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Contents

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Additionally, IJBCT hopes to highlight the importance of conducting clinical research from a strong theoretical base. IJBCT areas of interest include, but are not limited to: Clinical Behavior Analysis, Behavioral Therapy, Behavioral Consultation, Organizational Behavior Management, Human Performance Technology, and Cognitive Behavior Therapy. IJBCT is an independent publication and is in no way affiliated with any other publications.

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- using well-known abbreviations
- using the active voice

Begin with the most important information, but don't waste space by repeating the title. Include in the abstract only the four or five most important concepts, findings, or implications. Embed as many key words and phrases in the abstract as possible; this will enhance the user's ability to find the citation for your article in a computer search. Include in the abstract only information that appears in the body of the paper.

Style

Remember that not all people who read your abstract will have a high level of psychological knowledge. Define all acronyms and abbreviations, except those for measurements.

- Spell out names of tests
- Use generic names for drugs (when possible)
- Define unique terms

Use the present tense to describe results with continuing applicability or conclusions drawn and the past tense to describe variables manipulated or tests applied. As much as possible, use the third person, rather than the first person.

Abstracts for Empirical Studies

Abstracts of an empirical study are generally about 100–120 words. Include the following information:

- problem under investigation (in one sentence)
- pertinent characteristics of subjects (number, type, age, sex, and genus and species)
- experimental method, including apparatus, data gathering procedures, complete test names, and complete generic names and the dosage and routes of administration of any drugs (particularly if the drugs are novel or important to the study)
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Cordially,
Joe Cautilli and BAO Journals

Editorial

I am pleased to be a Guest Editor for this edition of IJBCT. My intent was to feature a global edition of colleagues who were mentored in some setting by Dr. Jack Apsche. The challenge was finding eight articles that might effectively represent the influence that Jack has had on many individuals in the field of psychology and more specifically, adolescent mental health.

This edition has a true International influence and texture of authors. Joan Swart is from South Africa and was a graduate student of Jack's for several years. Joan has become a huge influence in the next phase of development and assessment of the efficacy of mode deactivation therapy as an international methodology.

I also chose to feature the work of Roghieh Nooripour from Iran. Rogi was the primary investigator and author in two articles in this edition and her work demonstrates the diverse interests of both Rogi and Jack. Currently Rogi is working on the development of MDT and mindfulness with Jack, treating adolescent in Iran.

Corliss Bayles and Paige Blossom are both dissertation students of Jack and are equal parts talent, intelligence and patience in their academic pursuits. Currently Corliss and Paige are engaged in investigating mindfulness and MDT in the treatment of adolescents with substance abuse issues.

Finally, I have had the opportunity to know, work and learn with Jack for a significant part of my professional life. We have been friends, colleagues and brothers for several decades. I took a look at some of the new and innovative ways his approach and method have been used to address adolescent mental health concerns. We procured new data from recent investigations and reviewed it in both individual and family MDT in a renewed meta-analysis.

I hope this edition proves to be an interesting and fun read as we feature new and international faces in our field.

Respectfully,
Christopher K, Bass, PhD

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Family mode deactivation therapy (FMDT) mediation analysis

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Walden University

Abstract

Youth behavioral disorders are not only considered widespread and costly in terms of financial, human, and societal impact into adulthood, but also resistant to interventions, especially when related to childhood trauma and accompanied by continued social distress and comorbid conditions such as personality, mood, and substance use disorders. Mode Deactivation Therapy (MDT), a third wave contextual therapy approach derived from cognitive therapy principles, was developed in recognition of the need for this population. The MDT theoretical framework and methodology contains elements of mindfulness, Acceptance and Commitment Therapy (ACT), and Dialectical Behavior Therapy (DBT), but it is the unique Validation-Clarification-Redirection process (VCR) step that sets it apart from other contextual approaches. VCR is considered to be the core process component in MDT to affect therapeutic change by validating core beliefs as reasonable responses to past experiences, but exploring functional alternative beliefs. The main objectives of this study is to review evidence of the effectiveness of family-based MDT (FMDT) compared to standard treatment, and provide a preliminary randomized controlled group study of the mediation effects that VCR and other components have on the overall treatment mechanisms and outcomes. Recommendations for further study conclude the current scope.

Keywords

Mode Deactivation Therapy, MDT, mindfulness, ACT, DBT, CBT, adolescent, schema, family therapy, FMDT, trauma, conduct disorder

The extent of the problem and associated cost of youth behavioral disorders are often underestimated, which is exacerbated by the fact that these conditions, especially in the presence of childhood trauma and comorbid personality, affective, and substance use disorders are considered complex and challenging to treat. Boyle et al. (2011) estimated that over 15 percent of American youth have a clinical level behavioral problem, and a similar percentage have a developmental disorder, while there is substantial overlap between the two. The economic and social impact of adolescent behavior problems is considerable, spill over to families and communities, and persist into adulthood—it is estimated that half of adult disorders start by age 14 (Gullotta & Adams, 2005; Miller, 2004; Rhule, 2005).

Therefore, the pressing need to develop an efficient and effective contextual treatment for this youth population was recognized, which led to the conceptualization of Mode Deactivation Therapy (MDT). Already, more than 20 research studies have consistently provided evidence of the success of MDT when compared to a "standard" cognitive-behavioral therapy (CBT) treatment for adolescents with trauma-related, behavioral and complex comorbid disorders. It is recognized that widely applied benchmark treatment approaches could fail, especially when concurrent social, personality, and physical problems exist (Kingdon, Harsen, Finn, & Turkington, 2007). MDT is shown as a viable option under these circumstances, but more research is required to study the effect and interaction of individual process components on the overall mechanism of therapeutic change.

Literature review

Third Wave Therapy, or contextual therapies, was punctuated with Cognitive Behavior Therapy (CBT), since the onset of Mindfulness Based Cognitive Behavior Therapy and the development of specific contextual science based treatments, such as, Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), Functional Analytic Psychotherapy (FAP), and Mindfulness and Meditation from ancient Buddhist practices (Apsche, Bass & Backlund, 2012; Apsche, Bass & DiMeo, 2010). Even bodily disease and dysfunction have been shown to improve when all parts of human existence are treated instead of just the physiology or just the behavior. According to Barnes, Plotnikoff, Fox, and Pendleton (2000), the optimum is to treat the mind, body and spirit together.

In 1996, Beck demonstrated evidence of systematic biases across multiple domains suggesting that a more global and complex organization of schemas were involved in intense psychological reactions based on the multiplicity of related symptoms that the cognitive, affective, motivational, and behavioral domains in several psychopathological conditions that were expressed by the content, structure, and function in one's personality (Apsche, 2009a). Beck (1996) theorized the phenomena of "sensitization" of successive re-occurrences of a disorder. Such a disorder may be triggered by a less intense frequent experience, and coexist with other psychopathological phenomena, including personality traits that form a relationship between the conscious and unconscious processing of the information (Apsche, 2009a).

Mode Deactivation Therapy (MDT) has centered itself as one of the leading therapies to encompass balanced mind, body, and spirit philosophies. Research based on the principles of cognitive theory done at the Center for Cognitive Therapy at the University of Pennsylvania held extreme promise as the most effective treatment for adolescents and families regardless if the issues were simple, complex, or exasperated by comorbidity of multi-axial diagnosis (Beck, Freeman, & Davis, 2006). A meta-analysis conducted by Apsche, Bass, and DiMeo (2011) suggested that MDT was effective in treating such diagnostic constellations, reducing sexual and physical aggressive behaviors, as well as reducing the scores on the Child Behavior Check List (CBCL, Achenbach, 1991) and State-Trait Anger Expression Inventory (STAXI, Spielberger, 1999) by combining individual MDT with family MDT. Bass and Apsche (2013) reported—in recent literature—a 7% recidivism rate over a two-year post-treatment period, which supports evidence of the efficacy of MDT and demonstrated that MDT was significantly more effective than CBT in multiple categories, including anger, aggression, and recidivism.

The first 38 published and unpublished research papers proved that "finding supports the notion that MDT as a superior form of Cognitive Behavioral Therapy addresses not just the acting out behavior, but internal states as well" (Apsche, Bass & DiMeo, 2010, p.180). These studies were done with an extremely vulnerable population of juvenile males with Conduct Disorder that was compounded by sexual trauma and Posttraumatic Stress Disorder (Apsche, Bass, Zeiter & Houston, 2008). "Validation-Clarification-Redirection (VCR) is the fulcrum of the transformation of detrimental learned beliefs about the adolescent's environment that manifest destructive behaviors into ideas" (Apsche, Bass & Backlund, 2012, p. 2). Evidence highlighted in the recent literature review supports the effectiveness of MDT with VCR as effectuating the change when implemented in the intervention (Bass & Apsche, 2013). Its roots are found in combining elements from ACT, CBT, DBT, and social skills training with the unique VCR methodology and mindfulness practices. By centering on the individual and their mindfulness, adolescents with Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) are not shamed by their behavior but empowered with their core existence; good, bad and dysfunctional. It is the VCR approach that connects the mind, body, and spirit in adolescents (Apsche, Bass & Backlund, 2012).

By incorporating treatment of the adolescent with family MDT (FMDT), disharmony within the

Personal reflexive statements

Jack Apsche, Ed.D., ABPP, is a psychologist, author, artist, presenter, consultant, and lecturer based in Norfolk, VA. Dr. Apsche is the Program Director for Forensic Psychology, College of Social and Behavioral Sciences at Walden University and the founder of the Apsche Center for Mode Deactivation Therapy. He is board certified in clinical child and adolescent psychology, clinical psychology, counseling psychology, cognitive and behavioral psychology, group psychology, and couples and family psychology by the American Board of Professional Psychology. His primary research is in adolescent externalizing disorders. Dr. Apsche has published extensively, including several books such as "Mode Deactivation Therapy for Aggression and Oppositional Behavior in Adolescents" (2012), "Current Application: Strategies for Working with Sexually Aggressive Youth and Youth with Sexual Behavior Problems" (2010), and "Responsibility and Self-Management" (2007).

Joan Swart, Psy.D., is a forensic psychologist, researcher, and consultant based in Cape Town, South Africa. Her primary areas of interest are assessment and treatment of violent forensic populations, behavioral profiling, deradicalization, and the psychology of terrorism and armed conflict. Joan has authored a variety of publications and presented on topics of psychopathy and antisocial behavior, the effect of epigenetics on aggression, and serial sex offenders, including a book titled "Homicide in Armed Conflict: A Psychological Perspective". She is a member of the South African Medico Legal Society and Psychological Society of South Africa, among others.

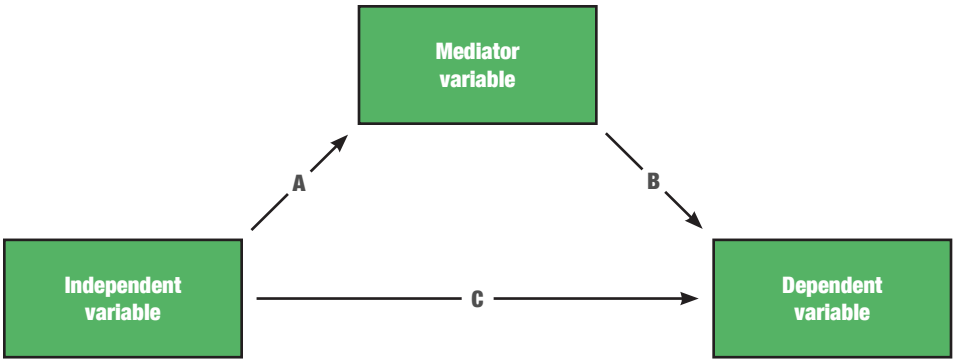

Figure 1. Simple mediation model
Source: MacKinnon, Fairchild, & Fritz (2007)

family was reduced, bringing the troubled youth and family together which enabled the therapist to maintain treatment through a two-year period. MDT compared effectively to Treatment as Usual (TAU) when it successfully tracked recidivism rates (Apsche, Bass & Houston, 2008). FMDT is a manualized treatment that incorporates CBT, DBT, ACT, and FAP administered according to the MDT Clinician's Guidebook (Apsche, 2009b). The process may take up to 8 to12 months with weekly individual and family group therapy. FMDT offers the therapist and the family the ability to collaborate and learn structure, measure, and track progress in treatment by using the Family MDT workbook that provides structure for the family therapy following the MDT methodology (Apsche & Apsche, 2009). By using the collective case conceptualization process, the therapist examines the process of family interaction, then using MDT, the therapist attempts to move the family to use a new script.

Literature explained that FMDT uses VCR to teach the family how to balance their beliefs, exposing the identity of irrational and illogical beliefs that the family, as a unit, deeply holds. The therapist validates the family's beliefs and searches for truth in each family member's response (Apache, Bass, & Houston, 2008). The therapist then clarifies the content of each family member's response and clarifies the beliefs that activated the response. This step is crucial to understanding the family's belief system. The final step in the VCR portion of the intervention is the redirection phase. The therapist redirects the family's response to view alternative possibilities or continuum of held beliefs. The goal here is to help the family members find the exception in the belief system.

