: 108 subjects were Caucasian (84.4%); 13 subjects were African-American (10.2%); 4 subjects were Latino (3.1%); 2 subjects were Asian (1.6%), and one subject was other race (0.8%). Education was distributed as follows: 8 subjects had less than high school education (6.3%); 21 subjects were high school

graduates (16.4%); 39 subjects had some college education (30.5%); 25 subjects were college graduates (19.5%); 22 subjects were Masters Level (17.2%), and 13 subjects were professional/doctorate level (10.2%). Employment was distributed as follows: 111 subjects were employed (86.7%); 11 subjects were retired (8.6%); 3 subjects were unemployed (2.3%), and 3 subjects were in-between jobs or in transition (2.3%). Annual income level (n=127) was distributed as follows: 21 subjects earned \$15,000-\$25,000 (16.4%); 28 subjects earned \$25,000-\$35,000 (21.9 %); 15 subjects earned \$35,000-\$45,000 (11.7%); 52 subjects earned \$50,000 or more (40.6%); and 11 subjects earned \$100,000 or more (8.6%).

Correlational Analysis of Main Variables:

According to Hypothesis I, a significant, positive correlation was expected between the total MAD-AS score, the total ICD, and the following five ICD subscales: Externalization of Self-Worth, Magnification, Perfectionism, Comparison to Others, and Emotional Reasoning. The results indicated a significant, positive correlation between the total MAD-AS score and the total ICD score ($r=0.56$; $p=.01$; $n=128$). In fact, all subscales of the ICD and total anger as indicated by MAD-AS were positively correlated. There was a significant, positive correlation between the total MAD-AS score and the ICD subscale Externalization of Self-Worth ($r=.49$; $p=.01$). There was also a significant, positive correlation between the total MAD-AS score and the ICD subscale Magnification ($r=.53$; $p=.01$). Furthermore, there was a significant, positive correlation between the total MAD-AS score and the ICD subscale Perfectionism ($r=.38$; $p=.01$). There was also significant, positive correlation between the total MAD-AS score and the ICD subscale Comparison to Others ($r=.40$; $p=.01$). There was a significant, positive

correlation between the total MAD-AS score and the ICD subscale Emotional Reasoning ($r=.27$; $p=.01$).

To further assess the relationship of ICD variables with MAD-AS, coefficients of determination (r^2) were obtained as follows. Total ICD score was significantly associated with total anger, because almost one-third of the variance in anger was accounted for by the total ICD score ($r^2=.31$). ICD subscales showed some variability in proportion of relationship because the highest coefficients were obtained for Magnification ($r^2=.28$), and Externalization of Self-Worth ($r^2=.24$). Comparison to Others ($r^2=.16$) and Perfectionism ($r^2=.15$) also moderately contributed to anger. Emotional Reasoning accounted for only 7% of the anger variance ($r^2=.07$).

According to Hypothesis II, a significant, negative correlation was expected between the total MAD-AS score, the total DAS score, and the following three DAS subscales: Approval, Love, and Perfectionism. The results indicated a significant, negative correlation between the total MAD-AS score and the total DAS score ($r=-0.37$; $p=.01$; $n=128$). In fact, all subscales of the DAS and total anger as indicated by MAD-AS were negatively correlated. There was a significant, negative correlation between the total MAD-AS score and the DAS subscale Approval ($r=-.29$; $p=.01$). There was also a significant, negative correlation between the total MAD-AS score and the DAS subscale Love ($r=-.30$; $p=.01$). Furthermore, there was a significant, negative correlation between the total MAD-AS score and the DAS subscale Perfectionism ($r=-.35$; $p=.01$).

To further assess the relationship of DAS variables to MAD-AS, coefficients of determination (r^2) were obtained as follows. Total DAS score was moderately associated with total anger ($r^2=.14$), as well as with the subscales Approval ($r^2=.09$); Love ($r^2=.09$);

and Perfectionism ($r^2=.12$). These results indicate that DAS and its subscales accounted for between 9% and 14% of the variance in anger as measured by MAD-AS.

Hypothesis-III predicted a significant, positive correlation between the total ICD score and the following three MAD-AS subscales: Anger Resolution, Emotional Dyscontrol, and Argumentativeness. The results indicated a significant, positive correlation between the total ICD score and Difficulties with Anger Resolution from MAD-AS ($r=0.37$; $p=.01$; $n=128$). There was a significant, positive correlation between the total ICD score and Emotional Dyscontrol ($r=.49$; $p=.01$). There was also a significant positive correlation between the total ICD score and Argumentativeness ($r=.54$; $p=.01$).

To further assess the relationship of ICD total to the specified MAD-AS variables, coefficients of determination (r^2) were obtained as follows. Total ICD score accounted for a small amount of variability in Difficulty with Anger Resolution ($r^2=.14$), but accounted for a relatively higher amount of variation in Argumentativeness ($r^2=.29$) and Emotional Dyscontrol ($r^2=.24$). These results indicate that the ICD total score accounts for about one-fourth of the variability in the latter two MAD-AS scales examined here.

CHAPTER 4: DISCUSSION

The effects of anger infiltrate all our lives. However, its influence on some individuals creates a challenge for living a safe, peaceful, emotionally and/or physically healthy life. The following section will address the salient findings regarding the relationship between cognitive distortions and anger; dysfunctional attitude and anger; and the relationship between and among anger components, which include difficulty resolving anger, emotional dyscontrol, argumentativeness, and cognitive distortions. This study consisted of a non-clinical population and explored the relationship between several measures in a manner that had not been previously investigated. In addition, the limitations of the study as well as implications for practitioners and relating the findings to future research will be addressed.

