

A Literature Review and Analysis of Mode Deactivation Therapy

Jack A. Apsche

Abstract

This article is a review of articles, chapters and current research examining Mode Deactivation Therapy. Current applications of MDT suggest that mindfulness is a core component of MDT, as well as acceptance, defusion and validation, clarification and redirection of the functional alternative beliefs. These components are the core of MDT and a recent study has evaluated each of them as to how it affects the target or outcome goals. The evolution of MDT is reviewed from case studies to a mediation and meta-analysis. The purpose of this article is to review the foundation of MDT and current articles that elucidate the efficaciousness of MDT as an evidenced – based methodology.

Keywords: Acceptance and Commitment Therapy (ACT), Cognitive Behavior Therapy (CBT), Mode Deactivation Therapy (MDT), Post traumatic Stress Disorder (PTSD), Mediation analysis, Mindfulness, Meta analysis, Physical aggression, Sexual aggression.

Introduction

In the process of treatment research trials and development of MDT, this methodology (MDT) has been compared to the alternative methodologies such as: Cognitive Behavior Therapy (CBT), Dialectical Behavior Therapy (DBT) and Social Skills Training. This review examines the literature of MDT in treating adolescent clients with reactive emotional dysregulation, who presented with behaviors including parasuicidal acts, verbal and physical aggression and sexually aberrant behavior. Case studies in this article involved clients with complicated histories of sexual, physical, or emotional abuse, as well as neglect and multi-axial diagnoses. Data indicates that MDT is effective in reducing the rate of physical and sexual aggression in addition to symptoms of Post Traumatic Stress Disorder. Given the prevalence of conduct disorders and its major contribution to juvenile anti-social behavior, societal violence, sexual violence and delinquency, there appears to be an urgent need for empirically based treatment methods for such youth. There were several interventions implemented to reduce antisocial behavior in disruptive disorders. Because many clinicians conducted therapy in a more eclectic fashion, the problem encountered was difficulty identifying efficient treatments which could be effective in many treatment environments. Other researchers conducting a review of treatments for children and adolescents were they identified 82 studies carried out between 1966 and 1995 involving 5,272 youth. Of the 82 studies, they discovered that many were not well established with empirical validation, and many more did not indicate efficacious treatment. There were problems with identifying a comprehensive treatment approach that showed suitability, reliability and external validity. Unlike findings involving treatment provided by clinicians who worked primarily in inpatient settings using structured empirically validated treatments, the finding of empirically validated studies that examined outpatient therapeutic practices with conduct disordered adolescents were scarce. While it was noted that some evidence-based treatment practices existed for children with Conduct Disorder, it was not established that for adolescents over 14 years of age. This article presents a complete overview of MDT, delineating its origin from CBT, ACT, DBT and Functional Analytic Psychotherapy Therapy (FAP) as well as reviewing the current adaptation of mindfulness techniques of MDT that are soon to be published. A brief review of the mindfulness manual is included as well.

Elements from Several Behavior Therapies

Originating from CBT, ACT and DBT, MDT also incorporates principles from FAP (Kohlenberg and Tsai, 1993; Tsai, Kohlenberg, Kantner, Kohlenberg, Follette, Callaghan, 2009). First, MDT aligns with FAP in examining how change is made in a therapy session, specifically the notion that behavior is shaped and often maintained by contingencies of reinforcement. This “learning” happens out of the consciousness of the client and therapist or experientially, while often they focus in the now, didactic type of cognition.

Acceptance and Commitment Therapy and MDT both also address the individual's experiential avoidance of difficult or painful thoughts and emotions, by implementing both cognitive and emotional defusion. Cognitive and emotional defusion are the processes that humans learn to avoid painful stimuli, either in thought or emotion. In short, if something elicits pain, often we tend to avoid it, in thought or feeling. Hayes (2004) suggests that we often pair feelings with conditions, such as, "I was happy once, prior to my abuse", "I cannot enjoy the sunset anymore, since I was abused." Hayes suggests that the coercive stimuli (psychological pain) of the past cannot be reduced through simple situational solutions. We avoid that which is painful.

Acceptance and Commitment Therapy (ACT) (Hayes, 2004) and MDT also are both deeply rooted in mindfulness. However, MDT's mindfulness practices are significantly from ACT, as they are designed specifically for adolescents and include mindfulness, meditation and imagery (Apsche, 2010). MDT also uses an assessment and Case Conceptualization method that combines elements from Beck's (1996) case conceptualization and the Problem Solving Cognitive Behavioral Therapy model of Nezu, Nezu, Friedman and Haynes (1998). Third, MDT and FAP engage in in-session reinforcement immediately following the client response and continue to reinforce in-session and out of session responses.

MDT also has similarities to ACT, (Hayes, Strosahl, Wilson, 1999). Both ACT and MDT implement the concept of acceptance of one's self as you are in the moment, then moving forward with all of the thoughts, feelings, and issues, instead of trying to change their distorted thinking. The assessment and case conceptualization procedure concentrates on core beliefs, fears and avoidance behaviors that are reflective of the Post-Traumatic Stress Disorder and developing personality disorders (Apsche and Ward Bailey, 2003, 2004b, 2004c). Therefore, MDT should also be classified as a trauma informed methodology.

MDT and Trauma

MDT treats trauma by addressing the underlying fear, avoids paradigm individuals avoid what they fear (Apsche, & DiMeo, 2010) as follows:

- *Mindfulness*: This component of MDT reduces the strength of the behavioral manifestations of fear and anxiety. Apsche (2010) in a mediation analysis/meta-analysis article demonstrates this as youth in this study had significant reduction in fear as evidenced by the Strength of Fears Assessment.
- *Acceptance/Defusion*: These components of MDT reduce the youth's avoidance scores and the Anxiety Control Questionnaire (ACQ). Acceptance and defusion in MDT are implemented together and allow the youth to experience and accept his/her pain as part of the human condition and by doing so he/she cognitively and emotionally defuses the strength of the avoidance.
- *Validate-Clarify-Redirect the Functional Alternative Beliefs*: This component of MDT allows the youth to address personality beliefs. These beliefs are measured by the Compound Core Beliefs Questionnaire (CCBQ). The personality beliefs are part of the individual's response to trauma.

These components of MDT have been shown to reduce the specific mediators of fears, avoidances and personality beliefs in youth exhibiting behaviors including: verbal and physical aggression, sexual reaction, and self-harm.

Theoretical Constructs

The theoretical constructs of MDT are based on Beck's Mode Model (1996), which suggests that people learn from unconscious experiential components and cognitive structural processing components (Apsche, Ward, & Evile, 2003). Therefore, to change the behavior of individuals there must be a restructuring of the experiential components and a corresponding cognitive reformation of the structural components. Mode Deactivation Therapy is an empirically based methodology that systematically assesses and restructures compound core beliefs (Apsche & Ward, 2003). Beck suggests that his model of individual schemas (linear schematic processing) does not adequately

address a number of psychological problems; as a result, he proposes a system of modes. He describes modes as a network of cognitive, affective, motivational, and behavioral components; indicating that modes consist of integrated sectors of sub-organizations of personality that are designed to deal with specific demands to problems. These sub-organizations help individuals solve problems such as the adaptation of adolescents with a history of abuse to strategies of protection and mistrust.

Beck (1996) also states that these modes are charged, thereby explaining the fluctuations in the intensity gradients of cognitive structures. The modes are charged by fears and dangers that set off a system of modes to avoid the fear. Modes are then activated by charging related to the perceived danger in the “fear ↔ avoids” paradigm setting off a chain of reactions in the individual: a) the orienting schema signals danger, and activates or charges all systems of the mode; b) the affective system signals the onset and increasing levels of anxiety; c) the beliefs are activated simultaneously reacting to the danger, fear ↔ avoids, and physiological system; and, d) the motivational system signals the impulse to the attack and avoids (flight or fight) system.

Understanding modes is important in treating the population served by MDT, especially juvenile sex offenders, since these youth are particularly sensitive to danger and fear, which charge their modes; this includes an awareness of conscious and unconscious fears being charged, and the activation of the mode system. It explains the level of emotional dysregulation and impulse control issues indicated in the typology of these young clients (Apsche & Ward, 2003).

Core Components

In MDT the core beliefs (or schemas) of the individual are not perceived or challenged as dysfunctional because this action invalidates the person’s life experience. The client’s Functional Alternative Beliefs (FAB) is accepted as truths in the client’s life by the therapist and the client. Functional Alternative Beliefs are consistently validated as legitimate and are seen as developing as a result of the person’s life experiences - no matter how irrational, and even if the reality of the belief is imperceptible to observers. It is presumed that the client’s belief system is not distorted, and although perhaps unbalanced, it is derived from a “grain of truth” in his perception. These beliefs are consequently “balanced” through a collaborative therapeutic process with the goal of deactivating the maladaptive mode responses or life interrupting behavior(s).

An integral part of MDT is the concept of Validate, Clarify, and Redirect (VCR). Validation was defined by Linehan (1993) as the therapist’s ability to uncover the validity within the client’s belief. MDT uses the balance the FAB technique to remediate the youth’s emotional dysregulation. VCR employs unconditional acceptance and validation of the youth’s cognitive unconscious or out-of-awareness learning experience. Given the youth’s background and history, MDT espouses that the youth is exactly where and how he should be as a person with his experiences. The clarification offers an alternative explanation of the youth’s circumstances and history, and the redirection measures the “possible acceptance” of a slightly different belief. MDT incorporates DBT concepts in its use of balancing the dichotomous or dialectical thinking of the client. These modalities teach a client who often engages in dichotomous “all or nothing” thinking that his perception can fall within the range of a continuum, rather than only a 1 or a 10 (all or nothing). The resulting validation and learning process are the basis for positive redirection toward a new awareness for the client (Apsche & DiMeo, 2010).

By readdressing client-endorsed beliefs, MDT explores underlying perceptions that may set in motion the mode related charge of problem schemas, thus enabling further behavior integration of DBT principles in treating sex offending or aggressive behaviors (Linehan, 1993). Many of Linehan’s teachings describe radical acceptance and examining the “truth” in each client’s perceptions. As previously mentioned, this methodology of finding the “grain of truth” in the perception of the adolescent is crucial to the effectiveness of MDT. Its effectiveness can be measured as an empirically-based and driven treatment, and it is designed to assess and treat a conglomerate of personality traits and beliefs, as well as to remediate aggression and sexual offending. The redirection component of VCR assists the client to consider responses to other views, or alternative possibilities on his continuum of truths. There are

numerous continuums implemented as scales from 1 to 10 to evaluate areas such as truth, trust, fear, and beliefs. These continuums are essential to MDT in that they give both the client and the therapist an empirical measurement of the client's spectrum of perceived truth.

Functional Analytic Psychotherapy (Kohlenberg & Tsai, 1993) theory states that people act based on reinforcement contingencies. Although FAP takes into consideration that cognitions are involved, the focus is on the deeper unconscious motivations that were formed as a result of past contingencies. Perception is based on past contingencies. Therefore, reality and the concept of reality reflect what has been experienced in the past. Considering reinforcement history in the context of a person provides the MDT-informed clinician with a more complete assessment of the specific behaviors of that person.

Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 1999; Greco & Hayes, 2008), based on Relational Frame Theory, is an empirically-based intervention that uses acceptance and mindfulness, along with commitment and behavior change strategies, to help clients learn how to make healthy contacts with thoughts, feelings, memories, and physical sensations that caused them fear or discomfort. Acceptance and Commitment Therapy techniques, such as: acceptance, mindfulness, and defusion (Greco & Hayes, 2008), are cornerstones of current MDT practice. Clearly, however, an adaptation is necessary since the individuals MDT treats have long histories of sexual, physical, and/or emotional abuse. Often they respond in ways that are interpreted as characteristic of personality and/or conduct disorders. These are youngsters that may respond by committing sexual offenses, aggressive acts, and/or other aberrant behaviors. Mode Deactivation Therapy is a methodology that addresses dysfunctional schemas through systematically assessing and restructuring underlying compound core beliefs - beliefs that often found their genesis in trauma experiences. Table 1 presents a comparison of MDT and CBT across different competencies to further clarify some of the MDT core components.

MDT Mindfulness

Based on the work of Greco and Hayes (2008) and Apsche & Bass (2010), and following Buddhist traditions, MDT incorporates a series of mindfulness exercises that are specifically designed for adolescents. The youth practice techniques which help ensure trust, reduce anxiety, and increase commitment to treatment as mindfulness skills are developed. These exercises are then translated into brief, safe relaxation exercises to promote awareness of where the youth is with his emotions and feelings. Following is an example of a mindfulness script used by MDT clinicians:

Awareness or being aware of your thoughts, feelings, and even bodily sensations is important to living a happy successful life. Self-awareness is the first step in being aware and empathetic of others' feelings and emotions. However, to be aware of others' feelings and emotions you must first be aware of your own. The following three steps will assist you in attaining this self-awareness; see Apsche (2010).

1. Awareness

Observe and notice your surroundings, thoughts, feelings, and different bodily sensations. Are you thinking about being on the beach right now? Do you feel relaxed like you are at the beach? Or are you thinking about a peer who is giving you a hard time and feel tense? What you're thinking is affecting how you are feeling, therefore your physical body is reacting.

2. Describe

Put your observations into words and say how you feel. You can start by saying what you see, describe to yourself the "scene" that you are seeing in your mind. What, where, whom are you thinking about? Does this "scene" make you feel positive or negative, anxious or exited? If you don't want to say it out loud, write it down!

3. Redirect Yourself

*Slowly redirect your attention to your breath. Follow your breath-in...and...out.
Breathe in...count one...*

Expand yourself...
Slowly...
Expand your attention to your whole body...
Try to sense any discomfort, tension, or resistance...
Just feel whatever you feel...breathe in...breathe out...
Allow yourself to feel whatever you feel.
Become aware of your feelings.
You have experienced a piece of Mindfulness and Awareness.

Therapeutic Mindfulness Is:
Awareness of present experiences
Acceptance of self

Acceptance is also simple. You accept yourself as you are now. You are who you are supposed to be, given your life and experience. All the things in your life have helped create who you are and where you are. This acceptance is important, in that, if you are now here, and you are who and where you are, so you have experienced acceptance.

Impact of Proactive and Reactive Aggression

According to Dodge, Lochman, Harnish, Bates, and Pettit (1997), there are two sub-groups of aggressive conduct type youngsters: proactive and reactive. The first, proactive, derives benefits and rewards from aggression; the second sub-type, reactive, operates from a construct of emotional dysregulation. Brown, Atkins, Osbourne, and Milnamow (1996) state that proactive aggression is defined as an unprovoked, aversive behavior intended to harm, dominate, or coerce another person; while reactive aggression, considered to be a defensive response to a perceived threat, fear, or provocation, has theoretical roots in the frustration – aggression model posited by Dollard, Doob, Miller, Mowrer, and Sears (1939) and later revised by Berkowitz (1990). Forty percent of reactive adolescents have multiple personality traits (Dodge et al., 1997). It appears that reactive conduct disordered adolescents emotionally dysregulate and many of their aberrant responses are results of this emotional dysregulation. Furthermore, although it seems that proactive and reactive aggression are statistically related (Dodge & Coie, 1987), there seem to be uniquely different correlates to each subtype of aggression.