Studies have shown that adolescents express internalized angry or hurt feelings with externalized expressions of various problematic behaviors. Apsche, Bass, and DiMeo (2011) showed that where the family demonstrates forms of aggression, verbal expressions of feelings and internal states may not be met with family support. MDT addresses this issue of non-support by teaching the family, as a whole, how to engage in dialog with each other without showing aggression. It must be remembered that the entire family is the client, not just the child. MDT has been shown to be an effective evidence based methodology specifically toward the population of male adolescents. Follow up studies have shown that families who have undergone MDT show less aggression and family synchronization has increased (Apsche, Bass, & Houston, 2007; Apsche, Bass, Zeiter, & Houston, 2008).

Mediation analysis in psychotherapy research

Although a great many research studies explore the efficacy of a wide variety of psychotherapy approaches for an equally broad range of conditions, there is a lack of evidence through which mechanisms these improvements are achieved (Kazdin, 2005). A mechanism can be defined as a group of components that are applied concurrently or consecutively to affect a desired change. Many of these practices or principles are well defined in the respective therapy protocols and some are shared across different approaches, but not all the variables that may affect treatment outcomes are always known or accounted for. According to Wilt (2012), each intermediate step in therapy is an intervening variable or mediator that plays a varying role in the ultimate outcome. By knowing when and how much such an element contributes to treatment goals, therapy methodology can be refined to make the process more effective through improved understanding of causality. Evidence of causal effects—*that* psychotherapy works—does not provide an explanation of *why* it works. Causal effects do not provide information of the mechanisms required to achieve the outcome. Therefore, a thoughtful and theory-grounded disentanglement of elements in therapy is required to separate and explore the interaction and effect of each one on change effects throughout the treatment process. This scientific investigative approach has been lacking in psychotherapy research until recently, but rapid improvements are made in conjunction with other disciplines such as neuroscience to ensure that psychotherapy evolves to its full potential.

Assuming that the path between treatment (independent variable) and outcome (dependent variable) is statistically significant, for a mediator to be relevant, the relationship between treatment and mediator, and mediator and outcome must also be significant (see Figure 1 above). To be relevant, change in the mediator has to precede any change in outcome, the mediator has to be distinctive from general effects of psychotherapy, and the effect must be consistent, replicable, and empirically grounded.

As with all psychotherapy research, interactions between variables are on many levels and directions, and not easily identified, isolated and measured. Therefore, to probe more deeply and meaningfully into the nature of causal relationships in psychotherapy, appreciation of the roles and distinction of mediators and moderators is worthy of attention in research conception and design. According to the classical reference on this topic by Baron and Kenny (1986), "a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (p. 1174). Whereas a moderator is a third variable that influences the zero-order correlation between a dependent and independent variable, a mediator accounts for the strength of the relation between the predictor and criterion (see Figure 2 on the next page). In order to compare and understand how and why psychotherapy leads to change—evidence that is still inadequate in terms of scientific grounding and statistical integrity—sound conceptual work is required to deconstruct therapeutic mechanisms in relation to mediators, moderators, and predictors (Kazdin, 2009). "Whereas moderator variables specify when certain effects will hold, mediators speak to how or why such effects occur." (Baron & Kenny, 1986, p. 1176). Therefore, a moderator is a variable that influences the strength of a relationship between two other variables, while a mediator is a variable that explains the relationship between the two other variables.

In deconstructing the potential influencers of change in the therapeutic process, it is possible to gain a deeper empirical understanding of the therapeutic change mechanisms that is supported by a valid theoretical framework. Kazdin (2007) have reminded us that "we know that therapy 'works', i.e. is responsible for change, but have little knowledge of why or how it works." (p. 2). This study—and similar future research—aims to explore the temporal properties and effects of the components of the MDT system, and how they interact with and influence one another at different stages in the process, while contributing to the evidence base of the effectiveness of MDT in specific applications.

■ Method of MDT analyses

The current research design was planned with a dual objective in mind, namely to compare the efficacy of MDT to classical CBT treatment for the adolescent population with behavioral problems complex comorbid conditions, and to determine the mediating effect of the Validation-Clarification-Redirecting (VCR) process that is unique to the MDT methodology on the therapeutic change process. At this time it is important to note that the comparison between MDT and CBT does not represent a mediation analysis, but is rather a comparison between respective outcome measures, in this case CBCL and STAXI-2 pre- and post-treatment results. As the therapeutic concepts, principles, and components differ greatly between the two approaches, it was not possible with the current research design to explore distinctive components to determine the mechanisms that underlie the apparent difference in therapeutic performance for the specific population. Although both treatment

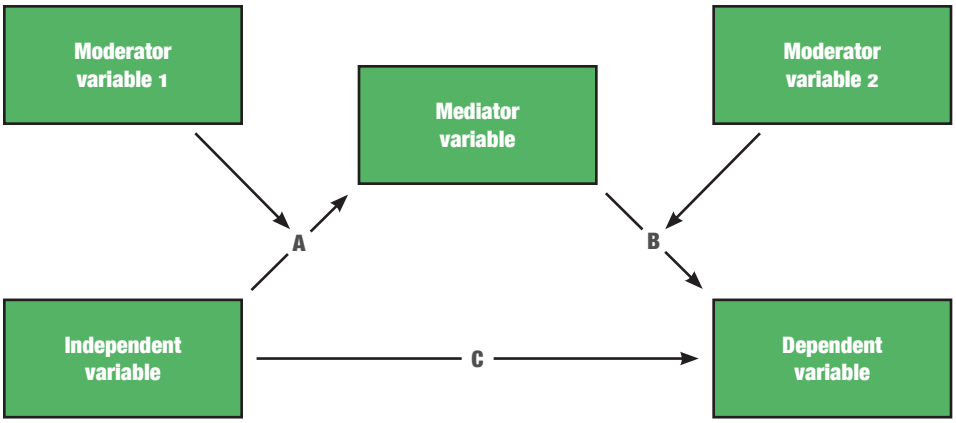

Figure 2. Integrated mediation model
Source: MacKinnon, Fairchild, & Fritz (2007)

approaches are framed on basic cognitive theory, the following core conceptual differences are expected to contribute in a lesser or greater extent to different therapeutic outcomes:

1. The classical CBT methodology approaches cognitions that underlie aberrant behavior as dysfunctional. Instead, MDT validates these cognitions as valid and reasonable expressions of core beliefs that originated from past distress and traumatic experiences.
2. CBT emphasizes behavioral change as the sole desired outcome in the treatment process without exploring underlying core beliefs and past experiences. MDT identifies core beliefs that ultimately relate to further distress and problem behavior with the objective to develop and consider more appropriate alternatives. Therefore the main objective of MDT is to redirect relevant core beliefs in order to positively affect thoughts, emotions, and behavior. The MDT rationale is that the approach creates less cognitive dissonance by addressing root causes with a more durable effect.
3. Classical CBT does not utilize mindfulness practices in therapy, whereas it is believed that MDT demonstrates the auxiliary value of mindfulness exercises in the ability to think, feel, and act without judgment of the self and others, improve emotion regulation, and explore core beliefs thoughtfully.
4. The Validation-Clarification-Redirecting (VCR) process is unique to the MDT methodology and is considered as an essential component of the efficacy of the therapy for adolescents with complex problems in an integrated social structure.

Therefore, as the differences between the two therapeutic approaches are far too distinct and multi-faceted, a component comparison would not be the most appropriate research approach. Also, an analysis of the VCR step as distinct mediating effect in MDT—as done in this study—could determine its value in the MDT process and influence on the therapy outcome, but not necessarily explain the apparent differences in efficiency between the CBT and MDT approaches. To achieve a deeper understanding of the mechanisms of MDT, a more comprehensive component analysis would be required; a study design that also isolates mindfulness to determine its discreet moderation effect on the family's core belief and ultimately behavioral changes. Hereby it is possible to better describe and qualify the causal pathways to treatment success by isolating and analyzing a more thorough range of intervening variables systematically (Hayes, 2009). This potential inherent structural design enhancement will be commented on in further detail in a later paragraph as an implication for further study.

Change and outcome measurements

By viewing the MDT methodology as the main independent variable that effects the treatment outcome—or dependent variable—the VCR step is acknowledged as an intermediate mediating component to achieve this change in a consecutive way. In this sense, the Compound Core Belief Questionnaire-Short Version (CCBQ-SV) has been applied as the quantitative assessment measure of VCR progress, with the Child Behavior Checklist (CBCL) and State-Trait Anger Expression Inventory-2 (STAXI-2) as measurement of behavioral outcomes.

Compound core belief questionnaire-short version (CCBQ-SV): The 96 self-report questions are scored on a 4-point Likert scale and is scored to identify and measure the strength of the underlying beliefs and thoughts of the adolescent, including beliefs that could be considered life-threatening or treatment-interfering (Apsche & DiMeo, 2012). The CCBQ-SV profile would initially be used in the case conceptualization to determine focus areas of the VCR process, but is also useful to monitor realignment of functional beliefs. The emergence of Functional Alternative Beliefs (FAB's) is the core outcome objective of the VCR step and is likely aligned with an improved change in behavior. The CCBQ form and scoring sheets are included in Appendices A through D. The CCBQ provides a quantitative measure of the client's maladaptive personality traits, of which the first eight scales are loosely based on the DSM personality disorder criteria. The last two scales present an indication of the treatment interfering and life threating (self and others) tendencies that are manifested. An easy visual representation of the CCBQ profile are created by plotting the results of the ten scales on a graph (refer to Appendix D).

Child behavior checklist (CBCL): The CBCL/6-18 is a parent-report questionnaire that consists of 118 statements about the child's behavior for which responses are score on a 3-point Likert scale. The eight syndrome scales—anxious/depressed, depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior—group into two higher order factors, namely internalizing and externalizing (Achenbach, 1991). The CBCL internalizing and externalizing scores are used as one MDT outcome measure as it relates to the nature of children's problems and how it is likely to translate into maladaptive functioning.

State-trait anger expression inventory-2 (STAXI-2): The STAXI-2 is a 44-item 4-point frequency scale questionnaire that distinguishes between three modes of anger expression: anger-out, anger-in and anger-control. Anger is a negative feeling state that is typically associated with hostile thoughts, physiological arousal and maladaptive behaviors as a response to a threat or perception of a threat. The MDT methodology utilizes the STAXI-2 test as it is useful to explore the ability of the adolescent to control or suppress excessive anger and his likely type of anger expression—inwards or outwards, as reactive and proactive aggression. According to Martin, Wan, David, Wegner, Olson, and Watson (1999), scores are also linked to emotional regulation and impulsivity, two important factors in dysfunctional behavior. As such, anger-in is associated with a general tendency to be emotionally inexpressive and linked to depression, whereas anger-out is more specifically related to the expression of angry emotions such as reactive aggression. It is also relevant to explore the anger-aggression relationship and underlying beliefs in the family context as experiences in the home such as parenting practices, child abuse and exposure to domestic violence are linked to aggression in children (Lochman, Powell, Clanton, & McElroy, 2006).

Previous comparative studies

Apsche, Bass & DiMeo (2011) published a meta-analysis by exploring the most recent research at the time on individual, family and replication studies. The results of that study suggest that both MDT and FMDT outperformed CBT and Treatment As Usual (TAU) in the following manner:

The 21 studies yielded a sample population of 573 male adolescents between the ages of 14 through 17. Participant characteristics included Axes I and II diagnoses, many with co-morbid presentation (see Table 1 on page 4). 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 para-suicidal. General participant recidivism was less than 7%, and sexual offense recidivism less than 4% after two years post MDT treatment.