All the hypotheses developed in this study were supported by the obtained results. The first hypothesis predicted a significant, positive relationship between subjects' cognitive distortions (ICD) and their anger (MAD-AS). The results indicated significant, positive correlations, as expected. The Inventory of Cognitive Distortions (ICD) was designed to measure thinking errors and frequency with which they occur during cognitive process which affects the content and meaning of information (Alford & Beck, 1997). Empirical reviews provided compelling support that individuals use irrational beliefs/cognitive distortions to cognitively process stimuli/information for anger (Greenberg, 2008, Parrott, Zeichner, & Evces, 2005; Martin & Dahlen, 2002, 2007; David, Schnur, & Belloui, 2002). The results from this study found a strong relationship between subjects using cognitive distortions (via ICD) and anger (via MAD-AS). However, cognitive distortions involving Magnification and Externalization of Self-

Worth demonstrated the strongest association with anger (via MAD-AS), accounting for more than one-fourth of the variance in anger. Research has indicated that if there is to be anger, the individual must see external agents such as a person, place, or thing being responsible for the negative event or circumstances (Beck, 1999; Berkowitz & Harmon-Jones, 2004). Consistent with prior research, this study indicates that individuals manifesting cognitive tendencies to exaggerate or magnify events or circumstances and those that maintain self-worth primarily through external reference tend to report more anger. Other cognitive distortions including Comparison to Others and Perfectionism also had a moderate relationship to anger. These scales involve schemas characterized by striving to live up to unrealistic or rigid standards and biased, negative comparison of self to others. The cognitive distortion Emotional Reasoning reflected the lowest association with anger (via MAD-AS). This scale involves predominant use of emotional states to form conclusions about relationships or events.

The second hypothesis predicted a significant, negative correlation between the anger (via MAD-AS) and depressogenic cognitions as measured by the DAS and its subscales, Approval, Love, and Perfectionism. The results indicated significant, negative correlations as expected, with total DAS accounting for almost fifteen percent of the variance in anger. Hence, anger appears to also be moderately influenced by schemas involving perfectionism, approval seeking and rejection sensitivity. It is important to note that the DAS measures cognitions, dysfunctional attitudes, and negative schemas related to a predisposition or vulnerability to depression that are relatively enduring. A classic study using the DAS administered this assessment to all of their intake patients in the National Institute of Mental Health Treatment of Depression Collaborative Research

Program (Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982). The study found, consistent with Beck's findings (1983) that patients high on perfectionism are closely linked to severe depression (Blatt, Quinlan, Pilkonis & Shea, 1995; Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982). Because the present study administered the DAS to a nonclinical population, the results demonstrated a moderate relationship between Perfectionism and Anger (via MAD-AS). However, these results appear to confirm the results from prior research between the DAS and the BDI, which "provided evidence that while depressionogenic cognitions are significantly related to depression, their relation is only moderate, and thus, depressionogenic cognitions remain conceptually different from depression" (Oliver & Baumgart, 1985).

As previously indicated, this study found a significant relationship between anger and depression-related cognitions. A recent study also provides support and corroboration for the higher incidence of anger, irritability, and hostility in depressed patients, compared with healthy controls (Beardmore, 2003). This study, utilizing the MAD-AS, compared a control group consisting of a nonclinical population, with a group of outpatients diagnosed with anger, anxiety, or depression. The results indicated that individuals with anger, anxiety, or depression scored significantly higher on the total MAD-AS and on each of its subscales, compared with the control group. The results of the latter study provided support for anger as a contributing factor in individuals with significant clinical problems including those who report symptoms of anxiety or depression or those referred for anger-related problems (Beardmore, 2003).

The third hypothesis predicted a significant, positive correlation between cognitive distortions, as measured by the total ICD score and several components of

anger, as obtained from the following three MAD-AS subscales: Anger Resolution, Emotional Dyscontrol, and Argumentativeness. The results from this study indicated significant, positive correlations as expected. Cognitive distortions accounted for almost thirty percent of the variance for Argumentativeness or propensity to argue, with consequent job and relationship problems, and for Emotional Dyscontrol, which measures the tendency to lose control as a result of angry feelings or thoughts. Difficulty with Anger Resolution was accounted for by cognitive distortions in a less pronounced but still moderate relationship. As Taylor, et al. (2005) remarked, “Unbridled anger is the cause of emotional distress, disrupted relationships, and loss of productivity, ruined careers, as well as the destruction of property, personal injury, and death”.

The present study provides support for the use of all the measures employed both for the assessment of anger and for its relationship to specific cognitive errors or distortions. This relationship had hitherto not been extensively examined in prior research. Furthermore, it sheds additional light on specific cognitive schemas that may need to be targeted for clinical intervention, particularly in cognitive-behavioral treatment methods. One advantage of this study is having used a non-clinical sample, which appears more appropriate to set some “baseline” in terms of the nature of the relationship between the proposed schemas and anger. At the same time, such results ultimately need to be replicated in a clinical sample to assess any variations.

Implication for Practitioners:

Practitioners should be cognizant of the relationship between anger and client schemas related to externalizing blame, magnification, perfectionism, and comparison with others. Addressing these schemas appears particularly relevant to healthy coping

with anger, according to the present results. Any method of systematically measuring these schemas through questionnaires and/or homework assignments would be helpful in diagnosing their presence in patients.

Implication for the General Public:

The public has been exposed to a variety of books, magazine articles, television programs on mind/body medicine, many featuring doctors, and researchers dedicated to advancing knowledge of the mind's role in health and illness (Weil, 1995, 1997; Moyer, 1993). Emotions have a great deal to do with one's state of well-being in terms of health or illness. Dr. Andrew Weil, a graduate of Harvard Medical School, who worked for the National Institute of Mental Health, has seen the physical effects on the body from prolonged depression and/or anger. He has postulated that the emotional risk factors for heart attack may be more important than physical bases and specified that anger and a lack of love are the two main emotional risk factors (Weil, 1995). Bill Moyer a media celebrity conducted an interview with Dr. Jon Kabat-Zinn, PhD., founder and Director of the Stress Reduction Clinic at the University of Massachusetts Medical Center and Associate Professor of Medicine in the Division of Preventative and Behavioral Medicine at the University of Massachusetts Medical School (Kabat-Zinn, cited in Moyer, 1993). Dr. Kabat-Zinn indicated that suppressing anger is not healthy for one's physical and mental health but neither is acting anger out. Hence, medical scientists such as Weil and Kabat-Zinn attempt to help their patients gain control and maintain evenness (balance) in their emotions and temperament to maintain physical well being.

As stated, many issues secondary to anger continue to burden our nation and individuals as well through financial costs, maintaining or expanding prisons, car

insurance rates, skyrocketing medical insurance, and reduction of citizens' paychecks due to taxes. The first step in healing the consequences (pervasive anger) of these severe stressors is through social awareness. All professionals should continue bringing awareness about how negative emotions such as anger impact one's physical and mental well being. The public needs to be educated at a basic level about how irrational beliefs manifest, about their purpose, and their relationship to anger; this education needs to include negative effects of using cognitive distortions such as Magnification, Externalization, Comparison to Others and Perfectionism to encourage anger symptoms. The pertinent findings of this research regarding the relationship between cognitive distortion, attitudes, and anger symptoms can provide assistance to professional when educating the general public about how their mental health (anger symptoms) and its potential effect of this on their physical health as well as their general well being.