Koenigsberg, , Mitropoulou, Goodman, Silverman, Serby, Schopick & Siever (2001) indicate that many types of aggression, including self-destructive behavior, are linked to the personality disordered traits of affective instability and impulsivity, also seen as emotional dysregulation. Based on research and clinical experience with violent and sexually aggressive youth, Apsche (2010) suggests that this common phenomenon of “emotional dysregulation” is the same process that Beck (1996) described as “modes”, which demands treatment modification in order to accommodate and address each individual’s particular needs and consequently be more effective.

Personality Disorder Co morbidity and MDT Conglomerate of Compound Core Beliefs

Youth with long histories of sexual, physical, and/or emotional abuse often respond in ways that may also translate into personality disorders and/or conduct disorders. Johnson, Cohen, Brown, Smailes, and Bernstein (1999) compiled a longitudinal study that demonstrated that persons with documented childhood abuse and neglect were four times more likely to have been diagnosed with personality disorders during early adulthood. Childhood verbal, physical and sexual abuse, and neglect were associated with symptoms of personality disorders and elevated personality disorders in adolescence and in early adulthood (Johnson et al., 2001; Johnson, Smailes, Cohen, Brown, & Bernstein, 2000).

Apsche and Bass (2006) describe how in a survey of 120 adolescent males in a residential facility, 93% of the residents were victims of all of the following four types of abuse: sexual, physical, verbal, and neglect. When

there is such prevalent abuse, it is necessary to address the development of personality disorders in these adolescent males (Johnson et al. 1999, 2001; Johnson, Cohen et al., 2000). The MDT Compound Core Belief Questionnaire (CCBQ) was developed to address these personality beliefs. Apsche et al. (2005) indicate that a number of juvenile sex offenders have mixed personality traits, including clusters B's and C's. The CCBQ is designed to assess and identify mixed personality disorders and other personality traits and beliefs.

The MDT case conceptualization process includes identifying the underlying compound core beliefs that are generated in the development of personality disorders since the typologies of adolescents have a conglomerate of compound core beliefs associated with personality beliefs (Apsche & Ward, 2003b). Findings suggest that the nature and dynamics of the conglomerate of beliefs are at the crux of why typical treatment often fails these youngsters. Sex offending and aggression cannot be successfully treated without understanding the operant application of the individual's conglomerate beliefs. It is apparent that these beliefs are not cluster specific; this is to say that the MDT Conglomerate of Beliefs and Behaviors can involve beliefs connected to more than one personality disorder and may integrate with one another. Because of this complex integration of beliefs, treatment for this typology in the youngster's schema is more complex.

The MDT Conglomerate of Compound Core Beliefs represents a system of protection for the individual from his abuse issues, which may present as being treatment interfering. The attempt to use standardized didactic approaches to treatment, without addressing the convoluted nature of the beliefs, can amount to treatment interfering behavior on the part of the clinician. This may also be referred to as clinical unattractiveness, and may cause what is perceived as "client resistance". MDT counters client resistance with validation of the youth's self-perception of "truth."

From Cognitive Therapy to Mode Deactivation

In his work on the Theory of Modes, Beck (1996) suggested that there might have been flaws with his cognitive theory. He suggested that though there are shortcomings with his cognitive theory, there were not similar shortcomings to the practice of Cognitive Therapy. The author suggests that if there are shortcomings to cognitive theory the same shortcomings may apply to cognitive therapy. The author cites other work that indicates these same shortcomings, and suggests a modification to cognitive therapy as a "mode deactivation" therapy. The conversion of Beck's (1996) theory of modes to an applied methodology has been difficult, in that it is suggested that there are limitations to standard schematic processing for clinical interventions. These limitations to an empirically validated methodology require carefully constructed theoretical and clinical content as an alternative methodology. Beck (1996) introduced the concept of modes to address the criticisms and shortcomings of cognitive theory. Cognitive theory and Cognitive Behavior Therapy have shown limitations when addressing specific phenomenon within the context of clinical and experimental findings. Beck states, "It has become apparent over the years that the theory (schematic processing) does not fully explain many clinical phenomena and experimental findings". Beck's words are powerful and pose many questions for cognitive therapists and theorists. If the theoretical constructs that cognitive therapy is based on do not fully explain these clinical phenomena, then is it not logical that the clinical methodology is *flawed* in treating individuals who pose clinical syndromes similar to what Beck describes? The recurring question that must be addressed is: If cognitive theory has shortcomings, does it not follow then, that Cognitive Behavior Therapy has limitations as well?

To answer the question posed, it is necessary to examine specific issues that Beck (1996) suggests are problems not adequately addressed by the model of schematic processing. These problems are specifically the eleven items detailed by Beck (1996) p6.151-152. These items are reviewed in detail, as they suggest that possibly a more adaptive methodology is required to address the shortcomings of schematic processing.

The shortcomings of his schematic processing theory are as follows:

1. "There is a "multiplicity of related symptoms encompassing the cognitive, affective, motivational and behavioral domains in psychopathological conditions." (pg.1)
2. "Methodology indicates "evidence of systematic biases across many domains suggesting that a more global and complex organization of schemas is involved in intense psychological reactions." (pg.2)
3. "There is a prevalence of "findings of a specific vulnerability (or diathesis) to specific stressors that are congruent with a particular disorder." (pg.2)
4. "There is a "great variety of 'normal' psychological reactions evoked by the myriad of life's circumstances." (pg.2)
5. "Inadequate handling of "dynamic 'relation of content, structure and function in personality.'" (pg.2)
6. "Observations of the variations in the intensity of an individuals' specific reaction to a given set of circumstances over time." (pg.2)
7. "Consideration of the "phenomena of sensitization (kindling phenomenon): Successive recurrences of a disorder," such as depression, "triggered by progressively less intense experiences." (pg.2)
8. "The possibility "remission of symptoms by either pharmacotherapy or psychotherapy." (pg.2)
9. "Application of "apparent continuity of many psychopathological phenomena with personality." (pg.2)
10. "A consideration of "the relevance of the model to normal 'moods'". (pg.2)
11. "An understanding of the relationship of consciousness and unconscious processing of information. (pg.2)

These are problems discussed by the originator of the theory and archetype of clinical application of the cognitive therapy. If, as Beck states, there is a need to expand the theoretical mode, then there might be an equal need to expand the clinical model of intervention to adapt to the theoretical considerations in an applied methodology. First, it is important to examine Beck's list of problems with the schematic processing model, from a global perspective. Apsche (2005) offers a methodology of cognitive behavior therapy to expand the model of CBT and incorporate Beck's system of modes (1996), Apsche (2005) attempts to expand the model of schema processing and respond to Beck's suggestions of Modes, further offering a more global construct than Cognitive theory and additional refinements related to progress in the field (Apsche, 2005).

When reviewing Beck's first point, it can be surmised that Beck is referring to the complications and multi-axis issues, of both the Axis I and Axis II, as they merge into the multiplicity of symptoms. He suggests that there is a schema overload because to the interplay of these type of symptoms and behaviors. It may be that the ability of schema processing is limited in explaining the volatile nature of these disorders, and the blurring of the cognitive, affective and motivational systems because of the nature of the psychopathological conditions.

When Beck discusses "specific vulnerability or diathesis" he seems to refer to specific stressors or psychological vulnerabilities that appear to be congruent with a particular disorder. These disorders serve as charges for Beck's concept of modes. He continues to examine the great variety of "normal" psychological problems evoked by the "myriad of life's circumstances," that affect the mode. These life circumstances of normal individuals appear to activate what Beck refers to as normal psychological problems. If individuals have experienced abnormal trauma, or extremely harsh life experiences, it is safe to assume that these circumstances would be inherently more complicated.

It is indicated that in suggesting a "systematic bias", Beck is referring to a more complex and global organization of schemas that are confounded due to intense psychological responses. This might suggest that in clinical practice these disorders are not neatly ensconced in a single delineated schema. They appear to be a product of the blending of the complexities of Axis I and Axis II disorders. Depression for instance, may be schematically blended with anxiety and Cluster B disorders. These complex schemas may be dormant, waiting for a charge to activate them. These schemas are only a part of a complex system of modes that transcend currently held concepts of cognitive therapy.

Two important Beck points remaining involve the relationship between the unconscious and conscious processing of internalized information. The conventional perspective of mode theory examines only the conscious process and does not account for the unconscious learning. In addition to awareness of this limitation, it is also important to bear in mind that prior to the "negative thought", these are unconscious "triggers" that ignite the activation of psychological and related reactions. This also accounts for why Beck suggests that there is a kindling phenomenon that activates the trigger toward disorders with less intense experiences. This phenomenon is not explained by current theoretical or applied methodologies in cognitive theory or cognitive therapy.

Experiential learning takes place in the cognitive unconscious. It is the process of learning from one's life experiences, both positive and negative. If this learning is negative or invalidating, then the individual's beliefs are shaped to respond to dangers and invalidation of their world. The individual views the world as dangerous and his or her experiences have been as dangerous as their perceptions of the world. These perceptions and the reaction to these perceptions are triggers for a system of primitive responses, as well as fears and beliefs that activate their survival responses, or survival modes. Beck, (1996) clearly opened the possibility that individuals not only process information, but also learn from their unconscious experiences. Therefore, it might be necessary to address both levels of learning in therapy, rather than simply the thought process, as the cognitive model address, (Apsche, 2005).

Behavior Analysis of MDT

Mode Deactivation Therapy incorporates principles from Functional Analytic Behavioral Therapy (FAB). First, MDT aligns with FAB in affirming that perceptions of reality and unconscious motivations evolve from past contingencies of reinforcement, such as families of origin. Functional Analytic Psychotherapy is a psychotherapy developed by Robert Kohlenberg and Mavis Tsai at the University of Washington. Sloane (1992) defines behavior analysis as an attempt to understand behavior rather than mental aspects of a disease. He examines the model behaviors by examining individual problems as a series of behaviors rather than a diagnosis. Behavior analysis does not assume that there are medical, or disease causes for inappropriate behaviors (Hayes, 2004). Variations in behavior are related to events that take place in the real world. According to Sloane (1992), operants and reflexes are the two major classes of behavior. Operants, or voluntary behaviors, include most of the things one does on a daily basis. Consequences are events that follow operants, and influence whether or not a behavior is likely to occur again under similar circumstances. Reflexes, or respondents, are automatic responses to stimuli. They are frequently physiological, and are not usually influenced by consequences. Behavior analysis suggests that most everyday behavior is operant in nature, not respondent; therefore, behavior changes as the environment changes, creating the possibility of a variety of consequences. Hayes (2004) defines the third wave behavior therapy as follows:

“Based in an empirical, principle-focused approach, the third wave behavioral and cognitive therapy is particularly sensitive to the context and functions of psychological phenomena, not just their form, and thus tends to emphasize contextual and experiential change strategies in addition to more direct and didactic ones. These treatments tend to seek the construction on broad, flexible and effective repertoires over an eliminative approach to narrowly defined problems, and to emphasize the relevance of the issues they examine for clinicians as well as clients. The third wave reformulates and synthesizes previous generations of behavioral and cognitive therapy and carries them forward into questions, issues and domains previously addressed primarily by other traditions, in hopes of both improving both understanding and outcomes.” (pg. 651-652)

Mode Deactivation Therapy, much like ACT, follows the specifics of behavior therapy traditions, but does not require a “sole-commitment” to change. Also, as in ACT, MDT adopts some contextual assumptions as well as more experiential and “indirect change” strategies as such the focus of change considerably broadened. The theoretical constructs of MDT are based on Beck’s Mode Model (Beck, 1996) suggesting that people learn from unconscious experiential components and cognitive structural processing components, (Apsche, Ward & Evile, 2003). Therefore, to change behavior of individuals there must be a restructuring of the experiential components and a corresponding cognitive reformation of the structural components. Mode Deactivation Therapy is an empirically based methodology that systematically assesses and restructures dysfunctional compound core beliefs, (Apsche & Ward, 2003).

Modes and Behavioral theory

Beck (1996) suggests that his model of individual schemas (linear schematic processing) does not adequately address a number of psychological problems; therefore he suggests the system of modes. Beck described modes as a network of cognitive, affective, motivational and behavioral components. He suggests that modes consist of integrated sectors of sub-organizations of personality that are designed to deal with specific demands to problems. These sub-organizations help individuals solve problems such as the adaptation of adolescents to strategies of protection and mistrust when they have been abused (Beck, 1996).

Beck also suggests that these modes are charged, thereby explaining the fluctuations in the intensity gradients of cognitive structures. They are charged by fears and dangers that set off a system of modes to protect the fear. Modes activate by charging related to the danger in the fear ↔ avoids paradigm. The orienting schema signals danger and then activates or charges all systems of the mode. The affective system signals the onset and increasing level(s) of anxiety. The beliefs are activated simultaneously reacting to the danger, fear ↔ avoids paradigm/process and physiological system. The motivational system signals the impulse to the attack and avoids (flight or fight) system. The physiological system influences the heart rate or blood pressure, the tightening of muscles, etc. According to Dodge, Lochman, Harnish, Bates and Pettit, (1997), there are two sub-groups of aggressive conduct type youngsters. These sub-groups are the proactive and reactive. The first, proactive, derives benefits and rewards from aggression; the second sub-type, reactive, operates from a construct of emotional dysregulation. Brown, Atkins, Osbourne & Millnamow(1996), state that proactive aggression is defined as an unprovoked, aversive behavior intended to harm, dominate, or coerce another person. Reactive aggression, considered to be a defensive response to a perceived threat, fear, or provocation, has theoretical roots in the frustration – aggression model posited by Dollard, Doob, Miller, Mowrer, and Sears (1939) and later revised by Berkowitz (1990). Forty percent of reactive adolescents have multiple personality traits (Dodge, et. al., 1997). It appears that Reactive Conduct Disorder adolescents emotionally dysregulate and many of their aberrant responses are results of this emotional dysregulation. It was reported that proactive and reactive aggression are statistically related (Dodge & Coie, 1987), there seems to be uniquely different correlates to each subtype of aggression.

There are a series of studies that provide evidence that reactive aggression tends to be associated with negative affect and elevated levels of sadness and unhappiness, (Card and Little, 2006; Miller & Lynam , 2006; Raine et al. 2006). Conner, Duberstein, Conwell & Cane (2003) suggest that reactive aggression may be a risk factor for suicidal ideation and behavior. Moreover, Links, Gould & Ratnayake (2004) suggest that adolescents with Cluster B personality traits are at greater risk for lethal suicidal behaviors. Apsche, Bass & Siv (2006) suggests a relationship between reactive aggression and accelerated scores on measures of personality traits, e.g. the Compound Core Belief Questionnaire; Apsche (1999). Apsche , Bass & Siv (2006) have demonstrated a correlation between reactive aggression and accelerated scores on the CCBQ as an empirically supported assessment.