It is evident from the target population profile in Table 1 that these adolescent males, aged between

Table 1. Meta-analysis participant demographic characteristics ($N = 573$)

Characteristics	%
Axis I	
Conduct disorder (CD)	51%
Oppositional defiant disorder (ODD)	42%
Posttraumatic stress disorder (PTSD)	54%
Other secondary	28%
Axis II beliefs	
Mixed	56%
Borderline personality	38%
Narcissistic personality	28%
Histrionic personality	2%
Dependent personality	30%
Antisocial personality	20%
Ethnicity/race	
African-American	52%
Caucasian	43%
Latin	4%
Other	1%
Ages	
14	10%
15	18%
16	42%
17	30%
Background	
Experienced abuse: sexual, physical, verbal and/or neglect	90%
Witnessed violence	56%
Parasuicidal	24%
Recidivism (two years post-treatment)	
General recidivism	< 7%
Sexual reoffending	< 4%

Source: Apsche, Bass, & DiMeo (2010)

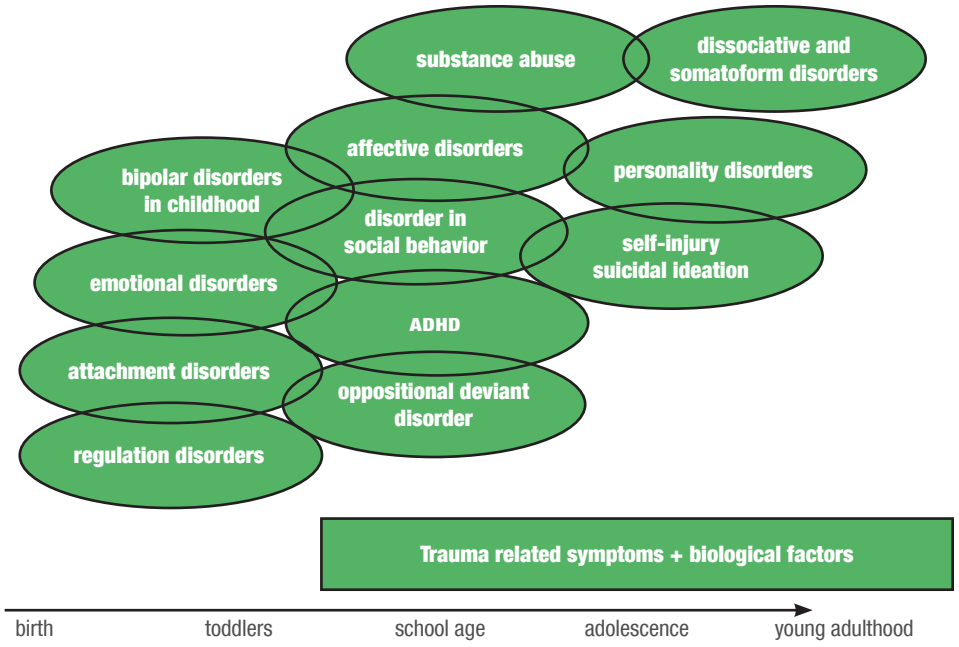

Figure 3. Developmental heterotopia of trauma
Source: Schmid, Petermann, and Fegert, 2013, p. 2

14 and 17 years, present behavioral problems as primary complaint with comorbid conditions of multiple personality disorders, anxiety, and depressive disorders preceded by a high incidence of trauma exposure—more than 90% of the participants have experienced some form of abuse and the majority (56%) have witnessed violent acts. As the participating youths have been mandated for residential treatment, it is important to recognize the unique characteristics that trauma exposure typically have on their response to treatment and the lack of empirical evidence thereof. Furthermore, their families or caregivers tend to engage in risk behaviors such as substance abuse and criminal behavior themselves, while many have a history of psychiatric problems and incarceration (Zelechoski, Sharma, Beserra, Miguel, DeMarco, & Spinazzola, 2013). As reflected in the participant sample profile, the typical youth in a residential treatment program has a unique and complex symptom presentation with disruptive behavior disorders, affective or anxiety disorders, accompanied by medical problems, somatic symptoms, PTSD, and substance abuse. Although multiple comorbid diagnoses are commonplace here, the MDT process is geared towards capturing and addressing the role of trauma in the full range of the youth's emotional and behavioral symptoms. As Van der Kolk (2005) observed: "Many problems of traumatized children can be understood as efforts to minimize objective threat and to regulate their emotional distress." (p. 403). This level of symptom complexity that is linked to childhood cumulative trauma and expressed as self-regulatory disturbances is commonly viewed as difficult-to-treat (Cloitre, Stolbach, Herman, Van der Kolk, Pynoos, Wang, & Petkova, 2009; Schmid, Petermann, & Fegert, 2013). However, this "developmental heterotopia of trauma" (p. 2)—as eloquently illustrated by Schmid and colleagues in Figure 3 above—is actively explored and managed in the MDT process by identifying, validating, and accepting the core beliefs that underlie and are reinforced by continued distress.

Youths in the participant sample are in the secondary school and adolescent age range, which is characterized by the widest range of trauma-related symptoms—including suicidality—and the onset of personality disorders that is more complex and mixed when associated with early trauma. As Widiger (2011) has shown, personality and psychopathology is interrelated, either influencing one another (pathoplastic relationship), sharing a common underlying etiology (spectrum relationships), or a composite of both mechanisms—the most common dynamic with complex developmental trauma. The approach of MDT for clients similar to the typical participant profile was developed by recognizing that "the more extensive the trauma exposure has been for the child, the greater and more complicated the residential treatment needs are." (Zelechoski, Sharma, Beserra, Miguel, DeMarco, & Spinazzola, 2013, p. 643). Therefore, the typical participant profile fits the study objective of determining the effectiveness of Mode Deactivation Therapy (MDT) for dealing with adolescents with complex trauma-related issues in a residential setting.

■ Results

A meta-analysis by Apsche, Bass, and Dimeo (2011) studied and combined the results of 21 individual MDT research studies with a total of 573 male adolescent participants to determine treatment effectiveness. The samples comprised of residential and out-patient settings, and individual and family sessions. A newer, separate study, which is the main focus of this report, was conducted with 84 male adolescent participants aged 15 to 17 years with the objective to compile a preliminary examination of the specific components of MDT and their effect on the therapeutic mechanisms.

Meta-analysis of a sample receiving individual MDT

The effect size results of the combined meta-analytic sample as reported in Table 2 on the next page are consistently meaningful as measured by Cohen's d effect size and in the context of the non-overlap between the research and control sample results. It is especially the expression of anger as incidents of physical or sexual aggression that MDT appears to influence in comparison to the CBT-based treatment-as-usual approach.

Cohen's *d* show large effect sizes with Sexual Offending (SO) Physical Aggression (1.85) and Conduct Disordered (CD) Physical Aggression (1.78). Total

Table 2. Individual therapy ($N = 573$)

Category-physical aggression	Cohen's Standard	*d*	*r*	% of non overlap
SO	Large	1.78	.664	47.4
CD	Large	1.85	.679	51.6
Total	Large	1.82	.669	75.4
Sexual aggression	Large	1.80	.669	71.9
CBCL	**Cohen's Standard**	***d***	***r***	**% of non overlap**
INT	Large	0.90	.410	68.1
EXT	Large	1.00	.447	73.1
Total	Large	0.95	.429	70.7
Conduct disorder-STAXI	**Cohen's Standard**	***d***	***r***	**% of non overlap**
CD anger con in	Large	1.10	.482	65.3
CD anger con out	Large	1.40	.573	62.2
CD anger ex	Large	1.80	.669	73.1
Sexual offending-STAXI	**Cohen's Standard**	***d***	***r***	**% of non overlap**
SO anger con in	Large	0.80	.371	73.1
SO anger con out	Large	0.90	.410	78.4
SO anger ex	Large	1.70	.648	78.0
JSOAP total	Large	1.55	.613	77.4

Physical Aggression and Sexual Aggression were also large at 1.82 and 1.80 respectively. Physical and sexual aggression were reported as the number of incidents during a certain period. Child Behavior Checklist (CBCL) scores were also large, yet somewhat smaller than the aggression effect sizes. CBCL scores measuring Internal states were 0.90 and External was 1.00. The total CBCL effect size was 0.95. The State-Trait Anger Expression Inventory-2 (STAXI-2) scores showed internal expressions of anger were not as controlled as external expressions of anger. With subjects who had the Conduct Disordered (CD) diagnosed delegation, STAXI-2 scores for inner control was 1.10. Conversely, the control for outward expression was 1.40. The total Anger Expressed effect size for this group was 1.80. STAXI-2 effect size scores for subjects who had offended sexually (SO) were slightly lower than those of the CD population. Inner control was 0.80. Outward expression of anger control was 0.90. The effect size for external aggression was slightly lower than the comparable result of the CD group at 1.70. Overall, incidents of aggressive behavior, and the expression of anger as measured by the STAXI-2 Anger Expression Index appear to be the most influenced by MDT compared to those of the TAU control group.

Meta-analysis of family-based MDT

As therapy in a family context is likely to be an important influencer of the efficacy and durability of treatment effects, studies done in this setting were separately examined in a second meta-analytic group. The effect sizes were also consistently large, with the exception of verbal aggression, which reconfirms the effectiveness of MDT with a male adolescent population compared to TAU control group outcomes.

Of the available studies, Cohen's *d* produced large effect sizes on all but one of the categories. The CBCL effect size for internalization was 1.40 whereas the externalization effect size was 1.60. The total effect size for CBCL was 1.50. STAXI-2 scores showed a 1.30 effect size for internal anger control, 1.20 for outward anger control, and 1.60 for overall anger expression. Physical expression of anger—as measured by the number of incidents of aggression for a specific period—was also large at 1.40, but the verbal expression of anger showed a medium effect size (0.70). Finally, related to physical aggression: Property aggression also showed a large effect size of 1.10. These results reconfirm the claim that MDT outperforms the CBT-based TAU approach consistently and significantly in the outcome areas as reflected by the selected evaluation measures.

The respective effect sizes in the individual and family MDT research study samples are compared in Table 4 above. Although a consistent outperformance of MDT over TAU is apparent in the large effect sizes, there is not clear difference visible at a first glance between outcomes in individual and family settings. This suggests that further exploration is required to determine whether participation of the family in the MDT process has an influence in the outcome strength compared to individual sessions only.

Although family therapy studies generally suggest that especially distressed families play a determining role in the psychological development of children, and that common sense would therefore follow that therapy as a family unit would produce the best results overall, this should be quantified in a component analysis. Thereby the unique role of the family and its interaction with therapeutic mechanisms can be better understood and the MDT methodology adapted to further improve treatment effectiveness.

Table 3. Family therapy ($N = 128$)

CBCL	Cohen's Standard	*d*	*r*	% of non overlap
INT	Large	1.40	.570	51.6
EXT	Large	1.60	.625	55.4
Total	Large	1.50	.600	53.5
STAXI	**Cohen's Standard**	***d***	***r***	**% of non overlap**
Anger con in	Large	1.30	.545	58.9
Anger con out	Large	1.20	.514	68.1
Anger ex	Large	1.60	.625	77.4
Behaviors	**Cohen's Standard**	***d***	***r***	**% of non overlap**
Physical aggression	Large	1.40	.513	61.1
Verbal aggression	Medium	0.70	.330	43.0
Property destruction	Large	1.10	.188	58.9

Table 4. Individual versus family MDT effect sizes

Measurement	*d* (individual)	*d* (family)
CBCL-INT	0.90	1.40
CBCL-EXT	1.00	1.60
CBCL-total	0.95	1.50
STAXI-anger con in	1.10	1.30
STAXI-anger con out	1.40	1.20
STAXI-anger expression	1.80	1.60
Physical aggression	1.82	1.40

FMDT mediation analysis

This supportive evidence sets the tone of the promise of MDT as a treatment for adolescents with trauma-based complex problems, which brings us to the essence of this paper. The main purpose of the current study was to examine the specific components of MDT, which we argue create more and deeper results of it being an effective treatment for anger and aggression in adolescent males. With the deeper examination of MDT we examined multi-factored specific therapeutic factors in a clinically representative sample of adolescents with combined Anxiety and Oppositional Defiant Disorder. A key component of MDT, the validation, clarification, and redirection (VCR) process, was a consistent factor in the treatment of anger and aggression. Evidence was found for mediation by the VCR component by using both the STAXI-2 and the Behavior Rating Scale (BRS) as anger and aggression outcome measures.

Participant characteristics and method. All participants were mandated for treatment and selected for the study group on a rolling basis as part of their intake into the functional treatment clinic. Inclusion criteria were aggression and behavioral problems, the presence and availability of a family or caregiver with whom the adolescent resided, aged 15 to 17 years, fluency in English, normal-range intelligence, and have no active psychotic symptoms. All participants agreed and signed informed consent forms. The adolescents were randomly assigned to the MDT experimental group or CBT-based Treatment-as-Usual (TAU) group, and the treatment fidelity of MDT and CBT was supervised by direct observation and checklists. Outcomes were measured by using the CBCL, STAXI-2, Behavior Rating Scale (BRS), and the Compound Core Beliefs Questionnaire (CCBQ) to assess scores before treatment commenced and after completion.

The typical participant profile is similar to previous MDT and FMDT studies (refer to Table 1). Most participants were diagnosed with Conduct Disorder (CD) (42%) or Oppositional Defiant Disorder (ODD) (44%), with Posttraumatic Stress Disorder (PTSD) (48%), Generalized Anxiety Disorder (GAD) (37%), and Major Depression (32%) also prominently represented. Almost all participants presented with a mixture of problems, which also included suicidality (38%), substance abuse (79%), and some form of aggression (>90%). It is very likely that the psychopathology is trauma- or attachment-related, as more than 90% of participants also experienced childhood abuse or neglect.