Limitations of the Study

Although the participants were anonymous during the entire study, it may be possible for respondents to understate or to exaggerate their answers. This study did not directly assess potential issues related to social desirability. However, a prior study in which the Marlowe-Crowne Social Desirability Scale (MCSD) was administered, a negative correlation was found between the MAD-AS scores and the SD scale for biased responses (Martin, 2002).

Another limitation of the study is that participants' responses to items in self-report measures can be "greatly influenced by wording, format, and order of appearance of the items" (Kazdin, 2003). A further potential limitation of the study is not addressing all the subscales and items from the DAS and ICD. Some suggest that most research

analyses do not go far enough in considering those factors which can generate the emotion/anger (Berkowitz & Harmon-Jones, 2004). Another limitation is that the present study used correlational analyses which indicates the degree/strength in relationship between the variables in question, but cannot determine causality or its direction. Another limitation to this study was the number of subjects. Although the majority of the questionnaires distributed were returned in a manner appropriate for data analysis, about one-fourth of the targeted subjects did not fully complete the DAS. The majority of the packets having incomplete DAS questionnaires were from participants whose ages ranged from 65 to 80. Several participants willingly provided their reasons for not being able to complete the DAS. Feedback provided by several subjects highlighted the following issues for incomplete DAS questionnaires: the DAS was tedious to answer because of the 7 scale rating system which response choices are: totally agree, agree very much, agree slightly, neutral, disagree slightly, disagree very much, and totally disagree. Some readers found it difficult to make choices that varied slightly in degree. Most participants reported that the wording of questions in relation to the seven scale rating system was confusing. As explained, the readers needed to refer constantly to the example on the first page which was perceived as unclear in the relationship between various questions and the positive or negative valence of the rating system. A further limitation of the study was that the sample consisted of predominantly Caucasian subjects. A sample consisting of a greater number of minority populations is essential in addressing whether or not there are any cross-ethnic or cultural differences in the degree of the relationship found between the variables. Although the use of a non-clinical sample

can enhance our understanding of anger and related cognitive schemas, the study should be further extended to varied clinical populations.

Future research in this area is recommended in terms of empirically studying, determining, and analyzing, in greater depth, the specific difference between participants regarding their cognitive distortions and attitudes with regard to their levels of anger in larger and more diverse populations. In addition, it would be beneficial to assess whether or not one's cognitive distortions and attitudes regarding anger vary according to environment (work verses home).

References

- Alford, B. A., & Beck, A. T. (1997). *The integrative power of cognitive therapy*. New York: Guilford Press.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders (text revision)*. Washington, DC: Author.
- Anderson, G. (2006). Anger, it's not all the rage. *Notes from the World of Anger Management*. [File://I:\Anger Dissertation\](#) Notes From the World of Anger Management-Archives for February
- Aquino, K., Douglas, S., & Martinko, M. J. (2004). Overt anger in response to victimization: Attributional style and organizational norms as moderators. *Journal of Occupational Health Psychology*, 9(2), 152-164.
- Averill, J. R. (1983). Studies on anger and aggression: Implication for theories of emotion. *American Psychologist*, 38(11), 45-60.
- Bandura, A. (1977). Towards a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Barclay, L. J., Skarlicki, D. P., & Pugh, S. D. (2005). Exploring the role of emotions in injustice perceptions and retaliation. *Journal of Applied Psychology*, 90(4), 629-643.
- Baron, K. G., Smith, T. W., Butner, J., Nealey-Moore, J. (2007). Hostility, anger, and marital adjustment: concurrent and prospective associations with psychosocial vulnerability. *Journal of Behavioral Medicine*, 30(1), 1-10.
- Bassarath, L. (2001). Neuroimaging studies of antisocial behavior. *Canadian Journal of*

- Psychiatry*, 4(8), 728-732.
- Baumeister, R. F., Wotman, S. R., & Stillwell, A. M. (1993). Unrequited love: on heartbreak, anger, guilt, scriptlessness, and humiliation. *Journal of Personality and Social Psychology*, 64(3), 377-394.
- Beardmore, R.O., (2003). *A normative study of the Mahan and Ditomasso anger scale in an outpatient clinical sample*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Beck, A. T. (1964). Thinking and depression: II. Theory and therapy. *Archives of General Psychiatry*, 10, 561-571.
- Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: International Universities Press.
- Beck, A.T. (1983).Cognitive therapy of depression: New perspectives. In P. J. Clayton & J. E. Barrett (Eds.), *Treatment of depression: Old controversies and new approaches* (pp. 265-290). New York: Raven.
- Beck, A. T. (1996). Beyond belief: A theory of modes, personality, and psychopathology. In P. M. Salkovskis (Ed.), *Frontiers of cognitive therapy* (pp. 1-25). New York: Guilford Press.
- Beck, A. T. (1999). *Prisoners of hate: The cognitive basis of anger, hostility, and violence*. New York: Harper Collins.
- Beck, J. S. (1995). *Cognitive therapy: Basis and beyond*. New York: Guilford Press.
- Beck, A. T., Butler, A. C., Brown, G. K., Dahlsgaard, K. K., Newman, C. F., & Beck, J. S. (2001). Dysfunctional beliefs discriminate personality disorders. *Behavior Research and Therapy*, 39, 1213-1225.

- Beck, R., & Fernandez, E. (1998). Cognitive-behavioral therapy in the treatment of anger: A meta-analysis. *Cognitive Therapy & Research*, 22, 63-74.
- Beck, A. T., Freeman, A., Davis, D. D., & Associates. (2004). *Cognitive therapy of personality disorders: Second edition*. New York: Guilford Press.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.
- Begley, S. (2007, April 30). The anatomy of violence. *Newsweek*, 40-46.
- Berenbaum, H., Fujita, F., & Pfennig, J. (1995). Consistency, specificity, and correlates of negative emotions. *Journal of Personality and Social Psychology*, 68(2), 342-352.
- Berkowitz, L. (1993). *Aggression: Its causes, consequences, and control*. New York: McGraw-Hill.
- Berkowitz, L. & Harmon-Jones, E. (2004). Towards an understanding of the determinants of anger. *Emotion*, 4(2), 107-130.
- Berkowitz, L. & Harmon-Jones, E. (2004). More thoughts about anger determinants. *Emotion*, 4(2), 151-155.
- Biaggio, M. K. (1980). Assessment of anger arousal. *Journal of Personality Assessment*, 44, 289-298.
- Biaggio, M. K., & Maiuro, R. D. (1985). Recent advances in anger assessment. In C. D. Spielberger & J. N. Butcher (Eds.), *Advances in Personality Assessment (Vol. 5, pp. 71-111)*. Hillsdale, NJ: Erlbaum.