The tools used in MDT to measure proactive and reactive characteristics are built upon educational measurements. Brown, Atkins, Osbourne & Millnamaw (1996) expanded upon the earlier version of the teacher ratings scale (Dodge et.al., 1997), from six to twenty-eight questions. Similar to the Dodge rating scale, Brown et al.,

(1996) focused on younger children in kindergarten and first grade. Apsche (2009) has adapted these methodologies and developed a rating scale for adolescents ages 14 thru 17. The purpose is to support the hypothesis that children might have characteristics of both reactive and proactive and these might be viewed on a continuum from 1 thru 10. Scores of one to five represent gradients of reactive aggression and scores of six to ten represent gradients of proactive aggression. The scoring of the questionnaire presents a reactive and a proactive score and a mean score to determine the actual level and type of aggression. See Figure 1.

Reactive anger is characterized by impulsive and reflective aggressive behavior that occurs in response to a perceived threat from another, which may or may not be intended. Impulsivity and reflexive behaviors also place adolescents at risk for suicidal behavior. (Eisenberg et al. 2001; Valente et al., 2003). Greening et al., 2008, Brent et al., 2003; Brent & Mann, 2006), suggests that the presence of impulsivity and aggression places children at a greater risk for suicide. Only one unreplicated study suggests that reactive aggression is a risk factor for suicide and found among male adults high levels of reactive aggression during late adolescence was associated by a successful suicide by age 36 (Angst and Clayton, 1998). Fite, Stoppelbein and Greening (2009) suggest that reactive aggression was uniquely associated with high levels of depressive symptoms and suicidal behavior. Previous research also suggests that reactive aggression, not proactive aggression is associated with high levels of internalized symptoms (Card and Little, 2006).

Fite, Stoppelbein & Greening (2009) also delineate that the internalized problems many not be evident to the outside observer (Kramer & Zimmerman, 2009 ; Kolko and Kazdin 1993). Also problematic are depressive symptoms that are linked to a host of negative outcomes in the long term and continued interpersonal difficulties and substance abuse (Lochman & Wells, 2004). It appears that proactive aggression is associated with callous unemotional traits and a unique prediction of antisocial behavior; whereas reactive aggression is associated with internalizing affective disorders and not a prediction of antisocial behavior (Fite , Stoppelbein & Greening , 2009).

Koenigsberg's work addressed associated aggression and associated suicidal threats and gestures with emotional dysregulation. Mode Deactivation Therapy Case Conceptualization methodology provides the framework to assess and treat these complicated typologies of adolescents and integrate them into a functionally-based treatment.

MDT Methodology as a Collaborative Process for Case Conceptualization

Crucial to MDT methodology is the Case Conceptualization. Mode Deactivation Therapy Case Conceptualization is a combination of Beck's (1996) case conceptualization and Nezu, Nezu, Friedman, and Haynes's (1998) problem solving model, with several new assessments and methodologies recently developed. The goal of conceptualizing the "case" is to provide a blueprint for treatment. The objective of treatment is to deactivate the Fear→ Avoids→ Compound Core Beliefs mode and teach emotional regulations through the balancing of beliefs.

Apsche & Ward, (2003), assert that part of the design of the MDT case methodology is intended to create a functional team-based Mode Deactivation approach. The team operates within the implementation guidelines, focusing all efforts in a concerted manner; one tape, one chapter and one group at a time. Clinical energies are directed toward assisting the client to master and implement the MDT concepts and skills. By systematically assessing and restructuring these beliefs, MDT addresses underlying perceptions that may be applicable to setting in motion the mode related charge of aberrant schemas. This lends to the behavioral integration of Dialectic Behavioral Therapy (DBT) principles of Linehan (1993) in treating of sex offending or aggressive behavior, as indicated by Kohlenberg & Tsai (1993), Hayes (2004), and Apsche, et. al. (2003).

Fear, Avoids and Modes

Understanding modes is important to treating the population served by MDT, in that these youth are particularly sensitive to danger and fear, which charge their modes. Additionally, modes are crucial to an awareness

of conscious and unconscious fears being charged and activation of the mode system. This explains the level of emotional dysregulation and impulse control issues indicated in the typology of the young client (Apsche & Ward, 2003).

With long histories of sexual, physical, and/or emotional abuse, these youth often respond in ways that are translated into personality disorders and/or conduct disorders. The fear assessments are completed to address the underlying fears and anxieties as suggested by a completed typology survey and completing the Proactive/Reactive assessment scales. Johnson, Cohen, Smailes & Bernstein (1999) compiled a longitudinal study that demonstrated that persons with documented childhood abuse and neglect were four times more likely to have been diagnosed with personality disorders during early adulthood. Childhood physical abuse, sexual abuse and neglect were associated with elevated personality disorders in late adolescence in early adulthood. Also, different types of childhood maltreatment were associated with symptoms of specific personality disorders during early adulthood.

Johnson, Smailes, Cohen, Brown & Bernstein (2000) describe results for a longitudinal study that demonstrates how childhood neglect manifests itself as personality disorder symptoms in adolescents. The studies completed by Johnson, Cohen, Smailes, Skodol, Brown & Oldham (2001) show how a variety of childhood verbal, physical, sexual abuse and neglect are manifested through personality disorders in adolescence and early adulthood. Apsche, et al., (2006) described how in a survey of 120 adolescent males in a residential facility 93% of these residents were abused in all four ways: sexually, physically, verbally, and neglect. Because of this prevalent abuse, it was necessary to address the development of personality disorder in these adolescent males based on Johnson et al., (1999), (2000), (2001). The Compound Core Belief Assessment was developed to address these personality beliefs. It was found by Apsche, et al., (2005), that many of these adolescents had mixed personality traits, including clusters B's and C's. The CCBQ is designed to assess and identify mixed personality disorders and others as documented by Johnson et al., (1999), (2000), (2001), and (2005).

According to Apsche & Bass (2006a), adolescent males with mixed personality traits may act out by committing sexual offenses, aggressive acts, or other aberrant behaviors. They may be viewed as "criminals" and considered to have origins from the underclass within society, with involvement in the criminal justice system. The term typology refers to specific complexities of the adolescent with these types of histories. It is believed that aberrant behavior is related to dysfunctional schema. Cognitive Behavioral Theory would attempt to identify dysfunctional schemas in the typology and modify them. Mode Deactivation Therapy addresses dysfunctional schemas through systematically assessing and restructuring underlying dysfunctional compound core beliefs. Mode Deactivation Therapy is applicable to adolescents who engage in aberrant behaviors. It incorporates the model of individual schemas with Beck's notion of modes as integrated sub-organizations of personality. Modes are seen as assisting individuals to adapt and solve problems; for example, the adaptation of adolescents to strategies of protection and mistrust when they have been abused. A mode consists of schemas (beliefs) that are activated by a fear ↔ avoids paradigm. To address schema processing based on thoughts and beliefs without understanding associated modes is insufficient. MDT addresses the specific typology of the youth with severely life-interfering behaviors.

Once the clinician has constructed the Case Conceptualization, underlying fears of the youth can be examined. These fears serve the function of developing avoidance behaviors in the youth. This fear-connected acting-out is seen in the history and in an array of problem behaviors that may be prevalent in the youth's life. The development of personality disorders often surrounds underlying PTSD issues.

The Case Conceptualization treatment process includes identifying the underlying compound core beliefs that are generated in the development of personality traits. The typologies of subject youngsters have a conglomerate of compound core beliefs associated with personality disorders. The nature and dynamics of the conglomerate of beliefs is at the crux of why typical treatment fails these youngsters. One cannot treat specific disorders, such as sex offending and aggression, without understanding the operant application these conglomerate beliefs. It is apparent that these beliefs are not cluster specific; this is to say that the MDT Conglomerate of Beliefs and Behaviors can

involve beliefs connected to more than one personality disorder and that may integrate with one another. Because of this complex integration of beliefs, treatment for this typology in the youth's schema is more complicated.

The MDT Conglomerate of Compound Core Beliefs and Behaviors represents a system of protection for the individual from his abuse issues, which may present as being treatment interfering. The attempt to use standardized didactic approaches to treatment, without addressing the convoluted nature of the beliefs can amount to treatment interfering behavior on the part of the clinician.

The MDT Studies

Apsche, Ward & Evile (2003) completed a study comparing Treatment As Usual (TAU) was based on a manualized cognitive-behavioral therapy approach. Residents recorded negative thoughts and beliefs, and examined how cognition effected their beliefs, feelings, and behaviors. The TAU addressed sexual offending issues, as well as underlying psychological distress such as anxiety and depression. Fourteen males with sexual offending behaviors from a Residential Treatment Center, (nine European-American, three African-American, one Native-American, and one Caribbean) between ages 12 and 19 years ($M=16.62$), participated in treatment. All participants were first-time admissions to a residential program and had never participated in a cognitive-behavioral or mode deactivation based sexual offending treatment program before. Informed consent, including the tasks involved and participants' rights were reviewed. Both verbal and written consent was obtained from the participants.

Four assessments were used to measure the behavior of the residents, which included the *Child Behavior Checklist* (CBCL; Achenbach, 1991), the *Devereux Scales of Mental Disorders* (DSMD; Naglieri, LeBuffe & Pfeiffer, 1994), the *Juvenile Sex Offender Adolescent Protocol* (J-SOAP; Prentky, Harris, Frizzell, & Righthand, 2000), and the *Fear Assessment* (Apsche, 2000).

The sixteen residents were assigned to caseloads based on space availability. All therapists carried a caseload of 10. Discharge or transfer of a resident created an opening that was be filled, in order to maintain the caseload of 10. It was important to bear in mind that this was a treatment facility and that these data reflect the results of treatment comparisons, not a research protocol. Residents were assigned to MDT and CBT groups. The treatment group engaged in MDT and the control group participated in TAU. After a mean number of 12 months in treatment, the assigned therapists, (two MDT, and seven TAU) administered test packets which included the CBCL, DSMD, J-SOAP, and MDT Fear Assessment. The following were assessed: (a) Behavioral and emotional problems, including psychopathology, (b) strengths and types of fear, (c) behaviors and ideation observed by clinical staff, and (d) and level of risk to the community (Apsche, Ward & Evile, 2003).

The assessments revealed that the two groups differed significantly. Residents who participated in MDT had lower scores on all measures than did residents who engaged in TAU. It appeared that both CBT and MDT where effective treatments, although MDT appeared significantly more effective with this particular typology of adolescents. All of the residents had prior unsuccessful treatment outcomes at either another facility or at an outpatient treatment center. The results of this study suggest that MDT methodology, in addressing underlying personality traits, may be effective for severely disturbed youth with sexual offending behaviors who have experienced previous treatment failure (Apsche, Ward & Evile, 2003).

The combination of results from the CBCL, DSMD, and JSOAP suggested that MDT is effective for these typology types, in reducing internal distress as a result of varying psychological disorders present. As measures indicated, the critical pathology factors were reduced by more than one standard deviation. It was also suggested that MDT methodology reduces externalizing aberrant behaviors. Despite the sample size, the results still indicated that MDT was more effective than CBT with these residents (Apsche, Ward & Evile, 2003).

It was recommended that the results be tested in an empirically based research protocol for a true test of efficacy. The treatment results suggested that the implementation of MDT in a clinical curriculum reduced aberrant behaviors, as well as, internalizing, externalizing, and critical pathology measures across assessments; however the small sample size of the non-research comparison study may indicate limitations for generalized use. It is important to note that the comparison of treatment results also suggested that sexual offending adolescents, in the described typology, have a conglomerate of personality beliefs. Treating sex-offending behaviors without addressing the underlying personality beliefs appeared to be related to recidivism.

Apsche (2005) cites Kohlenberg & Tsai (1993), to explain FAP, and states that the theory offers that people act based on reinforcement contingencies. Although FAP takes into consideration that cognitions are involved, the focus is on the deeper unconscious motivations that were formed as a result of past contingencies. Perception is based on past contingencies; therefore, reality and the concept of reality reflect what has been experienced in the past. Considering reinforcement history in the context of the person provides a more complete assessment of a person and specific behaviors.

Case Study

Apsche & Ward Bailey (2003a) presented a case analysis that integrates theory and practice in the treatment of a youngster who had previously been in seven correctional and treatment facilities. The subject had been removed from previous facilities due to aggression towards staff and residents. The case analysis involved a step-by-step case study, with a corresponding theoretical analysis based in MDT. As a collaborative methodology, MDT was implemented by the treating professional with the aid of the client. The Case Conceptualization helped the clinician examine underlying fears of the resident. Fears served the function of developing avoidance behaviors in the youngster. These behaviors usually appeared as a variety of problem behaviors in the milieu. The Case Conceptualization method provided a vehicle for assessment of the underlying compound core beliefs that were generated by developing personality disorders. The conglomerate of compound core beliefs represents protection for the individual from his abuse issues, which may have contributed to past aggressive behavior, interfering with treatment. Since previous treatment settings did not appear to address client belief, it can be inferred that previous treatment attempts were actually treatment interfering on the part of the psychologist, or treating professional, not empirically supported, and counter-initiated, (Apsche, & Ward Bailey 2003a).

A Single-Case Study of MDT Effectiveness

John was a subject used to complete an MDT case. The case was developed using a stepwise approach. (The case information came from accomplishing the Typology Survey.) This included:

STEP I: RELEVANT CHILDHOOD DATA (ABUSE HISTORY): This section includes physical/sexual, emotional abuse, development, behavioral, aggression, suicidal, parasuicidal, substance abuse, and medication history. It was important to complete this review systematically, in laying the foundation for the case conceptualization. In reviewing the data from this case, it was necessary for the clinician to ask: "What do I need to know about this youngster, and how does the following information help to begin to understand this youngster?" Further, asking: "What do I begin to look for behaviorally?" was an important element to gaining key data.

STEP II: SEX OFFENSE DATA: Included here was all relevant information specific to the resident's sexual offense. This was attained from the typology survey and by completing the Sexual Offense System part of Mode Deactivation Therapy Workbook. Regarding the Sexual Urge and Fantasies, this section also included Risk Assessment instrument findings as well as, significant results from objective measure of sexual interests.

STEP III: DIAGNOSES: This is the diagnosis given by a physician or, if appropriate, a licensed clinical psychologist. It can be attained from the most recent psychiatric assessment. Take notice of the concordance of diagnoses to beliefs endorsed in the CCBQ.

STEP IV: FEARS, AVOIDS, COMPOUND CORE BELIEFS CORRELATION:

Fears: The key to treating the youngster was the proper administering of the Fear Assessment. Investigate the level of trauma. Begin by identifying the fears endorsed as occurring always and/or almost always.

STEP V: CONGLOMERATE OF BELIEFS AND BEHAVIORS: The conglomerate of beliefs and behaviors incorporated compound core beliefs and the corresponding behaviors. This conglomerate developed as a defense to underlying trauma. It is the pathway to the complex series of moods, schemes, and behaviors. Beliefs endorsed as “Always” or “Almost Always” from the CCBQ was used. The personality disorder beliefs are the pathways for numerous problem and aberrant behaviors, as well as emotional dysregulation.

STEP VI: SITUATIONAL ANALYSIS: This section required an analysis of situations experienced by the youngster. Completing the situational analysis provided an opportunity to test the hypotheses formulated in the Fear, Avoids, and Compound Core Beliefs Correlation section.

STEP VII: MODE ACTIVATION/ MODE DE-ACTIVATION: Beck, Freeman and Associates, (1990) suggested that cognitive, affective and motivational processes are determined by the idiosyncratic structures or schema that constitute the basic elements of personality. This schema translates to MDT methodology in considering mode activation and deactivation.