Table 5. Family study participant demographic characteristics ($N = 84$)

Characteristics	*N*
Axis I	
Conduct disorder (CD)	35
Oppositional defiant disorder (ODD)	37
Posttraumatic stress disorder (PTSD)	40
Anxiety	31
Major depression	27
Suicidal/parasuicidal	32
Ethnicity/race	
African-American	44
Caucasian	38
Latin	2
Ages	
15	37
16	38
17	9
Background	
All substance abuse	66
Alcohol	55
Drugs	60
Alcohol & drugs	55
Physical abuse	51
Sexual abuse	35
Neglect	68
Aggression	
Physical	52
Verbal	62
Sexual	12

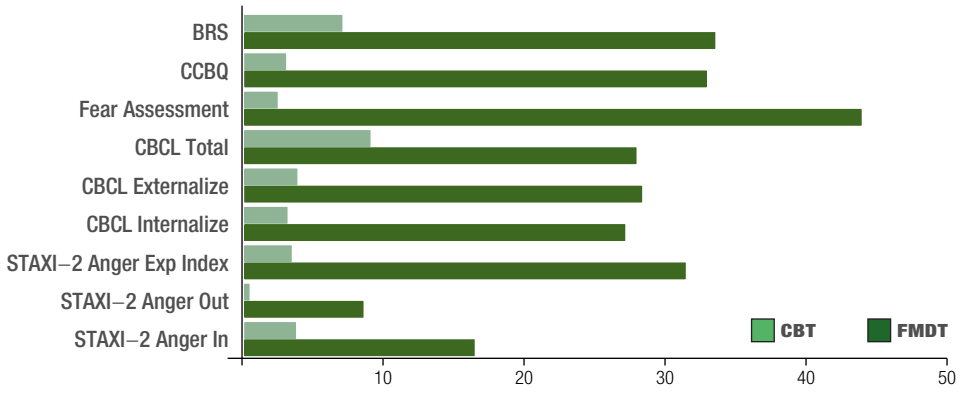

Figure 4. Differential results comparison

It is evident from the composite profile that these young participants have complex comorbid problems that are usually considered as difficult-to-treat with high relapse patterns. It is therefore considered necessary to work beyond dysfunctional behavioral expressions in a top-down approach in order to address underlying the mindset.

Results. Accounting for the change in the MDT scores, the effect of the MDT condition were reduced by almost half with the STAXI-2 Anger Expression Index from a mean difference of 31.4 versus 3.5 and with a new mean of 47.9 compared to 71.0 for the Behavior Rating Scale (BRS) Total. These reductions were significant for both the STAXI-2 and the BRS scores (Refer to Table 6 below).

All other measurement scores show similar improvement between intake and treatment completion for FMDT, with relatively insignificant improvement after CBT treatment (see Figure 4 above). The strengths of these comparisons and the apparent effectiveness of the FMDT treatment corroborates with the meta-analysis study results previously described, which adds to supporting evidence that MDT is an effective and superior treatment methodology for a challenging youth population.

As the Validation, Clarification, and Redirection (VCR) process step is a unique and fundamental component of the MDT theoretical framework and methodology, the hypothesis is that it acts as an important mediating component in the overall treatment process. VCR involves the development of functional alternative beliefs and its progress is measured with the CCBQ as previously explained. As expected, it appears from the results that both anger and aggression are indeed mediated by the VCR-Functional Alternative Beliefs (VCR-FAB). However, it needs to be noted that other mechanisms are also likely to play a role in the treatment process. As it was not the intention at the time, the current research design is not able to separate and determine the individual effects of these components, which may include elements not unique to MDT such as intent-to-treat effects, therapeutic alliance, client affect, mindfulness practice, and diagnostic accuracy. Future work involving additional and progressive intermediate temporal measurements through the treatment duration is expected to add much value to a deeper understanding of the mechanisms of MDT, and when and how the process is as effective as already demonstrated.

Table 6. Mediation group results at intake and post-treatment

			Intake				Post-treatment				Differential			
			FMDT		CBT		FMDT		CBT		FMDT		CBT	
Variable	**Items**	***a***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
STAXI-2	44													
Anger in		0.87	47.5	6.7	48.1	13.7	30.1	6.1	44.3	9.8	16.4	3.5	3.8	11.8
Anger out		0.92	49.3	8.2	48.6	12.2	30.7	7.1	48.1	10.7	8.6	7.1	0.4	12.7
Anger exp index		0.90	51.1	10.2	49.7	10.9	29.8	5.5	46.2	12.4	31.4	15.2	3.5	16.9
CBCL	96													
Internalize		0.92	75.6	7.8	74.2	8.7	48.2	8.3	70.4	10.3	27.1	8.1	3.2	4.4
Externalize		0.91	75.9	10.5	75.4	11.2	47.6	5.1	71.6	11.6	28.3	21.1	3.8	12.1
Total		0.90	75.8	12.1	75.1	10.3	47.9	6.2	71.0	12.3	27.9	6.3	9.0	12.1
Fear ass.	60	0.91	154.0	12.7	150.0	13.2	110.2	3.1	143.5	10.2	43.9	8.2	2.5	28.0
FCCBQ	96	0.93	137.9	36.0	135.3	32.2	104.8	3.3	131.3	27.1	32.9	12.3	3.1	6.1
BRS	2	0.88	36.2	11.8	38.1	12.3	2.7	3.5	36.2	11.1	33.5	6.2	7.1	7.2

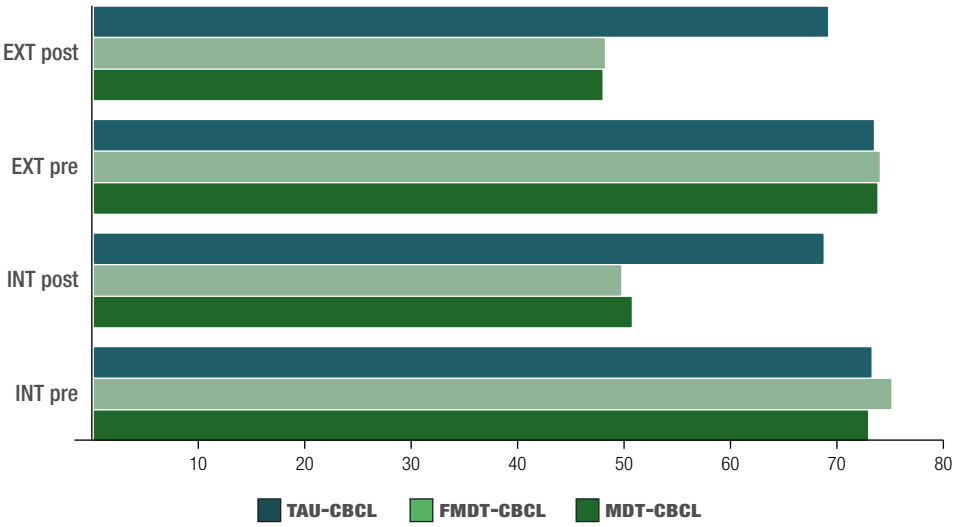

Figure 5. Comparison of CBL-scores with MDT, FMDT, and TAU

Nevertheless, these preliminary results already suggest that VCR has an important mediating effect on the treatment outcome. The reduction of the dysfunctional personality beliefs by the MDT group is significant in that it suggests that there is an association between these beliefs and the ability to control and avoid expression of anger and aggression. By measuring the MDT outcomes and the Compound Core Belief Questionnaire-Short Version (CCBQ-SV) slope, the measures that would be important for the replication of future research in MDT can be determined. As previously explained, our current research study was not designed to detect interior changes or reflect specific effects of anger or aggression such as internalizing issues measured by the CBCL throughout the treatment protocol. Such a research design, as proposed by Hollon, DeRubeis, and Evans (1987), will be able to produce cognitive and symptom change slopes during therapy, which is imperative to understand the different components and their effects and interactions during the therapy process. Therefore, in future studies, we recommend measuring mediation for anger and aggression outcomes repeatedly across time to provide for the generation of growth curves, which then could be compared and analyzed with each other within a model, similar to the approach adopted by Henggeler, Letourneau, Chapman, Borduin, Schewe, and McCart (2010), or compare the results in a latent mediation growth model (Cole & Maxwell, 2003; Selig & Preacher, 2009). However, preliminary indications showed statistical promise with $\beta = .71$, and $p < .001$, which indicate that these core beliefs—through the VCR component—have a strong relationship with anger and aggression outcomes and therefore mediate the MDT process in a statistically significant way. We also found that the externalizing score on the CBCL has a direct relationship to the mediator and also relates to the STAXI-2 anger out scores with an effect size of 1.73 ($p < .001$).

Therefore, as a process step that is unique to the MDT methodology, VCR contributes to the success of the MDT outcomes as measured by behavioral change. However, the question of how and when this change occurs, as well as the effect of other possible mediators and moderators, remains and provides scope for a more comprehensive session-by-session component analysis. Even so, the present study has several strengths. First, MDT was shown to reduce symptoms of aggression through changes in, or redirection of, maladaptive personality beliefs. This finding further strengthens the empirical validation of MDT as a treatment for these disruptive behaviors and their underlying belief and thought systems. It also implicitly suggests that these personality beliefs are indeed involved in the activation and expression of anger and aggression in adolescents, which is a central building block in the theoretical and conceptual framework of MDT as a contextual therapy approach. Furthermore, personality beliefs are not only underlying aberrant behavior, but the specific validation approach of the VCR element in MDT enables the development of functional alternative beliefs, which in turn causes positive changes in behavior, thereby creating an effective mediating effect.

The family as moderator in MDT

Another question, which has been briefly raised previously, is whether the participation of the family acts as a moderator in the MDT treatment process. It is very likely that the influence of the family unit interactions and their collective belief system impacts on the MDT-FAB pathway, either attenuating or strengthening the VCR effect depending on the orientation of the family. By comparing aggregated CBCL scores reported in previous MDT studies, a preliminary comparison between MDT (individual therapy), FMDT (family-based MDT), and TAU protocol is possible. As illustrated in Figure 5 above there is a discernable difference in CBCL scores when the MDT groups are compared to TAU results, but no statistically meaningful difference when individual MDT is compared to FMDT.

Although the results appears to be contrary to common sense expectations, the impression is shared by other studies, including research by Barkley, Guevremont, Anastapoulos, and Fletcher (1992) for ADHD, and Bent, Holder, Kolko, Birmaher, Baugher, Roth, Iyengar, and Johnson (1997) for Depressive Disorder. However, more recent studies contradicted these older studies by indicating the superiority of family-based treatment compared to individual therapy for specific adolescent populations and conditions such as depressive symptoms (Diamond, Wintersteen, Brown, Diamond, Gallop, Shelef, & Levy, 2010), and anorexia nervosa (Lock, Le Grange, Agras, Moye, Bryson, & Jo, 2010). One reason for the discrepancy—as pointed out by Kaufman and Yoshioka (2005)—is the relatively limited availability of studies of the effectiveness of family therapy as opportunities are limited and research complex and costly.

As such, it is a further objective and this and subsequent family-based MDT studies to contribute to the emerging evidence base of family therapy as an effective treatment modality for addressing adolescent behavioral disorders. However, as this absence of a quantifiable distinction in the outcome

Activity	Plan start	Plan duration	Actual start	Actual duration	Percent complete	Periods 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Assessments	1	4	1	4	100%	22%																		
Case conceptualization	5	3	5	3	100%					17%														
Mindfulness	8	11	8	11	100%								61%											
COBB	9	1	9	1	100%									17%										
VCR	10	7	10	7	100%										39%									
Reinforce & wrap-up	17	2	17	2	100%																	11%		

Figure 6. MDT session structure

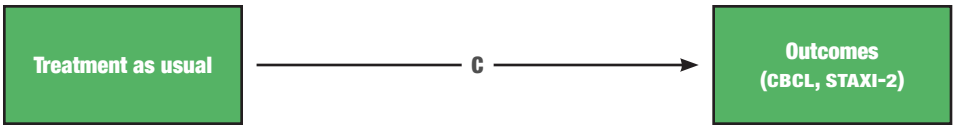

Figure 7. CBT process without moderator

between MDT and FMDT as measured by CBCL raises the question whether participation by the family in therapy is sufficiently effective to offset additional cost and complexity, further work is required. This is not a straightforward issue as it appears on the surface. According to Walsh (2003), there is also a paucity of studies examining separate process variables. Therefore it is necessary to disentangle and study the effect of other variables such as therapist-adolescent-family interaction in session, collective family values, intra-family dynamics and its possible influence on the reliability of outcome measures such as the CBCL as a self-report measure.