- Biaggio, M. K., Supplee, K., & Curtis, N. (1981). Reliability and validity of four anger scales. *Journal of Personality Assessment*, 45, 639-648.
- Birditt, K. S. & Fingerman, K. L. (2003). Age and gender differences in adults' descriptions of emotional reactions to interpersonal problems. *The Journal of Gerontology*, 58B (4), 237-245.
- Blatt, S. J., Quinlan, D. M., Chevron, E. S., McDonald, C., & Zuroff, D. (1982). Dependency and self-criticism: Psychological dimensions of depression. *Journal of Consulting and Clinical Psychology*, 50, 113-124.
- Blatt, S. J., Quinlan, D. M., Pilkonis, P. A., & Shea, M. T. (1995). Impact of perfectionism and need for approval on the brief treatment of depression: The national institute of mental health treatment of depression collaborative research program revised. *Journal of Consulting and Clinical Psychology*, 63(1), 125-132.
- Bowlby, J. (1973). Attachment and loss. Volume 2: Separation anxiety and anger. New York: Basic Books.
- Brown, G. P., Hammen, C. L., Craske, M. G., & Wickens, T. D. (1995). Dimensions of dysfunctional attitudes as vulnerabilities to depressive symptoms. *Journal of Abnormal Psychology*, 104(3), 431-435.
- Burns, D. D. (1999). *Feeling good: The new mood therapy*. Avon Books, New York.
- Burns, J. W. (1997). Anger management style and hostility: Predicting symptom-specific physiological reactivity among chronic low back pain patients. *Journal of Behavioral Medicine*, 20, 505-522.
- Bushman, B. J., Baumeister, R. F., & Phillips, C. M. (2001). Do people aggress to improve their mood? Catharsis beliefs, affect regulation opportunity, and

- aggressive responding. *Journal of Personality and Social Psychology*, 81 (1), 17-32.
- Buss, A. H. & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology*, 21, 343-349.
- Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology*, 63 (3), 452-459.
- Butcher, J. N., Graham, J. R., Ben-Porath, Y. S., Tellegen, A., Dahlstrom, W. G., & Kaemmer, B. (2001). *MMPI-2 (Minnesota Multiphasic Personality Inventory—2): Manual for the administration, scoring, and interpretation* (Rev. ed.). Minneapolis: University of Minnesota Press.
- Cane, D. B., Olinger, J., Gotlib, I. H., & Kuiper, N. A. (1986). Factor structure of the dysfunctional attitude scale in a student population. *Journal of Clinical Psychology*, 42(2), 307-309.
- Cao, M., Zhang, S., Wang, K., Wang, Y., & Wang, W. (2002). Personality traits in migraine and tension-type headaches: A five-factor model study. *Psychopathology*, 35, 254-258.
- Carmony, T. M., & DiGiuseppe, R. (2003). Cognitive induction of anger and depression: The role of power, attribution, and gender. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 21(2), 105-118.
- Cohen, S. (1995). Psychological stress and susceptibility to upper respiratory infections. *American Journal of Respiratory and Critical Care Medicine*, 152, S53-S58.
- Cottingham, E. M., Matthews, K. A., Talbott, E., & Kuller, L. H. (1986). Occupational stress, suppressed anger, and hypertension. *Psychosomatic Medicine*, 48(3/4), 249-

- 260.
- Dahlen, E. R. (2007). Cognitive therapy for clinically dysfunctional anger: A case study. *Clinical Case Studies*, 6(6), 493-507.
- Dan, A. A., Crone, C. Wise, T. N., Martin, L. M. Ramsey, L., Magee, S., Sjogren, R., Ong, J. P., & Younossi, Z. M. (2007). Anger experiences among hepatitis C patients: Relationship to depressive symptoms and health-related quality of life. *Psychosomatics*, 48(3), 223-229.
- David, D., Schnur, J., & Belloiu, A. (2002). Another search for the “hot” cognitions: Appraisal, irrational beliefs, attributions, and their relation to emotion. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 20(2), 93-131.
- Davidson, R. J., Abercrombie, H., Nitschke, J. B., & Putnam, K. (1999). Regional brain function, emotion and disorders of emotions. *Current Opinion Neurobiology*, 9, 228-234.
- Davidson, R. J., Putnam, K. M, & Larson, C. L. (2000). Dysfunction in the neural circuitry of emotion regulation-a possible prelude to violence. *Science*, 289, 591-594.
- Deffenbacher, J. L. (1996). Cognitive-behavioral approaches to anger reduction. In K.S. Dobson & K. D. Craig (Eds.), *Advances in cognitive-behavioral therapy* (pp. 31-62). Thousand Oaks, CA: Sage.
- Deffenbacher, J. L., Lynch, R. S., Oetting, E. R., & Swaim, R. C. (2002). The driving anger expression inventory: A measure of how people express their anger on the road. *Behavior Research & Therapy*, 40, 717-737.
- Deffenbacher, J. L., Zwemer, W. A., Whisman, M. A., Hill, R. A., & Sloan, R. D. (1986).