STEP VIII: FUNCTIONALLY BASED TREATMENT FORM: The completion of Functionally Based Treatment Development Form is the culmination of all previous components of the MDT Case Conceptualization. The form is intended to give direction to treatment, based on what has been learned about the resident through doing the case. The goal for this work is the development of a new, healthier belief system. These beliefs are healthy alternatives to the compound core beliefs identified in the Fear, Avoid, and Compound Core Belief correlation.

The Functionally Based Treatment Form was designed to identify desired behaviors and prescribe the implementation of these new behaviors through validating, clarifying, and redirecting.

In the case considering John, results revealed that he reduced his aggressive outburst from an average of one per day to two per month by the sixth month of treatment. He also stopped overt physical aggression, would verbalize his anger, and behaviorally withdrew himself from the situation. John attributed this to understanding his preconscious triggers of perceiving that he was vulnerable. This perceived vulnerability set off the entire mode system. He was able to identify situations that produced the vulnerability and examine his cue beliefs that were part of the activation process. He began verbalizing when he was he was uncomfortable. He also learned to recognize physiological responses that signaled his perception of danger or vulnerability. This enabled John to work on balancing his belief exercises. The theoretical case analysis of John provided the framework for future investigations for alternative treatment methodologies for reactive adolescents with personality traits/ disorders. Mode Deactivation Therapy offered new methodology specifically designed for difficult adolescents. It has been shown to be effective as compared to manualized CBT in a descriptive study, (Apsche, & Ward Bailey, 2004).

Empirical Comparison of CBT and MDT

Apsche, Bass & Siv (2005) compared CBT and MDT in treating adolescent males with Conduct Disorder and/or personality disorders and sexually reactive behaviors, the study was initiated to illustrate the efficacy of MDT as compared to CBT on aggression and sexually acting out or sexually reactive behaviors. It was also intended to compare these approaches with one another. The rationale of the comparison approach was to attempt to validate and

further understand the differences in outcomes of the differing treatment approaches. These results strongly suggest MDT outcomes, CBT in all areas including: physical aggression, sexually behavior and symptoms of PTSD.

Comparison of Effectiveness of CBT and MDT

Twenty-one participants were studied for clinical effectiveness in first-time admissions to the program and had never participated in a cognitive-behavioral or mode deactivation based sexual offending treatment program before. The twenty-one MDT participants were composed of 15 African Americans, 5 European-Americans and 1 Latino youth. Informed consent including the tasks involved and participants' rights reviewed. Both verbal and written consent were obtained from the participants.

This research study was initiated to illustrate the efficiency of two different treatment approaches for male adolescents who are in treatment for acting out aggressively and in some cases sexually. It was also intended to compare the approaches to one another. The rationale behind the comparison was to attempt to validate and further understand the differences in outcome of the different models.

Based on the results of this study we have demonstrated that regardless of treatment model, recidivism rates have significantly declined.

Additionally, it was clear that MDT produced significantly superior results when compared to CBT treatment. MDT provides a new empirically based alternative for treating sexual and aggressive based behaviors in adolescents. MDT also offers a therapeutic intervention, which allows the treatment provider to be efficient and provide a timely intervention, as well as the potential for positively affecting recidivism rates, (Apsche, Bass, Murphy, 2004).

Apsche, Bass & Murphy (2004) examined , comparative data was examined between two published studies, one CBT and the other MDT as a CBT. The CBT study was completed first. Thought Change, the CBT methodology, was an effort to establish an effective manual-based treatment to address the complexities of the adolescent males with sexual offenses. MDT was developed to address the more reactive adolescents who were not successful in the regular CBT. The MDT treated individuals did not and perhaps could not complete the Thought Change (CBT) program. The methodology required adjusted for the extremely dichotomous, emotional dysregulation, and reactive aggression of the subjects.

Similarities and Differences between CBT and MDT

Apsche & Bass (2006b) suggest that there are many similarities and differences between CBT and MDT. MDT was developed as an extension of CBT, in order to find a methodology that might be successful with treatment resistance and/or failures with standard CBT methodologies. The results of this comparison of published "best data" from CBT and MDT suggests that MDT is more effective than CBT for adolescents with conduct disorder and traits of personality disorder or co-morbid disorders and sexual offenses.

Similarities and differences between MDT and CBT are examined in this table.

Table 1: Comparison of MDT and CBT

	MDT (Apsche)	CBT (Beck et al.)
Goal Orientated Treatment	Yes	Yes
Focus of Treatment	Present in-vivo work in sessions	Initially present focused
Session Structure	Yes, but flexible	Yes

Session Limitation	No	Aims to be time limited
Cognition	Unconscious and Conscious	Conscious
Goals for Therapy	Yes- empower patient to modify underlying beliefs thereby to change moods and behaviors (deactivate modes)	Yes-Uses a variety of techniques to change thinking, moods and behaviors
Collaboration between therapist and client	Yes	Yes
Therapeutic alliance important	Yes	Yes
Addresses Resistance	Yes	No- Assumes patient will comply with treatment
Empowers Client to be Own Therapist	Yes	Yes
Thoughts/Beliefs as Dysfunctional	No- beliefs are not thought of as dysfunctional, which invalidates the patient's experience. Beliefs are validated as being created out of a patient's experience, then are balanced to deactivate modes	Yes- teaches patient to identify, evaluate and respond to their dysfunctional thoughts and beliefs with schema assumptions (scanning)
Cognitive Distortions	No- thoughts/beliefs are not distortions since they are based on past experience	Yes
Dialectical Thinking	Yes- Focus on balancing	No
Case Conceptualization	Yes- Ever-evolving and drives treatment	Yes- Ever-evolving formulation of the patient's problems in cognitive terms
Case conceptualization is specific typology driven	Yes	No
Change Experiential learning through recreating positive experience	Yes	No
Change Experiential learning through recreating positive experience	Yes	No
Modes	Yes- Perceptions trigger physiological cues, which trigger beliefs (entire process is mode activating).	No
Triggers important	Yes- Learning the triggers is key to preventing activation of modes	No
Client's perceptions important	Yes- Perceptions trigger modes	No- Perceptions are distorted
Reducing anxiety, addressing trauma	Yes- Uses exposure to fear cue to decrease perception of fear	No- Focuses on thought-feeling-behavior connection

Fear↔avoids paradigm	Yes	No
Clear Direct Structured Sessions for Adolescents	Yes	Cognitive Distortion Based
Evidenced Based for Adolescents Only	Yes	No

Comparison of MDT to other Cognitive Behavior Therapies

Mode Deactivation Therapy has its roots in CBT and many so-called “third wave” derivatives of CBT such as, DBT, ACT and MBCT. Parts of MDT incorporate FAP and Schema Mode Therapy as well. This chart compares many aspects of MDT to CBT, DBT, FAP, Schema Mode Therapy and ACT. This is in no way intended to be an exhaustive review. It is intended to be viewed as individual case concepts in the methodology and the possible collateral benefits.

Applications to Family Therapy

David’s case presents the first case of MDT family Therapy. He was a sexual offending youth who had issue with aggression, depression and PTSD. Following completion of David’s COBB, he was excited to share his discoveries of himself and the family structure with his family. He reviewed each belief and explained the corresponding behaviors. His family remarked about the succinct capturing of David. Additionally, they remarked about how familiar his thinking was. The family recognized that they shared many of the same beliefs and were able to appreciate and understand the beliefs they did not share with David. They too remarked about how overwhelmed David must be feeling with so many conflicting beliefs.

While teaching David how to balance his beliefs with V-C-R, David shared his newly found knowledge with his family. He shared with them that he was using trust scales to measure his trust for people so that he had a concrete measure of how much he trusted someone today versus yesterday. He also shared insight he gained into the criteria he used to trust others, encouraging his family to use the scales as well. They began thinking about trust in measurable terms, identifying that a person demonstrated negative behavior they could decrease their level of trust, rather than immediately dismissing any possibility of trust based on one small indiscretion. This not only increased trust within the family, but also helped the family to see that authority figures were not all seeking to break the family apart. This revelation was truly validating for David, allowing him to communicate more openly in therapy sessions. Beliefs are referenced and balanced with any issue presented in therapy sessions, whether individual or family therapy sessions. For example, if David presented in a session being upset about receiving a consequence from staff, he and his therapist would identify his behavior and the corresponding beliefs on his COBB. Once identified, he and his therapist could balance his belief and allow him an opportunity to recognize that he was reacting to the fear of being vulnerable, due to getting caught and given a consequence for negative behavior. This would work similarly in a family therapy session. If David presented in a family therapy session upset about this issue, he, his therapist and his family could collaboratively work, using his COBB to identify and balance his beliefs.

With its empirically based and driven treatment methodology, MDT provided an effective intervention for David. For example, David had not been receptive to traditional cognitive behavioral therapy techniques. He had exhibited a compendium of problem behaviors, which others labeled as antisocial aggression. David also demonstrated extremely poor boundaries with others and struggled with limits. He had been unable to deal with the concept of cognitive distortions or irrational beliefs. David’s beliefs protected him; to change or strip his beliefs away

activated his vulnerability. He would then become reactive and engage in dichotomous and defensive thinking, beliefs, and behavior. Therapy would be sabotaged at the very beginning.

Completing David's MDT Case Conceptualization revealed a conglomerate of beliefs, rather than discrete categorized beliefs. Understanding his conglomerate of beliefs allowed a better understanding of David and his behaviors. Reviewing his identified conglomerate of beliefs offered David insight, allowing him to feel hopeful. Recognizing the amount of beliefs and how they activated due to his identified underlying fears, validated how overwhelmed he felt and why he often overreacted. David initially perceived all authority figures as threats since his parents had convinced him that all authority figures had intentions to break the family apart. This obviously had an effect on David's ability to trust his therapist and therapeutic rapport was a primary focus in treatment.

David stopped exhibiting intimidating behaviors and began to verbalize his feelings, rather than shut down and withdraw from the situation. He attributed this to understanding his preconscious trigger of perceiving that he was vulnerable. This perceived vulnerability set off the entire mode system. He was able to identify situations that produced the vulnerability and to examine his cue beliefs that were part of the activation process. He began verbalizing when he felt or thought he was uncomfortable. He also knew his physiological responses to the danger signal vulnerability, and they disabled David to work on balancing his belief exercises. David was originally perceived as sexually aggressive and proactive, which would have suggested that he was aggressive due to a perceived positive outcome from the aggression. Careful analysis of his MDT Case Conceptualization revealed that David is actually reactive, indicating an entirely different purpose for his aggression and a need for a different focus in treatment.

David had previous unsuccessful treatment where basic cognitive therapy techniques were ineffective. Mode Deactivation Therapy was found to be much more effective due to its ability to address the personality disorder beliefs without challenging David to engage in dialectical debates. It was essential to incorporate David's family in his therapy since they were so involved in his life and treatment. His family made progress along with him, gaining insight into his beliefs as well as their own (Apsche, & Ward Bailey, 2004).

A Comparative Analysis of CBT, SST and MDT

Apsche, Bass, Jennings, Murphy, Hunter & Siv (2005) compared the efficacy of MDT, CBT and SST for adolescent males in residential treatment for conduct disorders and/or personality dysfunctions, and documented problems with physical and sexual aggression. The results showed that MDT was superior to traditional CBT and SST in reducing both physical and sexual aggression. The study indicated that MDT was the only treatment of the three that significantly reduced sexual aggression for these youth.

The comparative CBT, SST and MDT study was designed to assess the effectiveness of MDT as compared to CBT and SST in the treatment of conduct disordered and personality-disorder youth with problems of aggression and sexual aggression.

In a real world setting, a total of 60 male adolescents participated in the study. All subjects were referred to the same residential treatment facility for the treatment of aggression and/or sexual aggression. Subjects were randomly assigned to one of three treatment conditions upon admission:

Condition One: CBT: A total of nineteen male adolescents were assigned to the CBT condition. The group was comprised of varying cultural backgrounds and presented with issues typical to the typology.

Condition Two: SST: A total of twenty male adolescents were assigned to the SST condition. The group was comprised of varying cultural backgrounds and presented with issues typical to the typology, not dissimilar to the group in Condition One. The Social Skills Training program included identification and reinforcement of appropriate

behaviors, target skill identification, modeling, practicing skills, and role-playing. The youth in this condition were encouraged to practice skills and were reinforced by shaping and fading procedures. All staff and therapists were trained and supervised in SST by a doctoral level psychologist. All skill training was performance based and evaluated for each individual, and indicated by Henggeler Schoenwald, Borduin, Rowland & Cunningham (1998).

Condition Three: MDT. A total of twenty-one male adolescents were assigned to the MDT condition. The group was comprised of varying culturing backgrounds and presented with issues typical to the typology, not dissimilar to the group in Condition One and Condition Two. The MDT therapist was given intensive training by the first author.

The three treatment conditions showed similarity in terms of the frequency of Axis I and Axis II diagnoses, age, and racial background. To ensure consistency in the delivery of the three respective treatments, therapists were specifically trained in the one of the three treatment curriculums/methods. The average length of residential treatment across all conditions was roughly 11 months.

Apsche et al. (2005) showed that while all three treatments were effective in reducing physical aggression, only MDT demonstrated a significant reduction in rates of sexual aggression. This suggested that the technical modifications of cognitive behavioral treatment used in MDT may be better suited to the unique developmental and clinical presentation of these behaviorally disturbed adolescents and may yield superior outcomes, especially with regard to sexual abuse issues. This study showed MDT to be more effective with aggressive adolescent males with conduct and personality disorders than CBT and SST. MDT was previously demonstrated to be effective in reducing aggression, personality disorders beliefs, and symptoms of Post Traumatic Stress Disorder. Apsche, et al. (2005) identified limitations of this study, with several factors that may have limited the strength of the conclusions drawn from the study outcomes. First, the results were derived in a residential treatment program and might not show potential for replication in less intensive outpatient treatment settings. The authors also saw that there were inherent difficulties in identifying “pure” diagnostic types for multiply-challenged youth such as those studied. Apsche et al., write:

“While there was striking similarity in the distribution of diagnostic categories across treatment conditions (e.g. Conduct Disorder, Oppositional Defiant Disorder, Personality Disorders), exact matching by diagnosis could not be realistically achieved in this real world setting. Moreover, while all of the youth had documented histories of physical aggression and nearly all had histories of sexual aggression, it was not possible to neither definitively distinguish individual youth as primarily sex offenders or primarily aggressive youth nor match them accordingly across the three conditions.

“As in any real world study, it is always difficult to control for the levels of competence of the participating therapists and their adherence to the “purity” of each of the three treatment methods. Best efforts were made to control for this common problem by ensuring that therapists shared the same professional degree and level of clinical experience in each of the three methodologies and by providing training in the delivery of each model prior to the study.

‘The strength of the outcomes could be further enhanced with the inclusion of additional outcome measures and, ideally, long-term follow-up of the youth who participated in the study. It is important to note that the authors do not purport that MDT will generalize to any groups other than youngsters with conduct and personality disorders, (Apsche, et. al., 2005)

Apsche and Bass (2006a) in a “Review and Empirical Comparison of Three Treatments for Adolescent Males with Conduct and Personality Disorder: Mode Deactivation Therapy, Cognitive Behavior Therapy and Social Skills Training” examined a case where MDT was used to treat an adolescent with reactive conduct disorder, PTSD who had eight dangerous suicide attempts.