■ Discussion

If both MDT and Treatment As Usual (TAU) were equally effective in reducing anger and aggression, the first step of the mediation goal would have been the overall treatment method and the analysis would have stopped there. Therefore, it was by using a treatment control in the first place that we are able to establish the need and justify our examination of the mediated effects of MDT. Because TAU was utilized as the control, the results of this study supports our contention that MDT has an impact on anger and aggression through mechanisms that are likely specific to MDT treatment, as opposed to non-specific factors affecting treatment. It is important to note at this time that there are two key practical differences between MDT and classical CBT, namely the Validation-Clarification-Redirection (VCR) process step and the practice of mindfulness. The first—unique to the MDT methodology—is explored together with the family for over 39% of the typical treatment duration, while the latter is introduced after the assessment and case conceptualization stages and continues until treatment completion (61%). Refer to Figure 6 on page 7 for the typical basic MDT session structure and course.

Randomized controlled trials—as have been done in this study—is particularly useful to evaluate the effects of treatment relating to both the efficacy and effectiveness of therapy in a particular setting and population. Efficacy testing determine whether an intervention produces the desired results compared to a control, whereas efficacy estimates the degree of beneficial effect within the experimental group (Gartlehner, Hansen, & Nissman, 2006). Therefore, another strength is that this study reports on aspects of both efficacy and effectiveness research with a robust clinically representative population sample (Nathan, 2004; Nathan, Stuart, & Dolan, 2000; Kaufman, Rohde, Seeley, Clarke, & Stice, 2005). Because of this, the sample can potentially enhance the external validity of this study in terms of generalizability. Also important is the clarity and integrity of the MDT and CBT group methodology and well-defined measures of mediation and outcomes, which afford the opportunity for independent replication.

However, there are also several limitations of this study that must be noted. First, the study was completed by the founder of MDT and his research team. This is important to note because the first author has a vested interest in the success of the study, which can therefore not be considered as independent research. However, all the guidelines of therapy practices, mediation analysis, and multiple regression research were followed in an objective, transparent, and ethical manner to the best of our abilities. The second drawback is that the mediators were measured only at intake and post-treatment, simultaneous to the measurements of anger and aggression outcome. Thus, there might have been increases, decreases, or fluctuations of the measures in the interim that would be important for replication of future research in MDT, as well as to better understand when and how different elements contribute to the therapeutic changes.

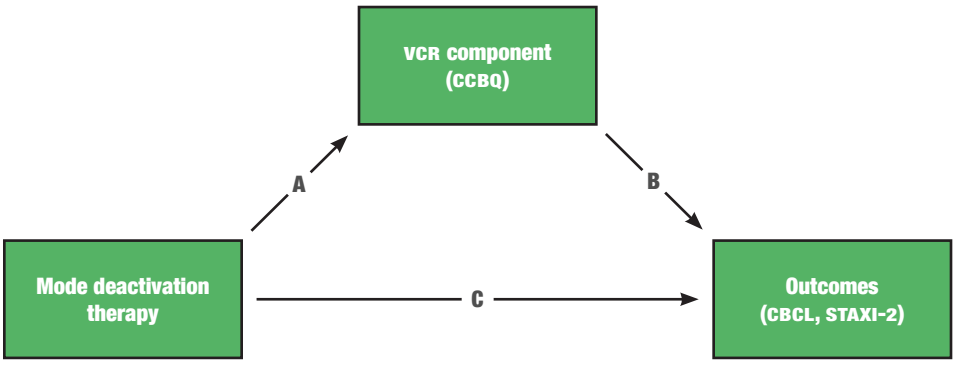

Figure 8. MDT process with VCR as mediator

Although definitely contributing to the overall understanding of the MDT process and its effectiveness, we are of the opinion that the two MDT mediation studies to date, namely Apsche, Bass, and Backlund (2012), and Bass and Apsche (2013), and including the current design and data set, is not truly (in a strict technical sense) mediation analyses. Their research designs are based on Figures 7 and 8, and therefore really resemble a straight comparison between the outcomes of MDT and classical CBT rather than an analysis of mediator(s)/moderator(s); as does the previous 20 or more MDT/FMDT research studies as well.

However, preliminary evidence is produced that proves that there is indeed some correlation between VCR as determined by CCBQ and behavioral outcomes (B/O measured by CBCL and STAXI-2). We further believe that the issue is that VCR is not so much a component of MDT that can be disentangled as it is the core of the approach. Furthermore, it is not the only element that distinguishes classical CBT from MDT—therefore its isolated effect cannot be examined by a straight comparison between MDT and CBT, but that a more comprehensive component analysis is required to understand the temporal and strength effects of different treatment components.

Apart from the different philosophy between MDT and CBT in acknowledging and validating the role of core beliefs in behavior, we also propose that the mindfulness component be similarly applied to both the experimental and control group (Mindfulness-based CBT/MBCT instead of classical CBT); to better isolate the VCR methodology in future studies. With the present evidence, it is our best interpretation that the mediation process in Figure 9 may best chronicle the MDT distinctive process, with VCR driving behavioral outcomes through FAB/CCBQ, but with the mindfulness component that impacts as moderator on the CCBQ → Behavior process flow. Hereby we suggest that mindfulness techniques mostly operate in the beliefs → thoughts → emotions → behavior paradigm of the MDT treatment framework.

Similarly—and as previously mentioned—the family aspect is also likely to exert a moderating influence, but on pathway A instead (refer again to Figure 9 on the next page). Therefore, in our best judgment based on existing evidence and observation, the influence of family system interactions in treatment likely has an effect on the existence and maintenance of belief systems, both in functionality and tenacity. On the other hand, the behavioral expression of core beliefs through intermediate thoughts, feelings, and emotions can be moderated by a keen observation and awareness of the self and environment in the present moment. For this reason, mindfulness training is expected to act as a moderator on pathway B above by influencing behavioral expression through a recognition of triggers and emotion regulation by a nonjudgmental process of acceptance.

■ Conclusions and future implications

Everything considered, Family-based Mode Deactivation Therapy (FMDT) continues to show great promise as an effective treatment for adolescents with trauma-related problems, disruptive behavior, and complex comorbid presentations. Both the

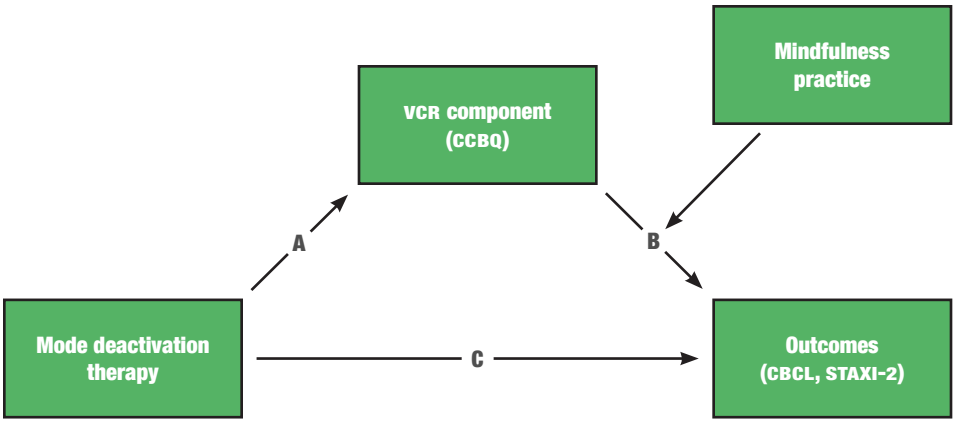

Figure 9. MDT process with mediator and moderator

post-treatment outcomes and durability of change at follow-up with MDT groups are very positive when compared to a classical CBT-based "treatment-as-usual" (TAU) control group. The basic preliminary mediation study demonstrated that the Validation-Clarification-Redirection (VCR) process step that is unique to the MDT methodology and theoretical approach is statistically correlated with the behavioral outcomes as measured by CBCL and STAXI-2. However, to qualify as a *bona fide* mediator in the therapy process, changes brought on by the VCR component have to precede changes in outcome measurements, a fact that could not be established with the current research design. Furthermore, other elements of the MDT process, some of which are shared by other psychotherapy practices, are also likely to influence the course of therapeutic change. In the case of FMDT, the two most likely elements to interact with the process pathways are the family participation and mindfulness training components. As explained previously, it is likely that both of these act as moderators with effects on the core belief system and the expression of responses arising from the core beliefs respectively. In order to move forward with the validation of FMDT as an effective treatment for the particular population, and facilitate a deeper understanding of the treatment change process components and their interrelated effects, the following research design elements are proposed for future study within a fair-sized group representative of the target adolescent profile.

1. Measurement of behavioral aspects with CBCL and STAXI-2, as has become the established norm in MDT research.
2. Measurement of core beliefs and functional alternative beliefs with the CCBQ, which determines the level of dysfunctional personality traits that are present (refer to Appendices A through D below).
3. Assessment of the four construct scales of mindfulness with the Kentucky Inventory of Mindfulness Skills (KIMS), or a similar instrument.
4. Completion of all the measurements by all participants at pre-treatment (before session 1), after initial evaluations but before introduction of mindfulness (between sessions 5 and 7), after completion of VCR (before session 17), and at post-treatment (after session 18). It should be possible to separate the effects of different therapy components by using these five different temporal intervals. Session numbers are as per the typical schedule (refer to Figure 6 on page 7).
5. Preferably, the measurements must also be repeated at a follow-up period of at least 18 months. Hereby the durability of components can by deduced by their respective maintenance or relapse.

These data sets are expected to provide the research team with adequate scores to conduct a meaningful component analysis with VCR as a possible mediator and mindfulness as a possible moderator. The process can also be replicated with a control group only receiving individual MDT sessions, whereby the effect of family participation can be explored. Any difference at the follow-up period may be especially meaningful as it is expected to reflect the positive and more lasting effect of MDT therapy collectively, with the family present. Ultimately, family-based MDT continues to offer great promise for a challenging but important population, and a deeper understanding of the therapeutic mechanism could facilitate even stronger improvements.

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■ Appendix A

COMPOUND CORE BELIEFS: SHORT VERSION (CCBQ-SV)

Name _____ Date _____

Please read the statements below and circle HOW OFTEN YOU ENDORSE EACH ONE.

		Never	Sometimes	Almost Always	Always
1.	Everyone betrays my trust. I cannot trust anyone. (III) (TI)	1	2	3	4
2.	If I am not loved, I am unhappy. (V)	1	2	3	4
3.	I am so exciting, others always want to be with me. (VI)	1	2	3	4
4.	I cannot trust others, they will hurt me. (X) (TI)	1	2	3	4
5.	If I trust someone today, they will betray me later. (III)	1	2	3	4
6.	I am only fulfilled by being with a strong person. (V)	1	2	3	4
7.	Others are critical, thereby they will reject me. (II)	1	2	3	4
8.	There is no problem if others know I did something. (I)	1	2	3	4
9.	Other people have hidden motives and want something from me. (X)	1	2	3	4
10.	Whenever I hope, I will become disappointed. (III)	1	2	3	4
11.	Others make better decisions than I; I cannot make up my mind. (V)	1	2	3	4
12.	When I feel, it may be unpleasant. (II) (LT)	1	2	3	4
13.	Unless you have a videotape of me, you cannot prove I did it. (I) (TI)	1	2	3	4
14.	If you criticize me, you are against me. (VII)	1	2	3	4
15.	If I don't make myself known, others will not know how special I am. (VI)	1	2	3	4
16.	Things never work out for me; I never get a break. (XI)	1	2	3	4
17.	If I am not on guard, others will take advantage of me. (X) (TI)	1	2	3	4
18.	I am so brilliant and special, only a "gifted" few understands me. (VII)	1	2	3	4
19.	When I am bored, I need to become the center of attention. (VI)	1	2	3	4
20.	If I give others the chance, they will hurt me. (X)	1	2	3	4