- Irrational beliefs and anxiety. *Cognitive Therapy and Research*, 10, 281-292.
- Devine, P. G., Hamilton, D. L., & Ostrom, T. M. (1994). *Social cognition: Impact on social psychology*, San Diego: Academic Press.
- DiGiuseppe, R. & Froh, J. J. (2002). What cognitions predict state anger? *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 20(2), 133-150.
- DiGiuseppe, R., & Tafrate, R. C. (2001). A comprehensive treatment model for anger disorders. *Psychotherapy*, 38(3), 262-271.
- DiGiuseppe, R., & Tafrate, R. C. (2003). Anger treatment for adults: A meta-analytic review. *Clinical Psychology: Science and Practice*, 10(1), 70-84.
- Dillion-Hooper, P. (2005). Controlling the nation's anger. *Psychologist*, 18(8), 463.
- Dittmann, M. (2003, March). Anger across the gender divide. *Monitor*, 34 (3), 52.
- Driscoll, H., Zinkivskay, A., Evans, K., & Campbell, A. (2006). Gender differences in social representations of aggression: The phenomenological experience of differences in inhibitory control. *British Journal of Psychology*, 97, 139- 153.
- Ellis, A. E. (1994). *Reason and emotion in psychotherapy: Revised and updated*. New York: Carol Publishing.
- Ellsworth, P. C., & Tong, E. M. (2006). What does it mean to be angry at yourself? Categories, appraisals, and the problem of language. *Emotions*, 6(4), 572-586.
- Evans, D. R., & Strangeland, M. (1971). Development of the reaction inventory to measure anger. *Psychology Reports*, 29, 412-414.
- Evens, C., Fischer, A. H., Rodrigues-Mosquera, P. M. & Manstead, A. S. (2005). Anger and social appraisal: A "spicy" sex difference? *Emotion*, 5(3), 258-266.

- Finney, M. L., Stoney, C. M., & Engebretson, T. (2002). Hostility and anger expression in African American and European American men is associated with cardiovascular and lipid reactivity. *Psychophysiology*, 39, 340-349.
- Fletcher, G. J. O., Simpson, J. A., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality & Social Psychology Bulletin* 26, 340-354.
- Fossati, Hevenor, S. J., Graham, S. J., Grady, C., Keightley, M. L., & Craik, F. (2003). In search of the emotional self: An FMRI study using positive and negative emotional words. *American Journal of Psychiatry*, 160(11), 1938-1945.
- Freeman, A., & Dattilio, F. M. (Eds.). (1992). *Comprehensive casebook of cognitive therapy*. New York: Plenum Press.
- Freeman, A., Pretzer, J., Fleming, B., & Simon, K. M. (1990). *Clinical applications of cognitive therapy*. New York: Plenum Press.
- Freeman, A., Schrodtt, G., Gilson, M., & Ludgate, J. (1993). Group cognitive therapy with inpatients. In J. Wright, M. Thase, A. T. Beck, & J. Ludgate (Eds.), *Cognitive therapy with inpatients* (pp. 121-153). New York: Guilford Press.
- Fusco, G. M., & Freeman, A. (2004). *Borderline personality disorder: A patient's guide to taking control*. New York: Norton & Company.
- Futterman, L. G., & Lemberger, L. (2002). Anger and acute coronary events. *American Journal of Critical Care*, 11, 574-576.
- Galambos, N. L., Barker, E. T., & Krahn, H. J. (2006). Depression, self-esteem, and

- anger in emerging adulthood: Seven-year trajectories. *Developmental Psychology*, 42(2), 350-365.
- Gaskin, M. E., Greene, A. F., Robinson, M. E., & Geisser, M. E. (1992). Negative affect and the experience of chronic pain. *Journal of Psychosomatic Research*, 36, 707-713.
- Gilbert, P., Irons, C., Olsen, K., Gilbert, J., & McEwan, K. (2006). Interpersonal sensitivities: Their links to mood, anger, and gender. *Psychology and Psychotherapy*, 79, 37-51.
- Gollwitzer, M., Eid, M., & Jurgensen, R. (2005). Response styles in the assessment of anger expression. *Psychological Assessment*, 17(1), 56-69.
- Gottfredson, M., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Greenberg, L. (2008). Emotion and cognition in psychotherapy: The transforming power of affect. *Canadian Psychology*, 49(1), 49-59.
- Groth-Marnat, G. (1997). *Handbook of psychological assessment* (3rd ed.). New York: Wiley & Sons.
- Hargrove, T., & Stempel, G. H. (2006). The level of resentment people feel towards the federal government. The Scripps Survey Research Center at Ohio University. Org.
- Hariri, A. R., Bookheimer, S. Y., & Mazziotta, J. C. (2000). Modulating emotional responses: Effects of a neocortical network on the limbic system. *Neuroreport*, 11(1), 43-48.

- Harmon-Jones, E., & Siegelman, J. (2001). State anger and prefrontal brain activity: Evidence that insult-related relative left-prefrontal activation is associated with experienced anger and aggression. *Journal of Personality and Social Psychology*, 80(5), 797-803.
- Hershcovis, M. S., Turner, N., Barling, J., Arnold, K. A., Dupre, K. E., Inness, M., LeBlanc, M., & Sivanathan, N. (2007). Predicting workplace aggression. *Journal of Applied Psychology*, 92(1), 228-238.
- Heyman, S. R. (1977). Dogmatism, aggression, and gender roles. *Journal of Clinical Psychology*, 33, 694-698.
- Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133-168). New York: Guilford.
- Janssen, S. A. Spinhoven, P., & Brosschot, J. F. (2001). Experimentally induced anger, cardiovascular reactivity, and pain sensitivity. *Journal of Psychosomatic Research*, 51, 479-485.
- Jenkins, J. M. and Oatley, K. (1996). "Emotional Episodes and Emotionality through the Life Span." Pp. 421-442 in *Handbook of Emotion, Adult Development and Aging*, edited by C. Magai and S.H. McFadden. San Diego: Academic Press.
- Kassinove, H. ed (1995). *Anger Disorders: Definition, Diagnosis, and Treatment*. Washington, DC: Taylor & Francis.
- Kassinove, H., & Sukhodolsky, D. G. (1995). *Anger disorders: Basic science and practice*

- issues. In H. Kassinove (Ed.), *Anger disorders: Definition, diagnosis and treatment (pp.1-26)*. Washington, DC: Taylor & Francis.
- Kazdin, A. E. (2003). *Research design in clinical psychology*. Boston: Allyn & Bacon.
- Keltner, D. & Haidt, J. (2001). Social functions of emotions. In T.J. Mayne & G. A. Bonanno (Eds.), *Emotions: Current Issues and Future Directions (pp.192-213)*. New York: Guilford Press.
- Kenrick, D. T., Neuberg, S. L., & Cialdini, R. B. (2002). *Social psychology: Unraveling the mystery second edition*, Boston: Allyn and Bacon.
- Kessler, R. C., Coccaro, E. F., Fava, M., Jaeger, S., Jin, R., & Walters, E. (2006). The prevalence and correlates of DSM-IV intermittent explosive disorder in the national comorbidity survey replication. *Archives of General Psychiatry*, 63(6), 669-678.
- Kim, J.S., Choi, S., Kwon, S.U., & Seo, Y.S. (2002). Inability to control anger or aggression after stroke. *Neurology*, 58(7), 1106-1108.
- Koestner, R., & McClelland, D. C. (1990). Perspectives on competence motivation. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research (pp. 527-548)*. New York: Guilford.
- Kohut, H. (1978). Thoughts on narcissism and narcissistic rage. In P. H. Ornstein (Ed.). *The search for self (Vol. 2)*, New York: International Universities Press.
- Kolb, B., & Whishaw, I. Q. (1999). *Fundamentals of human neuropsychology fourth edition*. London: Worth Publishers.
- Lampert, R., Josks, T., Burg, M. M., Batsford, W. P., Pherson, C. A., & Jain, D. (2002).