The reactive adolescent has similar experiences of the world as clients in Linehan's (1993) work; with borderline personality disorder. Their intense emotional pain has led them to "shut down" emotionally in order to control life's painful experiences. When they are in a situation that triggers fear, this reminded them of pain they could not control, and caused them to "relieve" the internal or external events that influenced emotional response. They reacted with anger or aggression; they also often dysregulated (Linehan, 1993).

Apsche and Bass (2006a) also found a reduction of internal distress, resulting from various psychological disorders, as well as a reduction of sex offending risk in the group that participated in MDT. Overall, the study indicates that treating typological issues without addressing the underlying compound core beliefs, again, appeared to be related to recidivism. This reinforced the ideas that often, these classifications are not immediately recognizable when treating these youths.

In a 2003 study, Apsche and Ward presented descriptive treatment results between two groups of adolescents who were sexually and physically aggressive. The results of this study demonstrated that MDT was superior to CBT in redirecting both physical and sexual aggression. The authors' results suggested that MDT was far superior by more than one standard deviation in reducing the internal and external distress in all categories as measured by the Child Behavior Checklist, (*CBCL*) and the Devereux Scale of Mental Disorders, (*DSMD*). MDT also reduced sexual offending in all behaviors as measured by the Juvenile Sex Offenders Adolescents Protocol (*J-SOAP*). Mode Deactivation Therapy reduced the non-static portion of the J-SOAP almost two standard deviations more than CBT. In addition, the authors Apsche and Ward (2003), indicate that treatment protocols were often complicated by the presence of conglomerate of personality disorders, as found by Johnson, et al., (1999 in their longitudinal study that childhood maltreatment results in the development of personality disorders in adolescents. The combination of conduct disorders and personality traits or disorders presents a challenge to the clinicians and researchers alike when working with adolescents.

Apsche & Siv (2005) stated that Conduct Disorder has been found to be a difficult disorder to understand and treat; problems and symptoms associated with Conduct Disorder include chronic violence, various forms of physical aggression, sexual aggression and property destruction. They point out that while Kazdin and Weiz (2003) delineate evidence based treatments practices for children with Conduct Disorder; no evidence-based procedures exist for adolescents over 14 years old with Conduct Disorder. They further, state that the prevalence rate for Conduct Disorder is 2% to 6% for children in the United States, as of 2005. They additionally submitted that clinical referral rates of 33% to 50% of cases referred to outpatient treatment: and 80% of these children and adolescents are likely to meet criteria for a psychiatric disorder in the future; presenting a major dilemma when attempting to treat a difficult disorder (Apsche & Siv, 2005).

MDT and Suicide

Apsche, Bass & Siv (2006) reviewed data from 12 years of published studies on adolescent suicide. It was found that the rate of personality disorders among adolescents who died by suicide were as high as 17%. It was also revealed that the rates of serious suicide were nine times higher with adolescents who were diagnoses with Anti-Social Personality Disorder, Borderline Personality Disorder and Narcissistic Personality Disorder. Links, Gould & Rathayake (2003), also reported that suicide rates for adolescents who had Borderline Personality Disorder were indicated at a rate of 44%. In addition, they indicated that adolescents with Narcissistic Personality Disorder were 9% more likely to die by suicide.

Adolescent suicide was indicated to continue to be a leading cause of death in North America (Links, Gould & Ratnayake, 2003). Reports show a five to one ratio of males to females of suicide in adolescents in Canada. Adolescents have the highest prevalence of risk behaviors including suicides. Suicide in adolescents between the ages of 15 and 19 rose 24.5 % between 1956 and 1994. During the past 30 years there has been an increase in the number of incidences of suicide in adolescents ages, 15-19 years of age, and data has shown important ethnic variations. The rate of adolescent suicides in males has risen from just under 6 per 100,000 to 17.8 per 100,000 in

1992 (Shaffer, Gould, & Hicks 1994). Between the ages of 9 and 19, suicide is the second leading cause of death for white males and the third leading cause of death among African American boys. The rate of suicide among adolescents is rising at an alarming rate over a ten-year span. It was found that 17% of adolescents aged 13 to 19 years met criteria for Conduct Disorder or Antisocial Personality Disorder. When suicide attempts were studied, it was found that 45% of the males had significant symptoms of Antisocial Personality Disorder. Adolescents with Borderline Personality Disorder represent 9% to 33% of all suicides. Narcissistic Personality Disorder or narcissistic personality traits were found in 14% of lethal suicides in a 15-year study of suicide by Stone, published in 1989.

Apsche and Siv (2005) completed a case study with an adolescent male with conduct and personality disorders who was actively suicidal. They found in this case study that MDT was effective in reducing suicidal attempts, thoughts and ideation in this adolescent. This study is the first attempt to test the effectiveness of MDT on suicidal adolescents in a larger group setting.

A history of suicidal behavior is found in 55% to 70% of individuals with personality disorders. An MDT study, examined the effects of MDT on a population of adolescents with a variety of personality traits. It found a decrease in their suicidal ideation and cognition as measured by the Beck Depression Inventory II and the Reynolds Suicidal Ideation Questionnaire (Apsche, Bass & Siv, 2006).

The sample comprised of 20 male adolescent residential patients who were in treatment for a year on average. All subjects were referred to the same residential treatment facility for the treatment of aggression. In this study, subjects were randomly assigned to one of the two treatment conditions at the time of admission based on available openings in the caseload of the participating clinicians. The two treatment conditions showed similarity the frequency of Axis I and Axis II diagnoses, age, and racial background. To ensure consistency in the delivery of the two respective treatments, therapists were specifically trained in one of the three treatment modalities. MDT has shown evidence of promise as an effective treatment in adolescents with conduct disorder, and personality disorder or traits (Apsche et al., 2005).

This study suggests that MDT might be effective in treating these adolescent with suicidal ideation, cognitions or beliefs. It appeared that MDT reduced the suicidal risk in this study as measured by the BDI-II and SIQHS assessments. MDT might be effective because it addresses both the personality disorder or traits and the Axis I disorders. Mode Deactivation Therapy was significantly more effective than TAU by over one standard deviation per category.

First, as all of the MDT studies thus far, it was completed in a clinical residential setting. Although all assignments to caseloads are random by assignments this limits randomization. These limits are also the strengths. The effects of MDT in less controlled setting suggest that the fidelity to the model might be more effective than more controlled studies. There are several limits to any clinical study that must be identified. Random assignments were made as openings occurred within the therapist's caseloads. These openings were often more controlled by the availability of aftercare services arranged by the referral source than by the specific skills of the individual therapists. Data suggested that there was a significant risk of serious suicide attempts for category of reactively aggressive conduct disorder. Conduct disorder -increased the risk of lethality, as well as aggression and other destructive behaviors such as suicidal and parasuicidal behaviors. (Links, Gould & Ratnayake, 2003) It was clearly stated that complications of conduct disorder were paired with Anti-Social Personality Disorder, Borderline Personality Disorder and Narcissistic Personality Disorder as being the manifestation of the disorder by lethal behaviors, both internally and externally. This prevalence underscored the necessity for the clinician to be aware of the personality beliefs as delineated in the COBB. When implementing MDT, the clinician is required to be aware of these risks of personality, and the indication of potential lethal suicide attempts.

Case Study of a Suicidal Adolescent Male

Apsche & Siv (2005) present a case study with a 17-year-old African American male who met the criteria as an appropriate subject for MDT. He had been diagnosed with PTSD, Conduct Disorder, Major Depressive Disorder and Borderline Personality Disorder. He had a history positive for seven serious and nearly lethal suicide attempts, including, an attempted involving hanging, which prompted admission to treatment with Dr. Jack Apsche, (Apsche and Siv, 2005). He had a tragic family history, including parental substance dependency that led to his mother's death and father's incarceration. He was also brutally abused by his grandmother and was sexually abused from the ages of two to ten. He sexually abused a four-year-old girl in his neighborhood when he was eight. At 14, he started to "hang out" on the streets, returning home only to shower. His school history included the need for individualized assistance in the classroom and disruptive behavior. He was often aggressive and truant.

The step-by-step approach of MDT as previously indicated in this paper, was used to treat Charles. He was discharged from treatment and moved with his brother to another state. Charles, at the time the authors published their article, was attending a university, and had recently reported that he had not attempted suicide since the since the admission connected event. He also reported that he continued to use "balance the beliefs" regulating exercises.

This case study results suggested that MDT was helpful in reducing lethal suicide attempts. The authors could not suggest MDT would be effective in treating adolescent suicide without further rigorous study. They held, however, that MDT might hold some promise in treating adolescent males with PTSD, Conduct Disorder, and personality disorders, for youth that had a history of potentially lethal suicide attempts. It was hoped that the results of this case study would prompt further study in a carefully monitored and controlled situation.

Further Validation of MDT Effectiveness

Apsche, Ward & Evile, 2003, Apsche & Ward, 2003b, and Apsche & Ward Bailey, 2003b presented information that demonstrates promise for MDT in offering empirically based therapy. Authors referred to the American Psychological Association (APA)'s Task Force on Prevention, which found that universal programming is not as effective as programs that are empirically based and designed for a specific target group, such as those with a typology of adolescents described in this paper. Weissberg, Kumpfer & Seligman, (2003) indicate that empirical literature regarding this area of working with complex adolescents is 'sparse' and that "the most important advances regarding the effective implementation of empirically supported" treatment are yet to come. It was hypothesized that MDT would prove to address the need for empirically supported treatment for the specific target group, sexually and physically aggressive adolescents with personality traits. Although Weissberg, Kumpfer & Seligman (2003) discussed this need in the context of prevention, application of MDT addressed this specific need as a methodology for adolescents both as treatment for existing problem behaviors, as well as for preventing problem behaviors by addressing the underlying beliefs. Apsche and the collaborative authors offered guidelines for empirically supported treatments for children and young people.

Apsche and Ward (2003d), showed that this indicated that MDT to be more effective than standardized normalized CBT in a descriptive study. Additionally, a 2003 study by Apsche and Ward found that MDT reduced personality disorder/trait beliefs significantly and taught the client to self-monitor and balance personality disorder beliefs himself. The study also indicated a reduction of internal distress, resulting from various psychological disorders, as well as a reduction of sex offending risk in the group that participated in MDT. Overall, the study showed that treating this population typology without addressing the underlying compound core beliefs, appeared to be promote recidivism.

Additional Studies

Apsche, Siv & Matteson (2005) examined a 13-year-old adolescent male, William, who engaged in severe aggression, self-injurious and impulsive behaviors. Prior to being given MDT intervention, he was treated with

DBT for thirteen months. Dialectical Behavioral Therapy had limited success in reducing his problem behaviors. He was then treated with MDT for four months. His problem behaviors were reduced significantly. It appeared that in this case study MDT was more effective than DBT in reducing his severe behaviors.

Since the inception of DBT, it has been shown to be an effective methodology in treating a variety of disorders. Apsche, Bass, Siv, and Matteson (2005), cite others studies that demonstrated the effectiveness of DBT with female juvenile offenders. The effectiveness of this approach had been demonstrated also with older populations. In these studies DBT has demonstrated its effectiveness with populations other than Borderline Personality Disorder cases. Apsche's study published in 2004 offers the first case study that examines the effects of MDT with a youngster who did not have successful with DBT intervention.

The case study was presented using a step-by-step case study procedure. Use of MDT suggested the potential for effective treatment of youngsters with similar backgrounds to a subject named William. William, a thirteen-year-old Caucasian American male, diagnosed with Post Traumatic Stress Disorder, Impulse Control Disorder, Reactive Attachment Disorder, Obsessive Compulsive Disorder and Personality Disorder Traits. William demonstrated a pattern of continuous disruptive behaviors, lying, social phobias, hoarding, aggressive and threatening behaviors, property destruction, academic performance and school behavior problems, as well as difficulties with peer relationships. He also showed enuresis with purposeful urination on furniture and clothing, and sexually inappropriate behaviors, including attempting to have sex with his sister, excessive masturbation with stolen undergarments from his mother and sister, masturbating with animals and in front of other children, early sexual experiences and inappropriately touching other children.

His case history involved benign neglect, abandonment, foster care placement, and substance abuse. William was referred to a residential program to treat his disruptive behaviors. William presented as an extremely anxious child with obsessive-compulsive features. Prior to the case study, William had been in treatment 13 months. William had received DBT individual and group therapy during that time.

Results from the Fear Assessment suggested that William was an individual who had anxiety and fear related to external areas, or issues outside of himself, over which he has little or no control. Endorsed fears indicated that William's behavior was in response or reaction to external stimuli, which he perceived as being threatening. This appeared to validate his history of sexual exposure and possible abuse, as well as strong family enmeshment. He endorsed the following Fears: being emotionally alone, being home alone, failing (life), being emotionally intimate, fear of crowds, fear of being alone, fear of being in a crowded room, fear of being dumb, fear of someone coming up behind him, fear of being touched by someone that you don't know well, fear of confronting his abuser, fear of being physically hurt for no reason, fears of his feelings and emotions, and fears of hurting someone and losing control. These Fears were matched with corresponding Beliefs to complete the Trigger, Fear, Avoids, Beliefs (TFAB) worksheet.

In anticipating that he could be in a situation where he may be confronted or reprimanded, his anxiety would increase and he would emotionally shut down. Anticipating the confrontation set in motion the cognitive, affective, behavioral, and physiological processes, William's cognitive system (preconscious processing, perceptions, beliefs, and motivational schema), physiological system, affective schema, and behavioral schema all activated simultaneously. With MDT therapy, deactivation of William's modes became evident. Addressing his unbalanced, dichotomous beliefs would prevent the rest of the sequence from occurring.

William's interpretation of his physiological sensations magnifies his fears of the anticipated physical and psychological re-victimization. Throughout the process of interpreting the signals that he received from his bodily sensations, such as the flush caused by anxious feelings related to the powerful fear of loss of control and the sequel of physiological responses, he responded with fear. This fear was compounded by the events that led to other fear, which involved the feeling humiliated by the perceived threat of victimization/vulnerability and loss of control in the presence of other people.

The final step in developing William's Case Conceptualization was to complete the Functionally Based Treatment Development Form. Ultimately, due to the pinpointed therapy driven from the Case Conceptualization, William's therapist was able to develop healthier beliefs due to all staff members working with him using V-C-R techniques, as described in his treatment plan, originating from his Functionally Based Treatment Development Form. This focused on issues such as William's belief about his inability to trust anyone outside the family. Validating his fears of not trusting anyone outside of the family, clarifying that he could trust one person outside the family at a time, and redirecting him to use the trust scales to objectively measure his level of trust for others, allowed William to open his mind to possibilities, thereby balancing his beliefs about trust. The process also taught William how to balance his beliefs for himself. As a result, he developed a new belief, to trust some people some of the time.