		Never	Sometimes	Almost Always	Always
21.	When I am angry, my emotions are extreme and out of control. (III) (LT)	1	2	3	4
22.	Others are stronger and I need them to cope. (V)	1	2	3	4
23.	I am inadequate; I will do whatever I must to hide it. (II) (TI)	1	2	3	4
24.	My "inner feelings" and intuition are all I need; rational thinking doesn't help. (VI) (TI)	1	2	3	4
25.	When I get angry, my emotions go from annoyed to furious. (III)	1	2	3	4
26.	If I am afraid something will be unpleasant, I will avoid it. (II)	1	2	3	4
27.	Others are unreliable, will let me down, or reject me. I need to protect myself. (III)	1	2	3	4
28.	When others are paying attention to me, I am never bored. (VI)	1	2	3	4
29.	Others may demand, but I do things my way. (XI)	1	2	3	4
30.	If I let others know me, they will take advantage and hurt me. (X) (TI)	1	2	3	4
31.	When I hurt emotionally, I do whatever it takes to feel better. (III) (LT)	1	2	3	4
32.	Anything is better than feeling unpleasant. (II) (LT)	1	2	3	4
33.	If I act silly and entertain people, they won't notice my weaknesses. (VI)	1	2	3	4
34.	If I let others know information about me, they will use it against me. (X)	1	2	3	4
35.	If others notice me, they will see my inadequacies. (II)	1	2	3	4
36.	People tell me or say things to me, and mean something else. (X)	1	2	3	4
37.	Life at times feels like an endless series of disappointments followed by pain. (III)	1	2	3	4
38.	If I feel bad, I can't control it. (II) (LT)	1	2	3	4
39.	I can do what I want; consequences don't affect me directly unless I am caught. (I) (TI)	1	2	3	4
40.	Consequences only matter when I am caught. They are for others. (I)	1	2	3	4
41.	If others think they can get away with taking advantage of me, they will use me and information about me. (X) (TI)	1	2	3	4
42.	If I don't take what I want, I won't get what I need, and I deserve it. (I)	1	2	3	4
43.	I try to control and not to show my grieving, loss, sadness, but eventually it comes out in a rush of emotions. (III) (LT)	1	2	3	4
44.	If I don't think about or deal with a problem, it is not real. (II)	1	2	3	4
45.	People are not worth being around if they criticize me. (II)	1	2	3	4
46.	My feelings about myself are so poor that I will do whatever I need to do to compensate for this. (III)	1	2	3	4
47.	Whenever I try to feel better, I will make things worse and feel more pain eventually. (III)	1	2	3	4
48.	If they ask me to do something I don't want to do, I'll pay them back. (XI)	1	2	3	4
49.	I do it because I can; I deserve to get what I want. (I)	1	2	3	4
50.	Whenever I need someone they are not there for me; there is no one I can count on. (III)	1	2	3	4
51.	Rules are for others. (VII)	1	2	3	4
52.	If people don't respond positively to me, they are not important. (VI)	1	2	3	4
53.	I need to avoid situations in which I am the center of attention; I should be behind the scenes. (II)	1	2	3	4
54.	I don't have to follow the rules for other people. (VII)	1	2	3	4
55.	It's OK to do what I do as long as I get away with it. (I)	1	2	3	4
56.	I would rather not try something new than fail at something. (II) (TI)	1	2	3	4
57.	I have every reason to expect wonderful things for myself since I am so special. (VII)	1	2	3	4
58.	I've been treated badly, so whatever I need to do to get what I need is OK. (I) (TI)	1	2	3	4
59.	My "gut" feelings tell me what I need to do; that is more important than thinking through problems. (VI)	1	2	3	4
60.	I never make decisions on my own; I always need support. (V)	1	2	3	4
61.	Unpleasant feelings usually escalate and then get out of control…and get worse. (II) (LT)	1	2	3	4
62.	My needs are more important, and others' needs shouldn't interfere. (VII)	1	2	3	4
63.	I will con people to get whatever I need; it's not a problem. (I)	1	2	3	4
64.	Since I am so talented and gifted, others should promote (help) me get what I want. (VII)	1	2	3	4
65.	Others should not criticize me; if they do, it's because they usually can't understand me. (VII)	1	2	3	4
66.	If people don't care for themselves, whatever happens to them is their problem. (I) (TI)	1	2	3	4

		Never	Sometimes	Almost Always	Always
67.	Circumstances dictate how I feel and behave. (VI)	1	2	3	4
68.	When I am abandoned, I feel like life is over. (V)	1	2	3	4
69.	If people do not show me respect and give me what I am entitled to, it is intolerable for me. (VII)	1	2	3	4
70.	Most of my relationships with people are extremely intimate, because people love to be around me or with me. (VI)	1	2	3	4
71.	I am happiest when people pay attention to me. (VI)	1	2	3	4
72.	I cannot handle my life without support. (V)	1	2	3	4
73.	I am needy and weak inside, no matter what others see. (V) (LT)	1	2	3	4
74.	I tell a girl or boy anything I need to get sex, or what I want. (I) (TI)	1	2	3	4
75.	I must be subservient to all in authority; I cannot make it on my own. (V)	1	2	3	4
76.	I don't need to work to achieve; things should come my way because I deserve it. (VII)	1	2	3	4
77.	Whenever I end a relationship, I immediately find a new one. (V)	1	2	3	4
78.	Most people are not as gifted as I am, and my behavior lets them know it. (VII)	1	2	3	4
79.	Whenever I am not getting attention, I am bored. (VI)	1	2	3	4
80.	Being alone is terrible. (V) (LT)	1	2	3	4
81.	If I don't "take care" of tem first, then they will get me. (I)	1	2	3	4
82.	I cannot cope like others; I need support. (V)	1	2	3	4
83.	Others' feelings are not as important as achieving a goal for myself. (VII)	1	2	3	4
84.	If other people get any information on me, they will use it against me. (X) (TI)	1	2	3	4
85.	Other people expect too much from me. (XI) (TI)	1	2	3	4
86.	If others are too bossy or demanding, I don't have to follow them. (XI)	1	2	3	4
87.	Authority figures tend to be controlling or demanding and act like they are in control. (XI) (TI)	1	2	3	4
88.	Others always have hidden motives and I cannot really trust anyone. (X)	1	2	3	4
89.	If I don't want to do something, my mood changes and I withdraw emotionally. (XI)	1	2	3	4
90.	If I let others know "who I am", they'll know my weaknesses and use them against me. (X)	1	2	3	4
91.	I never like to show my anger directly, but others know when I am angry. (XI) (TI)	1	2	3	4
92.	Others should not tell me what to do; I will eventually do what I want to do anyway. (XI)	1	2	3	4
93.	I have to keep myself from being dominated by authority figures, while gaining their acceptance and approval. (XI)	1	2	3	4
94.	Others often attempt to get one over on me by exploiting or harming me in some way. (X)	1	2	3	4
95.	I really am self-sufficient, but I often need others' help to reach my goals. (XI)	1	2	3	4
96.	Authority figures usually stifle my creativity and prevent my progress toward goals. (XI)	1	2	3	4

Appendix B

CCBQ-SV SCORE SHEET

Circle all beliefs endorsed as "always" or "4":

I 8, 13, 39, 40, 42, 49, 55, 58, 63, 66, 74, 81	**II** 7, 12, 23, 26, 32, 35, 38, 44, 45, 53, 56, 61	**III** 1, 5, 10, 21, 25, 27, 31, 37, 43, 46, 47, 50
IV 2, 6, 11, 22, 60, 68, 72, 73, 75, 77, 80, 82	**V** 3, 15, 19, 24, 28, 33, 52, 59, 67, 70, 71, 79	**VI** 14, 18, 51, 54, 57, 62, 64, 65, 69, 76, 78, 83
VII 4, 9, 17, 20, 30, 34, 36, 41, 84, 88, 90, 94	**VIII** 16, 29, 48, 85, 86, 87, 89, 91, 92, 93, 95, 96	

Circle all beliefs endorsed as "almost always" or "3":

I 8, 13, 39, 40, 42, 49, 55, 58, 63, 66, 74, 81	**II** 7, 12, 23, 26, 32, 35, 38, 44, 45, 53, 56, 61	**III** 1, 5, 10, 21, 25, 27, 31, 37, 43, 46, 47, 50
IV 2, 6, 11, 22, 60, 68, 72, 73, 75, 77, 80, 82	**V** 3, 15, 19, 24, 28, 33, 52, 59, 67, 70, 71, 79	**VI** 14, 18, 51, 54, 57, 62, 64, 65, 69, 76, 78, 83
VII 4, 9, 17, 20, 30, 34, 36, 41, 84, 88, 90, 94	**VIII** 16, 29, 48, 85, 86, 87, 89, 91, 92, 93, 95, 96	

Circle all beliefs endorsed as "sometimes" or "2":

I 8, 13, 39, 40, 42, 49, 55, 58, 63, 66, 74, 81	**II** 7, 12, 23, 26, 32, 35, 38, 44, 45, 53, 56, 61	**III** 1, 5, 10, 21, 25, 27, 31, 37, 43, 46, 47, 50
IV 2, 6, 11, 22, 60, 68, 72, 73, 75, 77, 80, 82	**V** 3, 15, 19, 24, 28, 33, 52, 59, 67, 70, 71, 79	**VI** 14, 18, 51, 54, 57, 62, 64, 65, 69, 76, 78, 83
VII 4, 9, 17, 20, 30, 34, 36, 41, 84, 88, 90, 94	**VIII** 16, 29, 48, 85, 86, 87, 89, 91, 92, 93, 95, 96	

Circle all beliefs as endorsed on the CCBQ-SV:

Endorsement of Beliefs	Life-Threatening (LT)	Treatment-Interfering (TI)
Endorsed as "always" or "4"	**IX** 12, 21, 31, 32, 38, 43, 61, 73, 80	**X** 1, 4, 13, 17, 23, 24, 30, 39, 41, 56, 58, 66, 74, 84, 85, 87, 91
Endorsed as "almost always" or "3"	**IX** 12, 21, 31, 32, 38, 43, 61, 73, 80	**X** 1, 4, 13, 17, 23, 24, 30, 39, 41, 56, 58, 66, 74, 84, 85, 87, 91
Endorsed as "sometimes" or "2"	**IX** 12, 21, 31, 32, 38, 43, 61, 73, 80	**X** 1, 4, 13, 17, 23, 24, 30, 39, 41, 56, 58, 66, 74, 84, 85, 87, 91

■ Appendix c

PROFILE SCORES: CCBQ-SV

Client Name: _____ Date: _____

Therapist Name: _____

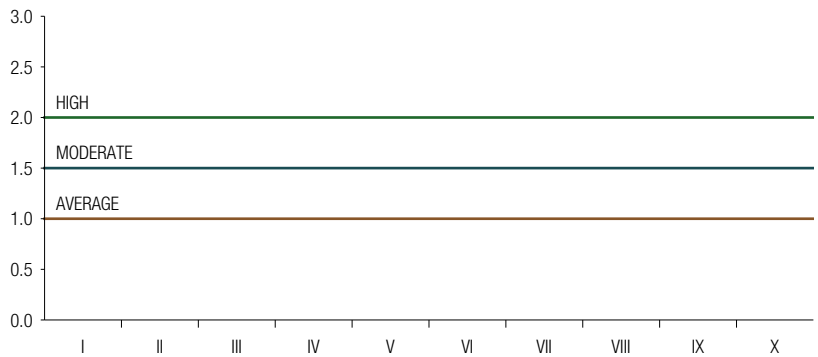
	Personality traits	# of 4's endorsed	# of 3's endorsed	# of 2's endorsed	Total	Score
I	Antisocial Personality Traits	× 3	× 2	× 1	/12	
II	Avoidant Personality Traits	× 3	× 2	× 1	/12	
III	Borderline Personality Traits	× 3	× 2	× 1	/12	
IV	Dependent Personality Traits	× 3	× 2	× 1	/12	
V	Histrionic Personality Disorder	× 3	× 2	× 1	/12	
VI	Narcissistic Personality Traits	× 3	× 2	× 1	/12	
VII	Paranoid Personality Traits	× 3	× 2	× 1	/12	
VIII	Passive Aggressive Personality Traits	× 3	× 2	× 1	/12	
IX	Life Threatening Beliefs	× 3	× 2	× 1	/9	
X	Treatment Interfering Beliefs	× 3	× 2	× 1	/17	

■ Appendix d

PROFILE CHART: CCBQ-SV

Client Name: _____ Date: _____

Therapist Name: _____



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Family mode deactivation therapy (FMDT): A randomized controlled trial for adolescents with complex issues

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Abstract

There is an unquestionable need for psychotherapy interventions to effectively treat adolescents with aberrant behaviors, complex comorbid problems, and a history of abuse—a population that is widely considered as difficult-to-treat, but warranting attention due to their cost to society. In response, Family Mode Deactivation Therapy (FMDT) was developed with its roots in cognitive and behavior theories. By recognizing the need to explore and validate core beliefs in the family unit that underlie individual and collective dysfunctional cognitions, a unique Validation-Clarification-Redirection (VCR) process was combined with selected elements from Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and mindfulness. In this study 122 adolescents and their families were randomly divided into two groups, a control group treated with classical Cognitive Behavioral Therapy (CBT) techniques, and the experimental group treated with FMDT methodology. Child Behavior Checklist (CBCL) and State-Trait Anger Expression Inventory-2 (STAXI-2) tests were scored pre- and post-treatment. The average CBCL and STAXI-2 scores indicated a consistently significant improvement with FMDT treatment, which outperformed that of the control group noticeably. Incidents of physical aggression were also tracked pre-, post-treatment, and at 16-month follow-up. Again, FMDT outperformed the Treatment as Usual (TAU) control group, especially at follow-up, which suggests a much better durability of treatment effects in the time period. The positive results with this population in their family group warrant further research of FMDT.