- Emotional and physical precipitants of ventricular arrhythmia. *Circulation*, 106, 1800-1805.
- Lazarus, R. S. (2001). Relational meaning and discrete emotions. In K.R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion* (pp.121-140). Oxford, England and New York: Oxford University Press.
- Leibowitz, G. (1968). Comparison of self-report and behavioral techniques of assessing aggression. *Journal of Consulting and Clinical Psychology*, 32, 21-25.
- Lench, H. C. (2004). Anger management: Diagnostic differences and treatment implications. *Journal of Social and Clinical Psychology*, 23(4), 512-531.
- Lezak, M. D., Howieson, D. B., & Loring, D. W. (2004). *Neuropsychological assessment*. London: Oxford University Press.
- Lindsay, J. J., & Anderson, C. A. (2000). From antecedent conditions to violent actions: A general affective aggression model. *Personality & Social Psychology Bulletin*, 26, 533-547.
- Locke, K. D. (2005). Interpersonal problems and interpersonal expectations in everyday life. *Journal of Social and Clinical Psychology*, 24(7), 915, 931.
- Lovullo. W. R. (1997). *Stress and health: Biological and psychological interactions*. London: Sage Publications.
- Mahan, J. P. (2001). *MAD-AS: Development and validation of a psychometric test for measurement of anger*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Mammem, O. K., Shear, M. K., Pilkonis, P. A., Kolko, D. J., Thase, M. E., & Greeno, C.

- G. (1999). Anger attacks: Correlates and significance of an under-recognized symptom. *Journal of Clinical Psychiatry*, 60(9), 633-642
- Martin, D. M. (2002). *A comparison of self and significant other rated expression of anger using the MAD-AS and the SO-MAD-AS*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Martin, R. C., & Dahlen, E. R. (2004). Irrational beliefs and the experience and expression of anger. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 22(1), 1-18.
- Martin, R. C., & Dahlen, E. R. (2007). The angry cognitions scale: A new inventory for assessing cognitions in anger. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 25(3), 155-173.
- Martin, R.C., & Dahlen, E. R. (2007). *Anger response styles and reaction to provocation*. *Personality and Individual Differences*, 43, 2083-2094.
- Martin, R., Watson, D., & Wan, C. K. (2000). A three- factor model of trait anger: Dimensions of affect, behavior, and cognition. *Journal of Personality*, 68(5), 869-897.
- Marx, K. [1852] 1983. From the eighteenth brumaire of louis bonaparte. In E. Kamenks (Ed.), *The portable Karl Marx*, New York: Penguin.
- Max, J.E., Robertson, B.A., & Lansing, A.E. (2001). The phenomenology of personality change due to traumatic brain injury in children and adolescents. *Journal of Neuropsychiatry and Clinical Neurosciences*, 13, 161-170.
- Mental Health Foundation, (2008). Campaign calls for help for the angry. *Mental Health Today*, April, www.mentalhealth.org.uk.

- Millon, T., Davis, R., & Millon, C. (1997). *MCMI-III manual* (2nd ed.). Minneapolis, MN: National Computer Systems.
- Millon, T., Davis, R., Millon, C., Escovar, L. & Meagher, S. (2000). *Personality disorders in modern life*. New York: John Wiley & Sons.
- Miriwsky, J., & Ross, C. E. (1989). *Social causes of psychological distress*. New York: Aldine de Gruyter.
- Miriwsky, J., & Ross, C. E. (1995). Sex differences in distress: Real or artifact? *American Sociological Review*, 20 415-449.
- Moore, T., Crumpton-Franey, K., & Geffner, R. (2004). Assessment and treatment of youth who sexually offend: An overview. In R. Geffner, K. Crumpton-Franey, T. Geffner-Arnold, & R. Falconer (Eds.), *Identifying and treating youth who sexually offend: Current approaches, techniques, and research* (pp.1-13). New York: Haworth Press.
- Morgan, A. B., & Lilienfield, S. O. (2000). A meta-analytic review of the relationship between antisocial behavior and neuropsychological measures of executive function. *Clinical Psychology Review*, 20, 113-136.
- Moyer, B. (1993). *Healing and the mind*. New York: Doubleday.
- Mudge, S. (2003). Validation of the emogram anger scale and the state-trait anger expression inventory-2 (STAXI-2): A correlation study. ProQuest Psychology Journals, Doctoral dissertation, St. Mary's University of San Antonio.
- Needleman, L D. (1999). In I. B. Weiner (Ed.), *Cognitive case conceptualization*, Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

- Neeleman, J., Ormel, J., & Bijl, R.V. (2001). The distribution of psychiatric and somatic ill health: Associations with personality and socioeconomic status. *Psychosomatic Medicine: Journal of Biobehavioral Medicine*, 63(2), 239-247.
- Neumann, R. (2000). The casual influences of attributions on emotions: A procedural priming approach. *Psychological Science*, 11(3), 179-182.
- Novaco, R. W. (1975). *Anger control*. Lexington, MA: D.C. Health
- Novaco, R. W. (1977). A stress inoculation approach to anger management in training of law enforcement officers. *American Journal of Community Psychology*, 5, 327-346.
- Novaco, R.W. (1995). Clinical problems of anger and its assessment and regulation through a stress coping skills approach. In W. O' Conner & L. Krasner (Eds.), *Handbook of Psychological Skills Training: Clinical techniques and applications* (pp. 320-338). Boston: Allyn & Bacon.
- Oliver, J. M. & Baumgart, E. P. (1985). The dysfunctional attitude scale: Psychometric properties and relation to depression in an unselected adult population. *Cognitive Therapy and Research*, 9(2), 161-167.
- Painly, N., Sharan, P., & Mattoo, S. K. (2005). Relationship of anger and anger attacks with depression. *European Archival Psychiatry Clinical Neuroscience*, 255, 215-222.
- Paquette, V., Levesque, J., Mensour, B., Leroux, J. M., Beaudoin, G., & Bourgouin, P. (2003). Change the mind and you change the brain: Effects of cognitive-behavioral therapy on the neural correlates of spider phobia. *Neuroimage*, 18, 401-409.