This case study again suggested that in at least this case, MDT was more effective than DBT in reducing physical aggression and self-injurious behaviors. It did not, however, suggest that MDT was superior to DBT; but it was noted that MDT was developed for this typology of youth and there is data suggesting that MDT could be an effective psychotherapy for adolescents. Apsche, Bass, Siv, and Matteson (2005) in their *Comparison of MDT and DBT: a Case Study and Analysis*, hoped to continue to develop MDT and conduct randomized studies to test its effectiveness as compared to DBT and other interventions.

Another step-by-step case study was made with a corresponding theoretical analysis based in MDT (Apsche & Siv, 2005). The methodology showed potential for use with subjects such as Peter. Peter was a 16.5-year-old Caucasian male. He has been diagnosed with PTSD, Conduct Disorder and Personality Disorder Traits. Peter demonstrated a pattern of disruptive behaviors including; fire setting, lying, social phobia, aggressive and threatening posturing, property destruction, academic performance problems and school behavior problems, peer relationship problems and torturing animals.

His history indicated that Peter had demonstrated significant behavioral and impulsive problems since early childhood, which were manifested more prominently when he was four. During this time he was removed from his mother's care due to her continuous substance abuse. She reported using alcohol and cocaine during her pregnancy. He was placed with his grandmother who also failed to provide adequate supervision; as a result, he was removed from her care. From 2000 to 2003, he was placed in nine inpatient settings, including residential placements and hospitals. Peter reported that while still in the custody of his grandmother, he tortured animals in front of other children, engaged in sexual behavior with animals, and burned toys. He had a history of early sexual experience, specifically sexual touching of other children. He also reported that he set his grandmothers bed on fire while she was sleeping in it. Peter performed at the normal grade level at school, but he required increased structure and individualized attention. Peter has a history of repeated violations of school rules and disruption in class. He often was aggressive and truant. He was placed briefly at a hospital then moved to a residential setting on an island. Within a couple of days, out of staff supervision he started a fire, which destroyed over 40 acres of protected woodlands. An assessment indicated Peter had an average IQ. He struggled with low self-esteem, and on a sentence completion test, several times responded: "I wish I was never born". Significant DSM IV data includes PTSD, ADHD, and mixed features of borderline, antisocial, avoidant, and narcissistic personality disorders.

The case provided the structure of the conglomerate of beliefs and behaviors to address dysregulation through balancing the beliefs. Peter's Case Conceptualization included information regarding his presenting problems, test data, cultural issues, history and development, cognitive issues, and behavioral issues.

As previously discussed, studies suggest that the typology of youngsters such as Peter have a conglomerate of compound core beliefs associated with personality disorders. This conglomerate of beliefs may be a personality disorder reason why many youngsters fail in treatment. Additionally, Peter's fears, as indicated on the MDT Fear Assessment, were associated with his presentation as being "Proactive," suggesting that Peter was an individual who had anxiety and fear related to external areas or things outside of himself, over which he perceived little or no

control. Endorsed Fears indicated that Peter's behavior is in response or reaction to external stimuli, which he perceived as a threat, which appeared to be indicated by his history of sexual exposure and abuse.

Over the course of treatment, Peter became aware of his distressing feelings and he often was unable to activate his own cognitive controls, or “voluntary controls” to override this “primal” reaction to be able to mediate the conflict. However, once he was able to mediate the fears and avoidance, he showed the ability participate in supportive meetings; the anxiety he felt in such interactions began to decrease with each event.

Recidivism

Apsche, Bass & Siv (2005b) researched data involving a follow-up study reviewed outpatient data and recidivism for an 18-month post MDT. A two-year study summarized two treatment research works that examined recidivism data for two years in a post discharge group. The study compared MDT, CBT, and SST. The data from the studies of Apsche and his colleagues, (Apsche, Bass, and Siv, 2005a, and Apsche & Bass 2006a), were used to demonstrate the overall efficiency in treatment of MDT. The follow-up data signaled that MDT had positive generalization effects, as indicated in post-treatment review.

Apsche, Bass & Siv (2006b) presented a summary of the collected studies of outcome of Apsche.. It includes recidivism data for two years since treatment was terminated and the adolescents were discharged. Recidivism data was collected by written surveys sent to parents, guardians and the residents’ caseworkers. Phone calls were initiated as reminders to case managers and their supervisors to assure reliability. The summary of the data suggests that in three groups of equal size in a total population of 60 male adolescents, MDT was far superior to CBT and SST in reducing aggression, sexual aggression, and psychological distress as measured by the CBCL and DSMD. Further analysis suggests that MDT is superior in reducing recidivism over CBT and SST. Because of MDT’s superior results, it is hypothesized that the effects of MDT are superior in generalization to the home environments of the adolescents.

The results of the series of studies on MDT suggested that it might be an efficacious treatment for adolescents with problems with conduct and personality disorders, and with aggressive and other aberrant behaviors. The follow-up data also suggested that MDT might be effective, not only during treatment, but it might generalize to the home environment. The outcomes suggested that MDT showed promise as an effective out patient treatment approach (Apsche, Bass, & Houston, 2007).

First, the adolescents in this study were all from urban centers of the Northeastern United States. Most had a history of legal issues and charges. Many of these adolescents were extremely aggressive and most likely would not be participants in federally funded grant based research studies. These individuals in the MDT studies would most likely be “dropouts” from such studies because of non-compliance or aggression. In other words, these adolescents are troubled, aggressive, suspicious, largely under served, and not often represented in University based research, (Apsche, Bass and Siv 2006b).

Apsche, Bass, and Houston (2007) studied an outpatient replication of a previous study that examined the effectiveness of MDT on adolescent conduct disorders in male youth being treated in an inpatient setting. The research compared the effectiveness of MDT and Treatment as Usual (TAU) as treatments on adolescents with conduct and personality disorders in an outpatient setting. The results showed that MDT was superior in reducing overt aberrant behavior, including physical aggression and psychological distress as measured by the Achenbach Child Behavioral Checklist.

Given the prevalence of conduct disorders and its major contribution to juvenile anti-social behavior, societal violence, sexual violence and delinquency, there appears to be an urgent need for empirically based treatment methods for such youth. There were several interventions implemented to reduce antisocial behavior in disruptive disorders. Because many clinicians conducted therapy in a more eclectic fashion, the problem encountered was

difficulty identifying efficient treatments which could be effective in many treatment environments. Other researchers conducting a review of treatments for children and adolescents were they identified 82 studies carried out between 1966 and 1995 involving 5,272 youth. Of the 82 studies, they discovered that many were not well established with empirical validation, and many more did not indicate efficacious treatment. There were problems with identifying a comprehensive treatment approach that showed suitability, reliability and external validity.

MDT as Compared to DBT

Apsche, Bass, and Houston (2007) examined the effectiveness of MDT as compared to DBT, in a residential treatment center for adolescent males. This study was initiated to compare Mode Deactivation Therapy (MDT) and Dialectical Behavior Therapy (DBT) in the treatment of aggressive adolescent males in residential treatment. The analysis of the daily behavioral reports, which indicated a number of observed aggressive acts, was compiled; statistical analysis of the results ensued. It was found that all participants benefited from treatment regardless of the theoretical orientation used.

Clients were admitted to the same facility. They presented with physical aggression, suicidal ideation, with mixed personality disorders/traits. One group of clients was treated with MDT, while the other group received DBT treatment.

The sample size for each group type, MDT and DBT, was calculated based on the potential residential length of stay. Each group participant was randomly assigned to groups individually and randomly. Since this was a clinical study, there were no study drop-outs. Due to the nature of the residential treatment center, the clients in the study were not homogenous and presented with more severe behavioral problems than target populations in typical research therapy. Written informed consent was obtained from all parents or guardians.

The sample was comprised of 20 male adolescents at a residential treatment center. All subjects were referred to the residential treatment center for anger, aggressions, and externalizing problem behaviors. The clients were referred to their treatment group randomly. The first client assignment was to the DBT group and was determined by a "coin toss". The second assignment was to the MDT group, followed by DBT client assignment on an alternating basis, until each group was filled.

The DBT group therapists were all trained in DBT at the official DBT training center. The MDT group therapists were trained by the first author of this study. Training and supervision was provided by a doctorate level clinician for both groups. The MDT group was trained by the developer of MDT in order to reduce confounds that may have been produced by additional trainers. Participating therapists shared comparable professional degrees, training and clinical experience in each of the two methodologies.

Findings indicate that Mode Deactivation Therapy (MDT) may achieve superior results in reducing physical aggression in conduct-disordered and personality-disordered youth in a residential treatment setting. While both MDT and DBT reduced physical aggression in these adolescents, MDT was significantly more effective in reducing aggression in this particular study. These findings also support earlier studies indicating that MDT can be used as an effective treatment for reducing depression and suicidal ideation, as shown by BDI and SIQ results. Use of MDT demonstrated a significant decrease in all levels of behavior and psychological distress. (Apsche, Bass & Siv, 2006a).

The authors did not propose that MDT was more effective than DBT in any manner except in that particular, "real world study". They also did not generalize their results to other populations.

Again, it was indicated that the strength of the outcomes could be further enhanced with the inclusion of additional outcome measures and, ideally, with long-term follow-up of the youth who participated in the study. (Apsche, Bass and Houston, 2007)

MDT as Approach with Multiple Applications

Mode Deactivation Therapy can simultaneously address the multiple problems issues of conduct and personality disordered youth, while also accommodating the particular defensive characteristics of the adolescent. Given the prevalence of conduct disorders and its major contribution to juvenile crime, societal violence, delinquency and sexual violence, there is an urgent need for effective treatment methods for such youth. As one study has indicated, MDT showed merit for treating adolescents with sex offense behavior, as well as those with mental illness.

A total of 60 male adolescents participated in the study. All subjects were referred to the same residential treatment facility for the treatment of aggression and/or sexual aggression. In this study, subjects were randomly assigned to one of the three treatment conditions at the time of admission based on available openings in the caseload of the participating clinicians. The three treatment conditions showed similarity in terms of the frequency of Axis I and Axis II diagnoses, age, and racial background.

To ensure consistency in the delivery of the two respective treatments, therapists were specifically trained in the one of the three treatment curriculums/methods. The average length of residential treatment across all conditions was roughly 11 months.

The data indicates that Mode Deactivation Therapy (Apsche and Ward Bailey, 2004) may achieve superior results to traditional Cognitive Behavioral Therapy (CBT) and Social Skills Training (SST) in reducing both physical aggression and sexual aggression in conduct-disordered and personality-disordered youth in a long-term residential treatment setting. Moreover, while both treatments were effective in reducing physical aggression, only Mode Deactivation Therapy (MDT) demonstrated a significant reduction in rates of sexual aggression. This finding suggests that the technical modifications of cognitive behavioral treatment used in MDT may be better suited to the unique developmental and clinical presentation of these behaviorally disturbed adolescents and yield superior outcomes, especially with regard to sexual abuse issues.

At the same time, several factors may limit the strength of the conclusions drawn from the outcomes. First, the results were derived in a long-term residential treatment program and may not find replication in less intensive outpatient treatment settings. Second, there are inherent difficulties in identifying “pure” diagnostic types for multiply-challenged youth such as these. While there was striking similarity in the distribution of diagnostic categories across treatment conditions (e.g. Conduct Disorder, Oppositional Defiant Disorder, Personality Disorders), exact matching by diagnosis could not be realistically achieved in this real world setting. Moreover, while all of the youth had documented histories of physical aggression and nearly all had histories of sexual aggression, it was not possible to neither definitively distinguish individual youth as primarily sex offenders or primarily aggressive youth nor match them accordingly across the two conditions.

As in any real world study, it is always difficult to control for the levels of competence of the participating therapists and their adherence to the “purity” of each of the three treatment methods. Best efforts were made to control for this common problem by ensuring that therapists shared the same professional degree and level of clinical experience in each of the two methodologies and by providing training in the delivery of each model prior to the study. Training was provided by a doctorate level psychologist in both groups. The MDT group was trained by the first author and developer of MDT.

The strength of the outcomes could be further enhanced with the inclusion of additional outcome measures and, ideally, long-term follow-up of the youth who participated in the study. This study measured levels of psychological distress, including internal and external, as measured by the CBCL and DSMD. MDT demonstrated a significant decrease in all levels of behavior and Psychological distress.

Family MDT

It was important for the authors to state that MDT is indicated to be effective in treating certain underserved populations, such as African American youth and families. In Apsche, Bass & Houston's (2007) study the two treatments examined were: a parent training program based on the manual *Living with Children* and a videotape modeling parent training. While both treatments were effective, they were more psycho-educational programs geared toward parents rather than stand alone treatments for the adolescent with conduct related disorder. Another promising approach for the treatment of conduct disorder is multi-systemic therapy, an intensive home- and family-focused treatment that has been empirically validated. Multi-systemic Therapy has shown promise for antisocial youth and for adolescent sex offenders. However, this scenario requires a resource-rich combination of services (one of which is psychotherapy), and may not be a realistic option for interventions for most youth. CBT is widely employed in the treatment programs for behaviorally disordered youth across many settings and is frequently used with aggressive youth. There are clear limits to the effectiveness of CBT in the treatment of clients with personality disorders, especially Borderline and Narcissistic types, as Apsche & Bass, (2006a) states is pointed out by Young, Klosko and Weishaar (2003).

Apsche and Bass in the 2006 article, *Family Implementing Family MDT*, summarized the outcome of use of MDT as a treatment modality for families with adolescents who were at risk to be sent to congregate care facilities. Apsche, Bass & Houston (2007) represents a randomized study of the effectiveness of MDT as a Family Therapy to address the adolescents and families problem behavior.

MDT Family is a manualized treatment that examines the individual and collective beliefs of the families of conduct disordered adolescents. The MDT and TAU groups consisted of eight individuals and families.

Family Therapy Practice

Apsche, Bass and Houston, in 2007, presented a brief study showing the use of Family MDT versus TAU in a community setting. Mode Deactivation Therapy family therapy was initiated by implementing the Family MDT assessments. The Family MDT assessments resemble the individual MDT assessments. The family MDT methodology includes a Family MDT Workbook. This workbook is revised to structure the Family Therapy, following an MDT methodology. The workbook is designed to provide a collaborative effect for all family members. The Family MDT Manual addresses the following topics and components:

- Family Commitment to Treatment
- Responsibility for the Family
- Family Belief Analysis (Compound Core Beliefs)
- Mode for the Family
- MDT and Reactive Anger, Aggression, and Impulse Control
- Your Family's Beliefs and Problem Behaviors
- Problem Behaviors and NMDT
- Substance Abuse in Your family
- Empathy for the Family
- Becoming Survivors

1). **The Fear-Family Assessment:** an assessment of sixty items that identifies basic difficulties, anxieties, or fears of the family. Each family member completed the assessment individually and the scores were totaled and a mean score was determined across each item.

2). **The Family Core Beliefs Assessment:** an inventory of ninety-six questions related to the familiar beliefs systems. The Family Core Belief Assessment was scored in the same manner as the Family Fear Assessment.

3). **The Functionally Based Treatment Development Form:** a form that addresses the collective family beliefs and supplies the family a specific methodology to develop and maintain more functional family beliefs.