Keywords

Mode Deactivation Therapy, MDT, mindfulness, ACT, DBT, CBT, adolescent, schema, family therapy, FMDT, conduct disorder, oppositional defiant disorder

The family environment is the most violent setting in our society outside of policing and military associations (Daly & Wilson, 1997). While it is true that many twin and adoption studies found that there is a heritable variation in humans that partly explain a predisposition for violence and criminal behavior, there is also a general agreement that many great variations in levels of aggression cannot be explained by genetic makeup—the most dramatic being "swift changes in the level of violence within single societies" (Takala, 2010, p. 27) and its smaller units—families. It is estimated that 3 million children witness domestic violence annually (Sousa, Herrenkohl, Moylan, Tajima, Klika, Herrenkohl, & Russo, 2011), resulting in one in four children developing Posttraumatic Stress Disorder (PTSD) by the time they reach 16 years of age (Bernardon & Pernice-Duca, 2010). PTSD develops in childhood during attachment periods and has profound influences on families' emotional context. Symptoms can occur at any age and are usually distinguished in comorbidities such as depression, anxiety, and substance abuse. The trauma need not happen directly to the child, but the genetic predisposition can be passed from a parent who is suffering their own mental issues, and the child's vulnerability is often further exacerbated in a shared conducive environment (Stein, Jang, Taylor, Vernon, & Livesley, 2002; Yehuda, Halligan, & Bierer, 2001). PTSD is simply living and coping within an environment that has real or perceived threats to the individual. Exposure can produce disorganized or agitated behavior, intense fear, helplessness and horror (Bernardon & Pernice-Duca, 2010). The fact that adolescents with disruptive behavior, complex comorbid problems, and personality disorder traits are deemed as difficult to treat, and often perpetuate the cycle of violence in their own lives, underline the dire need for effective mental health treatment within distressed families.

Literature review

The family structure has been studied intensively and is directly responsible for our children's emotional, mental and behavioral health. Jean Piaget termed his study cognitive development, Kohlberg researched moral development, and Erickson focused on psychosocial development (Barnes, Plotnikoff, Fox, & Pendleton, 2000); they all centered on the first social environment a child encounters—their family. The family defines individual roles and social expectations (Peterson & Green, 2009). The child relies on the family unit to appraise any traumatic events and put them in perspective. All things normal and maladaptive start within the home. A child's misbehavior is a symptom of the family environment and must be treated within this environment as "productive adaptation will not occur on its own" (Bernardon & Pernice-Duca, 2010. p 353). Healing the family as a unit increases mutual support, communication skills, understanding and problem solving abilities. Spirituality, faith and religion within the family unit has been linked to lower stress, increase healing and develop positive sense of well-being for everyone (Barnes, Plotnikoff, Fox & Pendleton, 2000). Medical schools around the country have included mind, body and spirit into their medical schools; centering spirituality as a strong medicine (Barnes, et al. 2000). These insights and practices suggest that the addition of mindfulness and spiritual exercises in family therapy is promising as tools to raise self-regulation and conscious awareness. As such, many third wave psychotherapies—a heterogeneous group of approaches that reformulate and synthesize previous generations of behavioral and cognitive therapy into contextual and experiential change strategies—have incorporated mindfulness as a core component in the treatment plan. These approaches include Mindful-based Cognitive-Behavioral Therapy (MCBT), Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and Mode Deactivation Therapy (MDT).

Family conflict is the most notable risk factor in child psychopathology. Parental styles, mental health and disciplinary and abusive exposure combined form the child coping strategies (Barnes, et al. 2000). All environmental factors are linked to child's moral development and socialization into personhood. Abnormal development typically translates into aggression, delinquency, substance abuse and antisocial behavior (Apsche, 2010; Tanaka, Raishevich & Scarpa, 2010; Peterson & Green, 2009, Tremblay, 2000). The role of the family is to determine and epitomize social and family expectations. When the expectations are fear and violence, a child learns to interact in the world with proactive or reactive aggression in order to protect himself (Tanaka, Raishevich & Scarpa, 2010). Proactive aggression is most associated with family malfunction, which includes parental history of drug use, family violence, and absent or single parenthood. It is distinguished from reactive aggression by the elements of predatory, planned and goal-oriented violence. Reactive aggression has been linked to child abuse and is defined as impulsive, affective and 'hot' violence (Tanaka, Raishevich & Scarpa, 2010; Seifert, 2012). This for most is nothing new. However, moral emotions have also been linked to aggression and PTSD recovery. Moral emotions refer to guilt and shame (Hosser, Windzio & Greve, 2008) and are linked, according to Bernardon and Pernice-Duca, to predict late-onset and severity of PTSD (2010). Guilt motivates people to change and admit their mistakes while shame produces social isolation and retaliation (Hosser et al., 2008). All these emotions are part and parcel of family functioning. Religion and social practices within the home can predict a shaming or guilt form of punishment. Intercepting

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and redirecting these morals can be precarious for the family counselor, especially when the treatment includes spirituality and mindfulness as found at the core of approaches such as Acceptance and Commitment Therapy (ACT). ACT has six core elements that distinguish it from other behavioral therapy approaches (NREPP, 2011). The first four elements are designed around the concept of mindfulness and are acceptance of private experiences, cognitive defusing or emotional distancing, being present, and perspective or sense of self. The last two are elements of behavioral change and include identifying personal values and commitment to action (NREPP, 2011). To reiterate an important point: Family participation in treatment is the key to child recovery. The child is the produce of their character and their family context; separating them for treatment when family participation permits, is clearly suboptimal. Bringing everyone together to participate meaningfully in a group will contribute to successfully rebuilding a healthy family unit.

Family-based Cognitive Behavioral Therapy (CBT) produces a reciprocal interaction between family patterns and personal belief systems. By incorporating reinforcements, behavioral patterns can be cognitively maintained (Bernardon & Pernice-Duca, 2008; Jacobs & Klaczynski, 2002). Other therapies with a similar approach include Dialectical Behavior Therapy (DBT) and Social Skills Training (SST). These methodologies have found success in many aspects and applications, but appears to lack the ability to affect the family structure positively or reunite families in a meaningful and sustainable way, especially where young family members present with complex comorbid problems and resistance to treatment. The possible reason, according to Barnes, Plotnikoff, Fox, and Pendleton (2000), is the lack of spirituality within the treatment model. Aspects of spirituality has been proven to decrease stress and increase sense of well-being. When added to a child's or adolescent's treatment, depressive symptoms and substance abuse decreases (Barnes et al., 2000). Regardless if the spirituality is faith-based or karmic law as the concept of cause and effect, spirituality determines the way families live and impact a child's health. Mode Deactivation Therapy (MDT) is one of the recent third wave models of connecting mind, body and spirit to aggression treatments for adolescents coping with PTSD and other complex problems (Apsche, 2010; Apsche, Bass & DiMeo, 2011). The roots of MDT development are found in combining selected core elements of ACT, CBT, DBT, and social skills training with unique practice principles such as the validation, clarification, and redirection (VCR) process that is described in more detail in a following section. By centering on the individual and their mindfulness, adolescents with Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) are not shamed by their behavior but empowered with their core existence without judgment; good, bad and dysfunctional. All experiences are validated and family functioning is explored in its real context. A child does not develop and behave in isolation; they interact reciprocally with their family and environment with respect to their and others' belief systems. Incorporating the family only enhances the communication and understanding of individual and collective core family issues. The child is therefore not viewed as the problem but the symptom; within the FMDT framework it is understood that without a united family mindfulness, anxiety, depression, and aggression will remain or return.

MDT theoretical framework

Prof. Aaron Beck, a psychiatrist at the University of Pennsylvania at the time, first described cognitive theory in the 1960s as he realized that the restructuring of dysfunctional cognitions may be able to affect behavior positively (Beck, 1963). Beck theorized that impairment of thinking preceded the cause and affective or mood symptoms instead of the opposite orientation, then the widely held view. Automatic negative thoughts were tied to their emotions, which in turn were expressed in maladaptive behavior that obstructs achievement of persons' healthy goals (Beck, 2011). Beck (1996) introduced the concept of modes as a network of cognitive, affective, motivational, and behavioral components that consist of integrated sections or sub-organizations of personality designed to deal with these specific cognitive and behavioral demands. The resulting structured, short-term, present-oriented psychotherapy approach—Cognitive Behavioral Therapy (CBT)—was refined in the course of time to include elements of Applied Behavior Analysis (ABA), which only focuses on the observable relationship of behavior to the environment without resorting to hypothetical constructs of causal relationships. According to Johnston, Foxx, Jacobson, Green, and Mulick (2006), behavior therapy approaches typically tend to limit intervention to manipulate the patient's exposure to antecedent stimuli in his environment and providing behavior support. Practitioners recognized with time that the effects of such interventions tend to be relatively short-lived and typically ineffective for clients with deeply entrenched core beliefs that stem from childhood trauma and adolescent clients with complex problems, personality disorder traits, and oppositional behavior. Thereafter, newer approaches explored the effect of dysfunctional cognitions on thoughts, emotions, and behaviors, and thus disputed their validity in an attempt to change behavioral outcomes. Herein treatment was based on "a conceptualization, or understanding of individual patterns"—patients' "specific beliefs and patterns of behavior" (Beck, 2011, p. 2).

However, according to Dobson and Dozois (2010), classical CBT propositions "encompasses treatments that attempt to change overt behavior by altering thoughts, interpretations, assumptions, and strategies of responding" (p. 4), and therefore ultimately seeks only overt behavior change as an end result. CBT gained both wide popularity and solid empirical support across a broad range of applications for adults and youth, including anxiety disorders, depression, chronic pain, schizophrenia, substance use disorders, Obsessive-Compulsive Disorder, and Posttraumatic Stress Disorder, among others (Beck, 2005). One such a study by Compton, March, Brent, Albano, Weersing, & Curry (2004) proved the effectiveness of CBT for treating anxiety and depressive disorders in children and adolescents, while also noting limitations of particular practical significance—which tended to prove typical in other, similar studies. Some of these limitations were that (1) ethnic minorities were underrepresented, (2) comparisons with other therapy approaches were not tested, (3) the effect of the presence of possible comorbidity on treatment outcome was not established, and (4) treatment durability for longer follow-up periods—9 months to 2 years—is unconvincing. Most child and adolescent CBT and CAT studies to date also focus on the treatment effectiveness of internalizing disorders (Butler, Chapman, Forman, & Beck, 2006), leaving CBT invention for youth populations with externalizing disorders such as antisocial, aggressive, and sexual offending behaviors largely unexplored. A small sample of research that studied CBT treatment of children and adolescents with externalizing disorders in the past decade found weak, little, or no evidence to establish whether CBT is effective for youth with disruptive behavior (Lochman, Powell, Boxmeyer, & Giminez-Camargo, 2011; Muñoz-Solomando, Kendall, & Whittington, 2008). In a meta-analysis of the treatment outcome studies of cognitive-behavioral therapy (CBT) for anger-related problems in children and adolescents, Sukhodolsky, Kassinove, and Gorman (2003) found an overall medium effect size, but noted that multimodal interventions were required to achieve this level of effectiveness. Grossman and Hughes (1992) highlighted a further concern in noticing that therapies for children and adolescents with internalizing disorders seem generally less effective for older youth as their core beliefs and cognitive patterns were already more entrenched and the prevalence and impact of comorbidity greater than is the case with their younger peers.

In line with these findings several concerns, negative beliefs, and drawbacks were noted regarding the classical CBT approach:

1. CBT focuses on dysfunctional cognitions as the cause of inappropriate behavior, thereby viewing the client's underlying thought patterns and beliefs as inaccurate or unrealistic. However, the valence of evaluations as positive or negative is independent and separate from their accuracy. Instead, typically, clients' accounts and assessments of their negative or distressing experiences are rational, realistic, and accurate. In such circumstances, cognitive challenging and restructuring exercises emphasize the reframing of reality instead of accepting it; hereby attempting to change perceptions borne from this reality without identifying and dealing with the true problem cause(s).
2. The CBT model appears to blur symptoms with its cognitive causes. Negative cognitions such as self-blame and self-criticism, exaggeration, dichotomous thinking, generalization, and erroneous predictions and conclusions are symptoms of core beliefs that are based on valid experiences; and not root causes of problem behavior.
3. The CBT approach does not regard the apparent conflict between self-blame bias, hostile attribution bias and self-serving bias, and the reasons and mechanisms why clients choose not to, or is unable to follow the natural tendency to see the self positively and avoid negative self-concept (Heine, Lehman, Markus, & Kitayama, 1999).

4. CBT only focuses on current problems and specific narrowly-defined issues. While it may sometimes be appropriate to maintain a narrower focus and leave the past in the past, oftentimes it is more useful to explore and address underlying causes of mental health issues and broader problems in systems or families that may contribute to these. According to Dobson and Dobson (2009, p. 247): "Cognitive-behavioral therapy addresses the symptom of the problem, but not the problem itself. As such, it does not lead to true change and 'symptom substitution' occurs."
5. The theory behind the CBT approach is based on systematic rational and intellectual insight, which tend to underestimate the value of social context and emotional insight.