- Parkinson, B. (2001). Anger on and off the road. *British Journal of Psychology*, 92(2), 507-526.
- Parrott, D. J., Zeichner, A., & Evces, M. (2005). Effects of trait anger on cognitive processing of emotional stimuli. *Journal of General Psychology*, 132(1), 67-80.
- Plato (1951). In B. Radice (Ed.), *The symposium*. Translated by Walter Halmilton, Great Briton: Penguin.
- Popper, K. R. (1959). *The logic of discovery*. Oxford, England: Basic Books.
- PR Newswire Associates LLC. (2007). News poll reveals global economy's impact on working america: Rising anger and anxiety over corporate behavior, government inaction. <http://www.changetowin.org/>
- Ray, R. D., Wilhelm, F. H., & Gross, J. J. (2008). All in the mind's eye? Anger rumination and reappraisal. *Journal of Personality and Social Psychology*, 94(1), 133-145.
- Roese, N. J., & Olson, J. M. (1995). *What might have been: The social psychology of counterfactual thinking*. Hillsdale, NJ: Erlbaum.
- Rogers, C. R. (1959). A theory of therapy, personality, and interpersonal relationships, as developed in the client-centered framework. In S. Koch (Ed.), *Psychology: A study of a science* (Vol.3, pp. 184-256). New York: McGraw-Hill.
- Rosenfield, B. M. (2004). *The relationship between cognitive distortions and psychological disorders across diagnostic axes*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Rhodes, R. D., Harrison, D. W., & Demaree, H. A. (2002). Hostility as a moderator of

- physical reactivity and recovery to stress. *International Journal of Neuroscience*, 112, 167-186.
- Schieman, S. (2003). Socioeconomic status and the frequency of anger across the life course. *Sociological Perspectives*, 46(2), 207-222.
- Schum, J. L., Jorgensen, R. S., Verhaeghen, P., Sauro, M., & Thibodeau, R. (2003). Trait anger, anger expression, and ambulatory blood pressure: A meta-analytic review. *Journal of Behavioral Medicine*, 26 (5), 395-415.
- Scott, J., Williams, M. G., & Beck, A. T. (Eds.). (1989). *Cognitive therapy in clinical practice: An illustrative casebook*. New York: Routledge.
- Seyle, H. (1976). *The stress of life*. New York: McGraw-Hill. (Original work published 1956).
- Sheline, Y. I. (2003). Neuroimaging studies of mood disorder effects on the brain. *Biological Psychiatry*, 54, 338-352.
- Siever, L.J. (2008). Neurobiology of aggression and violence. *The American Journal of Psychiatry*, 165(4), 429-442.
- Simourd, D.J., & Mamuza, J.M. (2000). The hostile interpretations questionnaire: Psychometric properties and construct validity. *Criminal Justice and Behavior*, 27(5), 645-844.
- Siegel, J.M. (1986). The multidimensional anger inventory. *Journal of Personality and Social Psychology*, 51(1), 191-200.
- Smart, R. G., Mann, R. E., & Stoduto, G. (2003). The prevalence of road rage: Estimates from ontario. *Canadian Journal of Public Health*, 94, 247-250.
- Spielberger, C. D. (1999). *Manual for the State-Trait Anger Expression Inventory-2* :

- Professional Manual*. Odessa, FL : Psychological Assessment Resources.
- Spielberger, C. D. (2006). Cross-cultural assessment of emotional states and personality traits. *European Psychologist*, 11(4), 297-303.
- Spielberger, C. D., Jacobs, G., Russell, S., & Crane, R. S. (1983). Assessment of anger: The state-trait anger scale, In J. N. Butcher & C. D. Spielberger (Eds.), *Advances in personality assessment (Vol 2. pp. 161-190)*, Hillsdale, NJ: Erlbaum.
- Spielberger, C. D., Reheiser, E. C., & Sydeman, S. J. (1995). Measuring the experience, expression, and control of anger. In H. Kassinove (Ed.), *Anger disorders: Definition, diagnosis and treatment (pp.49-67)*. Washington, DC: Taylor & Francis.
- Spinella, M. (2007). Measuring the executive regulation of emotion with self-rating scales in a non-clinical population. *The Journal of General Psychology*, 134(1), 101-111.
- Sternberg, R. J. (1988). A triangular theory of love. *Psychological Review*, 93, 119-135.
- Sternberg, R.J. (1999). *Cognitive Psychology* (2nd ed.). Orlando: Harcourt Brace & Company.
- Strand, E. (2004). Anger can cause snap judgment. *Psychology Today*, 37(1), 18.
- Taylor, J. L., Novaco, R. W., Gillmer, B. T., Robertson, A., & Thorne, I. (2005). Individual cognitive-behavioral anger treatment for people with mild-borderline intellectual disabilities and histories of aggression: A control trial. *The British Journal of Clinical Psychology*, 44, 367-382.
- Taylor, J.L., Novaco, R.W., Oswald, D. (2005). The costs of unbridled anger. *American Psychology*, 50(48), [no page #].