VCR Method

The families were taught how to balance their beliefs with the **V-C-R** method. To reiterate, V-C-R is a methodology of validation, clarifying and redirecting the belief of the family. While there may be some identification of opposing beliefs, this method attempts to expose the unbalanced or irrational, illogical beliefs deeply held by families in crisis. The individual components of the V-C-R method included:

Validation. Each family member’s thoughts and beliefs were validated initially. Therapists searched for grains of truth in each family member’s responses. It was important to assure each member that his/her responses were accurate as far as his/her interpretation of his/her perceptions. Each member was given appropriate reinforcement that he or she was certain that she or she fully understood and believed.

Clarification. Therapist clarified the content of responses. Therapists also clarified the beliefs that were activated. It was important that clinicians understand and agreed with the content of the clarification. The Clarification step was crucial in understanding the long held thinking schemas. This was clarification of the member’s perspective or reality and beliefs.

Redirection. Therapists redirected responses, to view other possibilities or the continuum of held beliefs. The goal of this step was to help the family member find the exception in the beliefs system. The redirection involved in examining the opposite side of the dichotomous or dialectical thinking. It was crucial to partner with the member to see the “grain of truth” in each of the dichotomous situations presented.

Deregulated Belief System

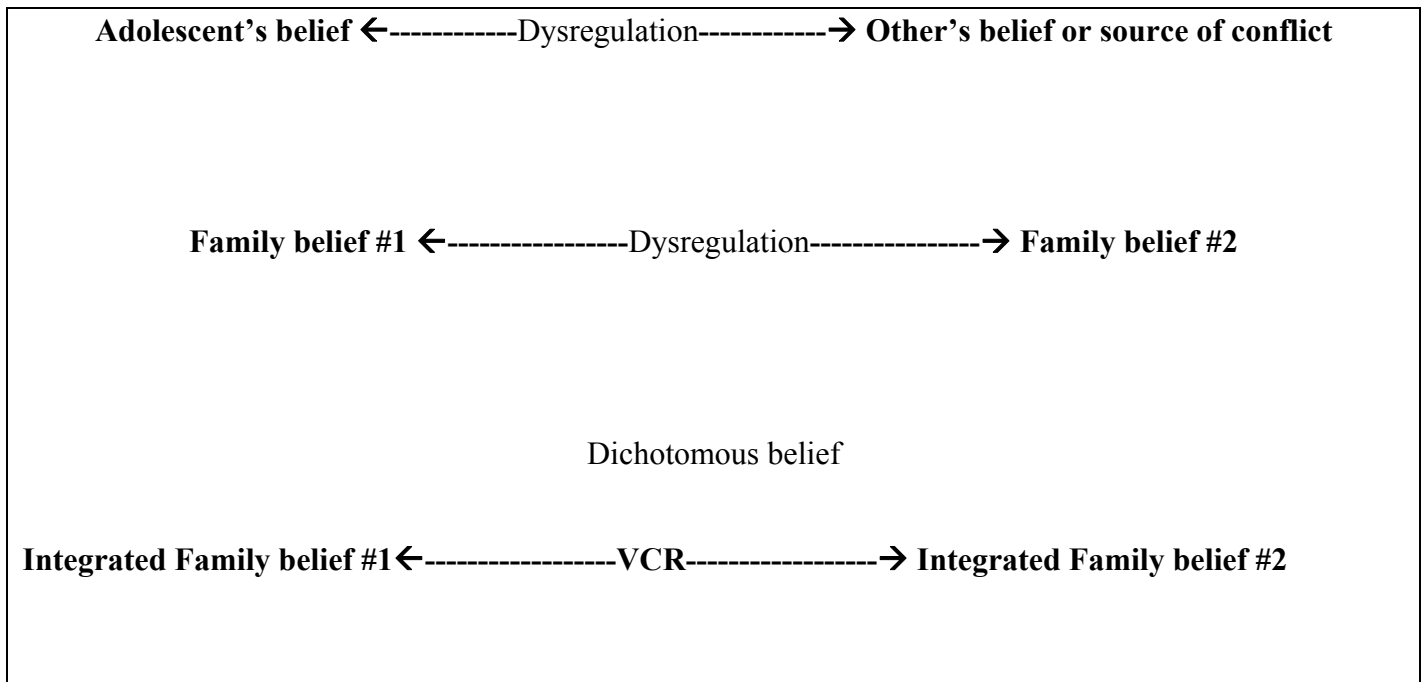


FIGURE 1: Diagram of the Dysregulation process

Figure 1 highlights the direction of the deregulated belief system. Mode Deactivation Therapy family therapy focuses on aiding the youth and family member to see both sides of the dichotomous beliefs and look for the truth and compromise in understanding the truth in both beliefs. The use of a continuum of belief was implemented in family therapy to examine the individual’s belief of truth in both of the dichotomous beliefs and situation.

Each individual in the family, as well as the family collectively completed the Conglomerate of Beliefs and Behaviors (COBB). The COBB examined each individual’s belief as well as their corresponding behaviors. Once the families Beliefs and Behaviors were determined they were compared to each individual’s beliefs and behaviors.

These methodologies addressed the specific behavior of each family member and contrasted the family at larges’ score. The behavior was explained and understood as the individual integrated his/her belief(s) and behavior(s) within the family system at large.

CHART 1: Family Beliefs, Behavior and subsequent behavior

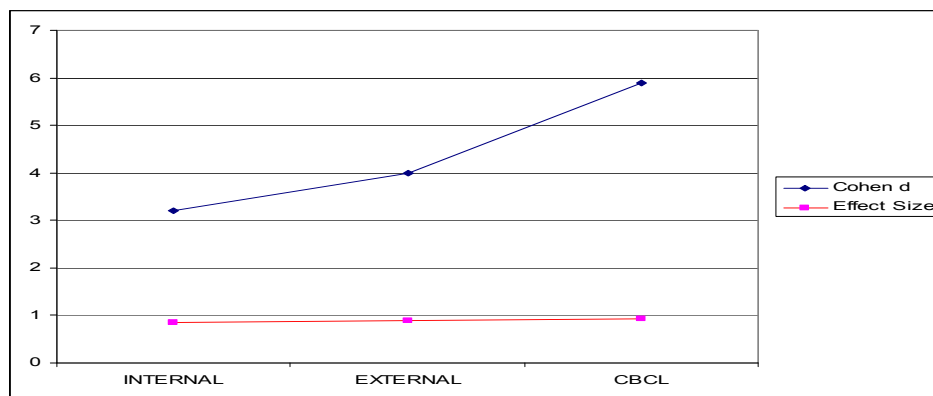
Client’s Belief	Direct Behavior	Sibling Reaction	Mother’s Reaction	Conclusion
“When I get angry my emotions go from annoyed to furious.”	Punches brother	Pain; runs to mother	Screams at client	Mother apologizes but criticizes again
		Isolates	“You are a f--- mess!” Hits client	Continuation of Conglomerate Family

If we look at this chart as an example of the client’s behavior, he punches his brother, he is isolated, the mother would, “put things right.” However, as a family, they said they waited for the “pain to go away” and things will go “back to normal.” “Normalcy” was a continuation of illogical belief schema, which in time would be the catalyst for a new cycle of self-mutilation in the future (Apsche, Bass & Houston, 2007).

The goal of the MDT therapist was to implement V-C-R with the family while pointing out and balancing the individual and family beliefs.

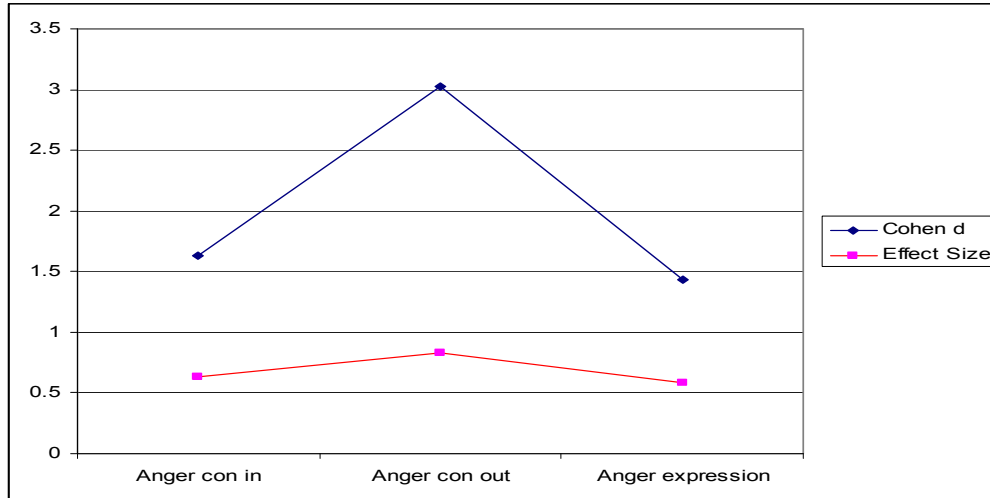
Further, Apsche, Bass, Zeiter & Houston (2008) completed a Family MDT clinical study of fourteen adolescents who evidenced problems such as sexual and physical aggression as well as oppositional behaviors including verbal aggression (Apsche & Bass, 2006). The results indicated that MDT out performed TAU. At the eighteenth month of observation the MDT group has zero incidents of sexual recidivism, while the TAU group had ten reported incidents. The MDT group reported three incidents of physical aggression while the TAU group reported twelve incidents. The results were promising for MDT as a family therapy, and indicate that further study with a larger group should be pursued (Apsche, Bass & Siv, 2006).

A more subjective but equally important measure was assessed – physical aggression. Although both intervention techniques impacted the client’s tendency to manifest anger as physical violence, it is important to note that the two-year follow-up showed not only maintenance of an ability to bind anger, but also a further lessening of its frequency. These data were derived from report by staff during the first month of the child’s treatment, then again during the last month. Inter-rater reliability was enforced by the supervision of the unit supervisors. The two year follow up data was reported by the child’s family and was to reflect the entire timeframe since discharge, for example the TAU group reported 59 incidents of physical aggression since discharge as compared to 2 in the MDT group. These data are suspect due to the difficulty to insure inter-rater reliability, but were included for the interpretation of the reader.



CBCL	Cohen d	Effect Size
INTERNAL	3.209	.848
EXTERNAL	3.985	.893
CBCL	5.89	.9355

As a final measure to assess meaningful outcomes, we decided to measure the magnitude of the result, rather than the probability that the result was due to chance. We employed the Cohen d statistic to measure the strength of the found outcomes as produced by effect size. The CBCL means indicated significantly large effect sizes for internal (.848) and external (.893) states. These effects sizes suggest that results analyzed were not due to chance.



STAXI	Cohen d	Effect Size
Anger con in	1.636	.6331
Anger con out	3.028	.8344
Anger expression	1.434	.5828

The results of the STAXI were also analyzed utilizing the Cohen d method to assure valid results. The results show that the conclusions were not due to chance. The statistic reveals a medium effect size for general anger expressed (.582), while the control of anger outward had a large effect size (.834). Controlling inward anger showed a medium effect size (.663). After ruling out chance, we can assume that the results of the study are valid and not due to chance (Apsche, Bass, Zeiter & Houston 2008).

Independent Replication Studies of MDT

Replication Study 1:

Murphy and Siv (2007) completed a replication study of Mode Deactivation Therapy. Each group, both MDT and TAU had ten adolescent males, who engaged in physical and verbal aggression. The results of this replication study indicated that MDT reduces physical restraint and physical aggression significantly better than TAU. Improvements in scores on the Child Behavior Checklist were approximately two standard deviations superior by the MDT group than the TAU group, in all three domains. This study was an independent replication of the results of a controlled clinical study of MDT.

It is important because the significant indications of the superior results of MDT with this adolescent male population. Also, significant to note is that recently Murphy and Siv (2007) amended and added to this study with the inclusion of effect size data to address the small sample size. The results of the effect size data suggest that MDT was significantly more effective than TAU based on effect size data.

Replication Study 2:

Thoder & Cautilli (2010) conducted an independent evaluation of the effectiveness of MDT in a residential setting with juvenile sexual offenders. Thoder & Cautilli found that MDT was superior to traditional relapse prevention cognitive behavior therapies to reducing the following:

- 1- Internalizing and externalizing disorders measured by the CBCL.
- 2- Aggressive beliefs towards others, measured by Belief about Victim assessment.
- 3- Critical clinical pathology as total scale as measured by the DSMD. (These areas include anger, delinquency, anxiety and aggression.)
- 4- The authors concluded that MDT as a third wave methodology was more effective than relapse prevention cognitive behavior therapies with adolescent male sexual abusers.

Ten Years of MDT Data Review

As part of a study measuring the effectiveness of MDT throughout ten years of application, Apsche and DiMeo (2010) reviewed a total of 458 male adolescent cases using MDT methodology. Of the total number, 204 participants had Conduct Disorder, while 254 had committed sexual offenses. In regards to Axis I diagnoses, 52% of the adolescents were diagnosed with Conduct Disorder, 45% with Oppositional Defiant Disorder, 51% with PTSD, and 20% with other Axis I diagnoses. In regards to Axis II diagnoses, 58% of the adolescents were diagnosed with Mixed traits, 40% with Borderline Personality Traits, 45% with Narcissistic Personality Traits, 2% with Histrionic Personality Traits, 30% with Dependent Personality Traits, and 20% with Avoidant Personality Traits. Population ethnicity/race included 55% African-American, 40% Caucasian, 4% Latin and 1% other. Thirty-one percent of the participants were 17-years-old, 44% were 16-year-old, 17% were 15-years-old, and 8% were 14.5-years-old. Of the 458 adolescents, 92% experienced four types of abuse, 54% witnessed violence, and 28% presented parasuicidal behaviors. The MDT study of this population found that there was a recidivism rate of less than 7% after treatment (Apsche, Bass, & Siv, 2006). Demographic characteristics are also presented in Table 2.

Effect Size

Data analyses for MDT individual, family, and the Murphy and Siv (2007) replication data show the methodology to be effective in most areas. The effect size (Cohen's *d*) and the effect size *r* for the MDT studies were in the large range of effect on the following individual measures (see Table 3):

- 1- Sexual Aggression
- 2- Physical Aggression
- 3- CBCL
- 4- STAX 1
- 5- JSOAP-II

The effect size for the MDT studies was in the large range of effect on the following family measures (see Table 4):

- 1- CBCL
- 2- STAX 1
- 3- Physical Aggression
- 4- Sexual Aggression

The effect size for the MDT studies was in the large range of effect on the following replication data (see Table 5):

- 1- CBCL
- 2- Physical Aggression
- 3- Therapeutic Holds

Medium effect size was on the family studies in verbal aggression only. The BDI in the replication data produced a small and negligible effect size.

Measurement Characteristics

All published studies implementing MDT in all areas were evaluated, as well as data from non-published studies. The method of meta-analysis is used to merge and analyze results from individual studies for the purpose of integrating and findings (Glass, 1976). The data point in meta-analysis is usually a measure of effect size. Effect sizes quantitatively express changes in targeted behavior in terms of standard deviations. Effect size information can be extracted from individual studies using standard methodology (Cooper & Hedges, 1994; Rosenthal, 1991), which requires that the study reports group means and standard deviation or measures of the differences between condition such as *t* or *F* statistics. The present meta-analysis used the DSTAT statistical package for the computation of effect sizes (Johnson, 1993).

One of the widely used measures of effect size is Cohen's *d* (Cohen, 1988), which was used in this study. For between-subject designs, Cohen's $d = (\text{mean of treatment group} - \text{mean of control group}) / (\text{pooled within - group standard deviation})$. For within-subject designs, Cohen's $d = (\text{mean of the post-treatment phase} - \text{mean of the pre-treatment phase}) / (\text{pooled within - group standard deviation})$. Within-subject studies generated a form of effect size (one based on intraparticipant variance, which is not comparable with conventional variance statistics), which does not permit equal weighing with studies that include independent treatment and control groups. Therefore, while procedures are available for the derivation of effect size measure from single-subject and within-subject designs (Allison, Faith, & Franklin, 1995), the present study included only group comparison designs to permit the traditional calculation of effect sizes.

Characteristics of Studies

These data were published in a chapter by Apsche & DiMeo (2010). They suggest that the MDT studies included 38 published studies and data accumulated, but unpublished, by Apsche. A total of 458 adolescents were included in the MDT individual studies; a total of 61 were included from the family MDT studies; and 30 were included from the replication study. Among studies of child therapy, Casey and Berman (1985) implemented an un-weighted least squares (ULS) method, closely corresponding with Cohen's (1988) conventions for medium (.5) and large (.8) effects. Along with the studies of child therapy, Casey and Berman used a ULS method to summarize studies from 1953 to 1983 and found an average effect size of .71 for treatment measure placebo and no-treatment controls among children ages 12 and younger. Sukhodolsky, Kassino, and Gorman (2004) implemented a meta-analysis of treatment outcome studies of CBT for anger related problems in children and adolescents, including 21 published and 19 unpublished reports. The mean effect size (Cohen's $d = 0.67$) was in the medium range and consistent with the effects of psychotherapy with children in general. Kazdin, Bass, Ayers, and Rodgers (1990) summarized studies published from 1970 to 1988 using ULS methods and reported mean effects of .88 and .77 for treatment of children ages 4-18 compared with no-treatment and placebo conditions respectively.

More recent meta-analyses of individual child and family therapies have used WLS methods to aggregate study effects. Weisz, Weiss, Han, Granger, & Morton (1995) summarized studies of individual therapies for children ages 1.5- 17.6 years, published between 1967 and 1993, and reported an average effect of 0.54. Two statistical reviews of the effectiveness of family therapy also used a WLS approach (Hazelrigg, Cooper, & Bourduin, 1987; Shadish, Montgomery, Wilson, Wilson, Bright & Okunabua 1993) and reported comparable effect sizes (i.e., from .45 to .50 and .36, respectively) for family treatments targeting child-identified problems. The purpose of the MDT

meta-analysis was to measure effectiveness of MDT across settings with adolescent males ages 14.5-18 with instances of trauma, physical aggression, problems with conduct, and personality traits.

Meta Analysis

Apsche, Bass & DiMeo (2010) published an extensive meta- analysis of 21 MDT studies. MDT studies with N's over seventeen and comprehensive data analysis were examined, as well as the large unpublished study with an N of 143. All previous unpublished studies with smaller N's were not included and were removed for clarity and to not rely on non-published studies or case studies with small data basis. The data for this meta-analysis included nineteen published and one unpublished MDT studies. The meta-analysis studies yielded a sample population of 573 male adolescents between the ages of 14 through 17. Participant characteristics included Axis I and II diagnoses, many with co-morbid presentation (Table 2). Conduct disorder (51%), oppositional defiant disorder (42%), and post-traumatic stress disorder (54%) were prevalent among the population. Additionally, 56% of the population presented mixed personality traits. Fifty-four percent of participants were African American, 43% Caucasian, 4% were Hispanic American and one percent are listed as other (mixed race). Ninety percent of participants had experienced all four types of abuse – sexual, physical, verbal, and neglect. Furthermore, 56% had witnessed violence and 24% were parasuicidal. Recidivism rates were less than 7%, and sexual offense recidivism less than 4% after two years post MDT treatment. Apsche , Bass & DiMeo's (2010) meta- analysis study demonstrated dramatic results that assured MDT's future as an evidenced based methodology for treating adolescents. The following tables of the meta analysis results clearly document these dramatic results.

Table six-a shows graphically the effect size as measured by Cohen's d.

Table 6a. Effect Size and Cohen's d

Cohen's d -Effect size-a

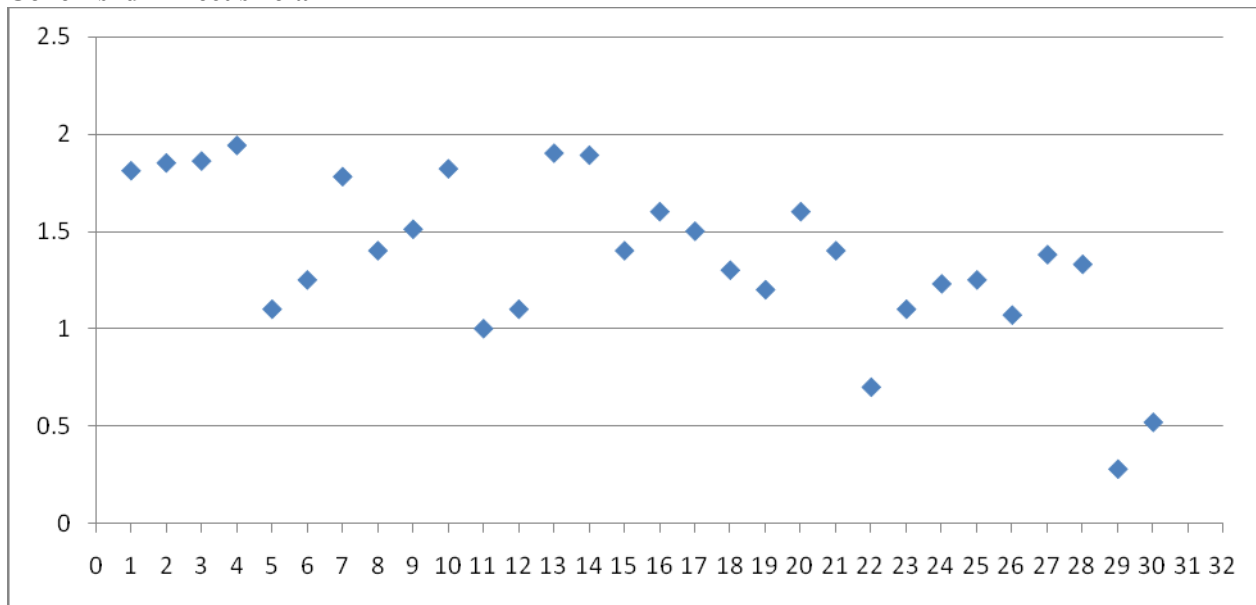


Table six-b shows graphically the effect size calculated *r* scores

Table 6-b. *Effect Size* calculated *r* scores
R scores- Effect Size-b

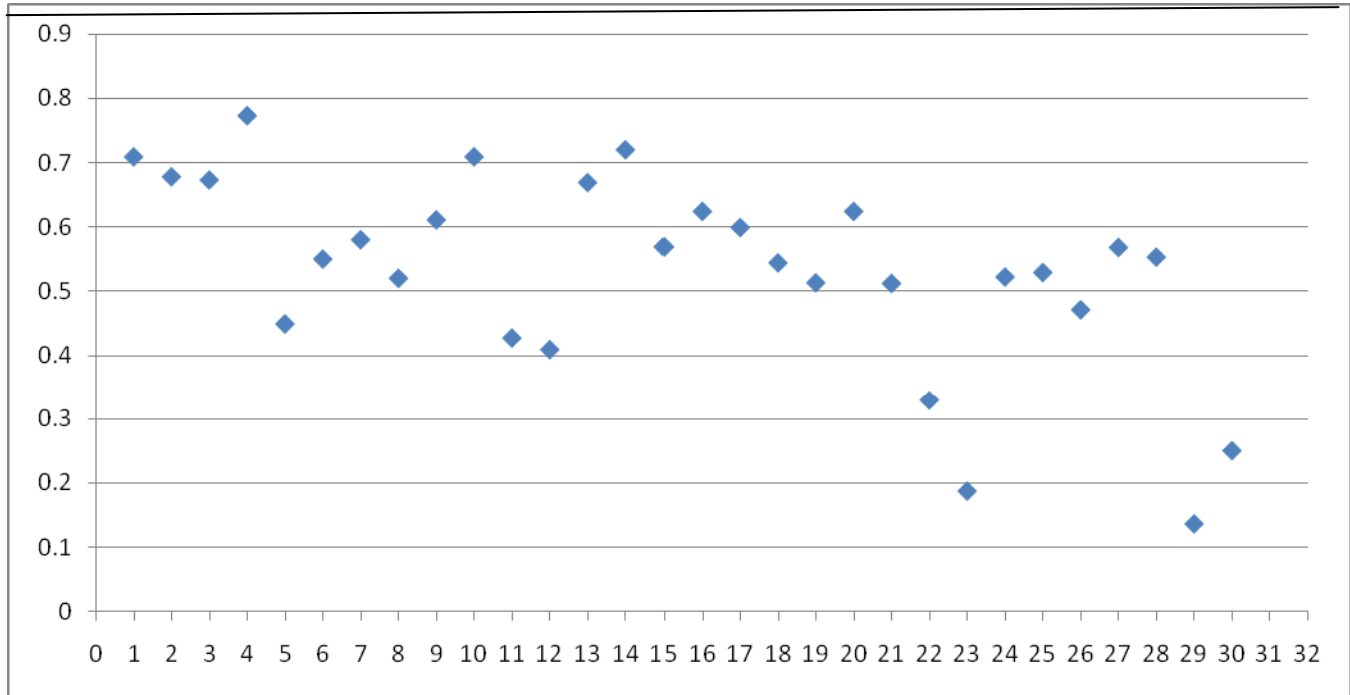


Table 6. *Effect Size and Cohen's d Key*

#	Category
1	SO- Physical Aggression
2	CD- Physical Aggression
3	Total Physical Aggression
4	Sexual Aggression
5	CBCL INT
6	CBCL EXT
7	CBCL Total
8	CD STAXI Anger Con In
9	CD Anger Out
10	CD Anger Ex
11	SO STAXI Anger Con In
12	SO Anger Con out
13	SO Anger Ex
14	JSOAP Total
15	Family CBCL INT
16	Family CBCL EXT

17	Family CBCL Total
18	Family STAXI Anger Con In
19	Family STAXI Anger Con Out
20	Family STAXY Anger Ex
21	Family Behaviors- Physical Aggression
22	Family Behaviors Verbal Aggression
23	Family Behaviors Property Destruction
24	Replication- Physical Aggression
25	Replication- Therapeutic Holds
26	Replication- CBCL INT
27	Replication CBCL EXT
28	Replication CBCL Total
29	Replication BDI
30	Replication SIQHS

Mediation Analysis

Bass & Apsche are currently preparing a manuscript of an MDT study consisting of 120 individuals and their families. The measures of hypothesized mediators and the specific MDT mediators are as follows:

- 1- Mindfulness. Mindfulness is hypothesized to reduce anxiety and fears as mentioned by the Fear-R Assessment.
- 2- Acceptance/Defusion. These mediators are intended to reduce experiential avoidance by thoughts, feelings, and life experience as measured by the Anxiety Control Questionnaire (ACQ).
- 3- Balancing the Functional Alternative beliefs (FAB) by Validation, Clarification and Redirection (VCR) as measured by the Compound Core Belief Questionnaire (CCBQ). These hypothesized mediations reduce anxieties, fears, avoidance and personality beliefs. By doing so, it is hypothesized they positively effect the outcomes of reducing sexual, physical and verbal aggression as well as symptoms of PTSD. The early data suggests that these mediators are imperative in the overall effect of MDT individual and family therapy.

MDT and Recidivism

In many of the MDT Studies, Apsche, et al., (2005, 2006) have examined recidivism over several years and found recidivism rates often less than 7%. Apsche and DiMeo (2010) and Walker, McGovern, Poey and Otis (2004) examined ten separate studies of treatment for adolescents and they report promising results with cognitive behavioral methodology. Reitzel and Carbonell (2006) reported the following results:

“Published and unpublished data from nine studies on juvenile sexual offender treatment effectiveness were summarized by meta-analysis (N=2986, 260x known juveniles). Recidivism rates For crimes and offenses with or without treatment were:
 Sexual- 12.52%
 Non –sexual, violent- 24.73%
 Non- sexual, non- violent- 28.52%
 Unspecified non- sexual- 20.40% .”

The reported rates of recidivism for MDT studies by Apsche et al., (2010) was a total of 7% for all crimes and less than 2% for sexual offenses based on more than 650 adolescent males. Underwood (2010) replication study reports two-year results of a total recidivism rate of less than 7% and none for sexual offenses, and these data were monitored by a neutral agency.

Adolescent Mindfulness Manual

This workbook was designed for use by any adolescent considering a contemplative practice. However, it is of specific use to adolescents who are in therapy for depression, anger, pain and alienation from parents or authority figures. The manual works especially well with Third Wave methodologies such as ACT, FAP and MDT. The manual combines techniques for allowing the individual to learn mindful breathing, meditation exercise, imagery as well as mindfulness imagery to decrease stress, anxiety, anger and aggression. It is part of the MDT process and has been shown in the mediation analysis article to be a positive mediator in MDT treatment.

Conclusions

MDT has been shown to be more effective as other approaches such as CBT, DBT and SST. This review also showed the results of a thorough review of literature delineating the effectiveness of MDT in treating adolescent clients with reactive emotional dysregulation, who presented with behaviors involving parasuicidal acts, sexual offenses other aggression. Case studies confirmed that MDT showed as much merit as conventional cognitive therapy. Effect size data strongly suggests that MDT is the most effective methodology on this particular typology of adolescents. Clients with complicated histories of sexual, physical, or emotional abuse, as well as neglect, and multi-axial diagnoses, can be helped using this approach, enhancing clinical rapport.

Mode Deactivation Therapy is seen as preferred alternative to other approaches, which sometimes sets up an atmosphere of argumentativeness. This confrontational approach is contraindicated with juveniles who present with proactive or reactive disorders. Clinical attractiveness can be enhanced, which can lead to decreased resistance from the client.

Data indicates that MDT is effective in reducing the rate of physical and sexual aggression across treatment. Furthermore, the evidenced-based approach of MDT readily lends to providing clinical data in a real-world setting that has profoundly positive impact in reducing extremely life interrupting behavior.

MDT can be successful as an approach used in multiple levels of care, both as a preventive and interceptive therapy regarding aggression, sexual offense and suicidal behaviors.

MDT also shows promise in use with underserved populations, and brings sensitivity necessary to respond to certain culturally bound norms prevalent with special groups. MDT can greatly help the identified client and his family members to become stable and more productive in society.

The meta analysis of MDT demonstrated significant improvements for adolescents who received MDT in treatment. The meta analysis validated that MDT is an effective, evidenced based methodology for adolescent males, ages 14-18.

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Contact Information:

Jack A.Apsche, Ed.D., ABPP
Walden University
School of Psychology
College of Social and Behavioral Sciences
Walden University
Minneapolis, MN 55401
(571) 439-1069

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