- Tennant, C., & McLean, L. (2001). The impact of emotions on coronary heart disease risk. *Journal of Cardiovascular Risk*, 8, 175-183.
- Thibodeau, R., Jorgensen, R. S., Jonovich, S. J. (2008). Anger elicitation using affective pictures: An individual differences approach. *Journal of Individual Differences*, 29(2), 80-89.
- Thor, M. J. (2005). *Predicting treatment outcomes of an anger management treatment program using the stages of change model*. Unpublished doctoral dissertation, Adler School of Professional Psychology.
- Tsytsarev, S. V. & Grodnitzky, G. R. (1995). Anger and criminality. In H. Kassinove (Ed.), *Anger disorders: Definition, diagnosis and treatment (pp.91-108)*. Washington, DC: Taylor & Francis.
- Tuner, R. J., Russell, D., Glover, R., & Hutto, P. (2007). The social antecedents of anger proneness in young adulthood. *Journal of Health and Social Behavior*, 48(1), 68-84.
- Uhl, J. K. (2007). *The relationship between cognitive distortions and psychological and behavioral factors in a family medicine outpatient sample*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Whaley, D. (2007). *The relationship between distorted thinking of parents and their adult offspring*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Weil, A. (1997). *Eight weeks to optimum health*. New York: Alfred A. Knope, Inc.
- Weil, A. (1995). *Spontaneous healing*. New York: Ballantine Books.

- Weissman, A. N. (1979). The dysfunctional attitude scale validation study. *Dissertation Abstracts (3-b)*, 1389-1390.
- Weissman, A. N. (1979). *The dysfunctional attitude scale: A validation study*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Weissman, A. N., & Beck, A. T. (1978). *Development and validation of the dysfunctional attitudes scale: A preliminary investigation*. Paper presented at the annual meeting of the Educational Research Association, Toronto, Ontario, Canada.
- Wilkowski, B. M. & Robinson, M. D. (2008). The cognitive basis of trait anger and reactive aggression: An integrative analysis. *Society for Personality and Social Psychology*, 12(1), 3-21.
- Wyshak, G. (2000). Violence, mental health, substance abuse problems for women worldwide. *Healthcare for Women International*, 21, 7, 631-640.
- Yurica, C. (2002). *Inventory of cognitive distortions: Development and validation of a psychometric test for the measure of cognitive distortions*. Unpublished doctoral dissertation, Philadelphia College of Osteopathic Medicine.
- Zelin, M.L., Adler, G., & Myerson, P.G. (1972). Anger self-report: An objective questionnaire for the measurement of aggression. *Journal of Consulting and Clinical Psychology*, 55, 55-59.
- Zwemer, W. A., & Deffenbacher, J. L. (1984). Irrational beliefs, anger, and anxiety. *Journal of Counseling Psychology*, 31, 391-393.

Appendix
Introduction Letter

Dear Participant:

As part of Philadelphia College of Osteopathic Medicine Psychology's Department, we are currently conducting a study on the relationship between people's beliefs and attitudes in regards to their expression of anger. The effects of anger infiltrates into all our lives. However, we would like your help in better understanding why the influence of anger on some people, and not others, creates a challenge for living a safe, peaceful, emotionally and/or physically healthy life.

If you agree to participate in this study, then you will be expected to complete three questionnaires which will take about 25 minutes of your time. As part of this study you must be willing to agree in not sharing any of this information with anyone in this room including the investigators. **You are to remain anonymous as well as all your responses to all the questions.** However, your participation in this study is completely voluntary and you may decide not to participate or to discontinue your participation at any point with no questions asked or consequences to you.

The items in these questionnaires ask about your feelings, thoughts, behaviors, and other personal information. You may find participating in this study was a positive experience in which you learned a few things that you did not know about yourself. However, some people may experience some discomfort upon completion. In the unlikely event that this should occur, please contact the closest mental health agency in your community or your family doctor.

Please remember that you are to remain anonymous. Therefore, do not sign/put your name on any of the questionnaires despite its request for your name and the date. Thank you for the time and effort in considering your participation in today's study.

If you are interested in the results of the study, you may contact one of the investigators by the following e-mail address: dorothylz@comcast.net

Sincere appreciation for your participation today,

Dorothy Latella-Zakhireh, M.Ed., M.A., Psy.D Candidate
Robert A. DiTomasso, Ph.D., Dissertation Chair, Professor
Philadelphia College of Osteopathic Medicine
Department of Psychology
4190 City Avenue
Philadelphia, PA 19120

Appendix

Participation Criteria

Please read this BEFORE opening this envelope.

Before opening the envelope please answer the following questions by circling either the yes or no response to determine your status for participation in today's study. Thank You

1. Are you younger than 18 years?
Yes or No
2. Do you have a learning disability?
Yes or No
3. Do you have trouble seeing what you read?
Yes or No
4. Do you have trouble understanding what you read?
Yes or No
5. Did you ever sustain a mild brain injury through any of the following conditions: car accident, tumor, stroke, sport accident, falling, infection of the brain, or other?
Yes or No
6. Are you being treated for depression by a doctor?
Yes or No
7. Are you being treated for anxiety by a doctor?
Yes or No
8. Are you being treated for any other mental health issue?
Yes or No

If you answered YES to any of the above questions:

Please place this form and the yellow folder into the 12" x 15" envelope. Seal the envelope and return it to the examiner. Thank you

If you answered No to all the above questions then continue on to the next page titled General Instructions. Thank you

Appendix

General Instructions

PLEASE READ THIS BEFORE STARTING. THANKS

1. If you are reading this note then you have met all the requirements to participate in this study.
2. This envelope will contain a demographic page asking you some basic questions, and a set of three surveys for you to fill out. Completed forms are to be placed in this envelope and sealed.
3. Please read and follow all directions at the top of all pages and surveys.
4. PLEASE PRINT LEGIBLY
5. Remember do not put your name on any of the forms.
6. Remember, do not share this information with each other
7. If you have any questions while filling out any of this information then raise your hand and the researcher will answer any of your questions.

Sincere appreciation for your participation today,

Dorothy Latella-Zakhireh, M.Ed., M.A., Psy.D Candidate

Robert A. DiTomasso, Ph.D., Dissertation Chair, Professor

DEMOGRAPHIC INFORMATION

Circle the appropriate response or fill in the blank line (please print legibly). Use the back of this form if you need more space. Remember that your responses to this survey are completely anonymous.

1. What is your gender?
a) Male b) Female Age: _____

2. What is your status?
a) Married b) Widower c) Never been married d) Divorced

3. What is your Race?
a) White b) African-American c) Latino d) Asian e) other _____

4. What is your educational level?
a) Less than High School b) High School d) Some College e) BA/BS
f) Masters g) Professional/Doctorate

5. Employment level?
a) Working b) Retired c) Unemployed d) In-between jobs

6. What is/was you occupation? _____

7. Current Annual Income?
a) 15,000 to 25,000 b) 25,000 to 35,000 c) 35,000 to 45,000 d) 50,000 +
e) 100,000 and over