Jack Apsche, developer of the Mode Deactivation Therapy (MDT) methodology, recognized the shortcomings of the classical CBT rationale, and incorporated elements of Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and mindfulness with other unique elements to overcome the difficulty in treating adolescents with complex problems, high comorbidity, oppositional, and aberrant behaviors. By acknowledging the role of family interaction in the cause and presentation of the youth's behavior, as well as core beliefs and past experiences that underlie dysfunctional cognitions and related disruptive behavior, MDT not only addresses the symptoms, but root causes as well. Rather than disputing these cognitions in an attempt to produce alternative schemas, MDT validates their existence as a reasonable product of real past experiences, which the client and his family is encouraged to explore and experiment with in terms of small shifts on a continuum. Clients with chronic problems and deeply entrenched beliefs are often unable or highly resistant to developing alternative schemas (Padesky, 1994), and no amount of disputation will produce a durable outcome.

Therefore, at the heart of MDT lies the following core principles of practice in order to treat resistant and mostly traumatized adolescent clients with behavioral problems successfully:

1. Schemas or core beliefs, which are viewed as rational and reasonable given real past experiences, underlie dysfunctional cognitions that present as aberrant behavior.
2. Schema modes—as emotional states—are mechanisms to cope with a trigger that activates core beliefs by evoking a past experience.
3. Core beliefs and dysfunctional cognitions are therefore regarded as valid and not directly challenged or restructured.
4. Instead, therapy focuses on schema awareness, defusing, trigger anticipation, and goal-directed and value-based behavior.
5. The client is the family and cooperation and trust is cultivated in sessions.
6. Mindfulness is exercised together to raise individual and collective awareness of thoughts, feelings, and actions, at the same time lowering resistance.

As indicated in Figure 1 above, distorted core beliefs are developed as a coping response to adverse childhood experiences, which in turn affects cognitive functioning and emotion regulation and may ultimately express in aberrant behavior. An individual's behavior interacts with his surroundings and elicits responses from it that further reinforces or undermines cognitive schemas.

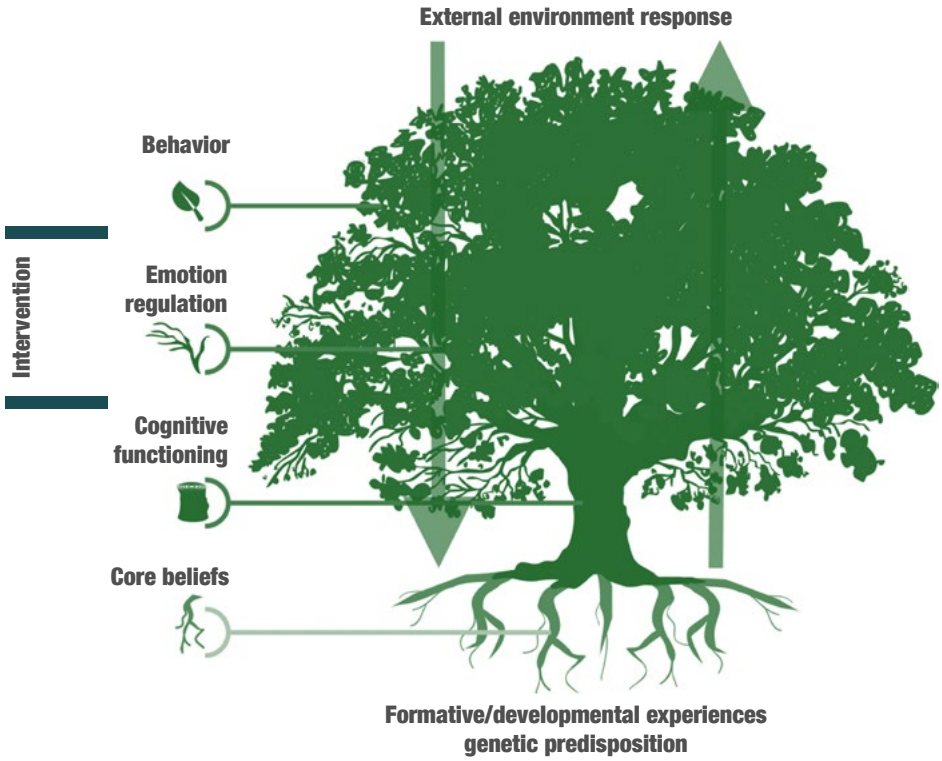

Figure 1. MDT dynamic process

Therefore FMDT intervention essentially targets cognitive and emotion regulation processes by creating individual and collective awareness in the family of their dysfunctional and conflicting core beliefs, the mechanisms of expression, and situations that trigger these. This approach to mindfulness creates an environment where change is gently encouraged and systematically monitored to support life goals of the family.

FMDT methodology

The Family Mode Deactivation Therapy (FMDT) process is initiated with establishment of a professional collaboration through deliberate information exchange that covers an informed consent and goal-directed discussion with the family, professional disclosure by the therapist, and a formal agreement of the process and administrative details. It is important to reiterate that the family is treated as "the patient" in this process. The initial face to face encounter of the family, adolescent, and therapist is an essential occasion to build a therapeutic alliance early in the course of assessment and treatment. Kazdin, Marciano, and Whitley (2005) related the strength of child-therapist and parent-therapist alliances to a shared recognition and understanding of potential barriers and resistance to treatment efficacy and acceptance, which greatly affects treatment change. These dynamics are particularly pertinent in dealing with transition-aged youth with oppositional, aggressive, and antisocial behavior, and other complex or comorbid presentations—the typical male patient profile that the development of FMDT focused on. FMDT applies two central mechanisms to engage and transform dysfunctional adolescents who may be resistant to treatment, namely Validation-Clarification-Redirection (VCR) of core beliefs and mindfulness exercises. These concepts are explained in more detail in subsequent paragraphs. At this time it is suffice to restate the importance of the FMDT approach to facilitate a strong therapeutic alliance that greatly improves the possibility of a successful treatment outcome.

Pre-treatment assessment

Soon after intake—within the first 30 days—the adolescent and his family completes a battery of tests to determine their pretreatment individual and collective functioning, which forms the framework of the case conceptualization that guides the treatment process forward. Each family is managed as unique and the resulting treatment plan is individually developed by interpreting the computer scores of each respective test and understanding how each member differs from another and from the family mean score in assessment domains. The following instruments form the bedrock of the FMDT case conceptualization, treatment plan, and monitoring (Apsche & Swart, 2013) and is only briefly described as part of the scope of the current study:

1. Family Typology Survey: A full diagnostic, behavior, medical, and health history.
2. Family Behavior Scale: A review of the youth's and family's behavior.
3. The Family Fear Assessment: An assessment of 60 items that identifies basic difficulties, anxieties, or

fears of the family. Each family member participates in completing the assessment, the scores are totaled, and a mean score is determined for each item.

4. The Family Compound Core Belief Questionnaire: An inventory of 209 (standard version) or 96 (short version) questions related to the family's belief systems. The Family Compound Core Belief Questionnaire (CCBQ) is scored in the same manner as the Family Fear Assessment.
5. The Functionally Based Treatment Development Form: This form addresses the collective family beliefs and supplies the family a specific methodology to develop and maintain more functional family beliefs. It consists of the Family Conglomerate of Beliefs and Behaviors form, and the Family Triggers, Fears, Avoids, and Behaviors diagram.
6. Behavior tracking sheets: Self-report sheets are used daily at home and in treatment to report and track incidents of physical aggression and other external emotional expressions, internalized emotional experiences such as anger, hurt, frustration, and fear, and sexual offensive behavior (Apsche & Apsche, 2009).
7. Child Behavior Checklist (CBCL): The CBCL/6-18 is a parent-report questionnaire that consists of a number of statements about the child's behavior for which responses are score on a Likert scale: 0 = Not True, 1 = Somewhat or Sometimes True, 2 = Very True or Often True. The school-age checklist contains 126 questions, including 13 background and open-ended questions of the child's interests, dislikes, and relations in the family. The 2001 revision of the CBCL/6-18, is made up of eight syndrome scales—anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, aggressive behavior—and six DSM-oriented scales consistent with DSM diagnostic categories—affective problems, anxiety problems, somatic problems, ADHD, oppositional defiant problems, and conduct problems. The syndrome scales further group into two higher order factors—internalizing and externalizing behaviors.
8. Strait-Trait Expression Inventory (STAXI-2): The STAXI-2 is a 57-item questionnaire that provides a comprehensive anger profile assessing experience, expression, and control of anger, while accounting for both state and trait aspects of anger. Anger is assessed in three domains—experience, expression, and control—which are further grouped into scales and subscales as illustrated in Table 1 above (Spielberger, 1999).

As such, the STAXI-2 determines whether the individual has an inclination or natural tendency to express anger by focusing behavior outward onto other people or objects (Anger Expression-Out, AX-O), or directed inward (Anger Expression-In, AX-I). The third component is the degree to which people attempt to control their anger, both outwards (AC-O) and inwards (AC-I). According to Apsche, Bass, and Backlund (2012), the STAXI-2 measure is used to direct and determine the efficacy of FMDT because of the relationship developed in the scales from anger to aggressive behavior.

Table 1. STAXI-2 domains, scales, and subscales

Anger domain	Scale	Subscale	No. of items
Experience	State anger	State anger-feelings	5
		State anger-verbal	5
		State anger-physical	5
	Trait anger	Trait anger-temperament	4
		Trait anger-reaction	4
	Additional items		2
Expression	Anger expression-out		8
	Anger expression-in		8
Control	Anger control-out		8
	Anger control-in		8

The latter three assessment tools—numbers 6, 7, and 8 above—provide a quantitative comparison of behavioral "performance" before, during, directly and at other intervals after treatment as opposed to the other five assessments—numbers 1 to 5 above—that qualitatively inform the therapist of the functioning of the adolescent and family unit and dysfunctional core beliefs that should be addressed during treatment. After interpretation of the assessment instruments, the case conceptualization is compiled, also in collaboration with the adolescent and his family. Herein the concurrent process of the activation by a trigger of the orienting schema mode in the fears → avoids paradigm and the related core belief(s) are explored by utilizing the inputs from all family members. Schema modes are best described as moment-to-moment emotional states and coping responses—behavioral, emotional, and physiological—that are experienced as a result of life situations and in the context of past experiences. Practices of mindfulness are applied to sensitize the adolescent and his family to the present moment without question and build upon this nonjudgmental approach in the ensuing Validation-Clarification-Redirection (VCR) process.

Mindfulness

Based on the psychotherapeutic theory and practice from the perspective of the Yogacara School of Buddhism "human suffering in various forms arises from illusory perceptions of the self and external environment" (Lee, 2002, p. 247) and Buddha asserted that mindfulness as "awareness without judgment, attachment, or aversion to what is happening in the present moment" (pp. 247-248) is the crux to cultivate alternative positive states. As such, mindfulness is the awareness without judgment of what is, via direct and immediate experience. "Mindfulness means paying attention, in a particular way; on purpose, in the present moment and non-judgmentally. This kind of attention nurtures greater awareness, clarity, and acceptance of present-moment reality." (Kabat-Zinn, 1994, p. 4). It is this appreciation and understanding without reservation of the perception of different reality constructs and the individual's interaction with it that could activate a functional alternative belief instead of an unsound state of mind.

The FMDT practice methodology therefore integrates simple mindfulness exercises such as one minute awareness of breath, full sensory awareness, and present moment awareness into the therapeutic approach. The therapist participates with the family and guides them to engage fully with their self and others without judgment. Awareness of thoughts, feelings, and physical sensation are acknowledged and discarded as unimportant in self-definition. Studies have illustrated that mindfulness, as an experience in the present without bias or preconceived ideas, is effective training for adolescents with externalizing symptoms and disorders, including oppositional defiant and conduct disorder, impulse problems, and reactive and proactive aggressive behavior, as well as internalizing symptoms and disorders such as depression, anxiety, and suicidality (Bögels, Hoogstad, Van Dun, De Schutter, & Restifo, 2008). This population is generally known to be difficult to treat effectively, but MDT outcomes have demonstrated that it is a viable treatment approach, especially where it is possible to involve families in mindfulness training and therapy.

Furthermore, it is important to note that the therapists who conducted the mindfulness exercises are themselves skillful practitioners and that its application is developmentally appropriate for non-adult participants and their individual capabilities. The goal of the mindfulness exercises is for the adolescent and his family to become more aware of both the object of the exercise as well as other external happenings—including each other—in the present moment, providing practice to respond to changes in both in as nonjudgmental a way as possible (Thompson & Gilbert, 2008). Typically, practitioners focus more on explaining the process and rationale with younger participants in order to ensure full engagement. By extending mindfulness from therapy sessions to everyday life, the adolescent and his family are coaxed into applying the mindfulness practices more widely, which reinforces mindful behavior and extends the impact of treatment outcomes. Mindfulness exercise sessions in FMDT are typically of 5 to 10 minutes duration, and the participants are actively encouraged to report their emotions, thoughts, and experiences, which provides signs of progress to the practitioner in addition to changes in style, manner, and behavior that is observed. As the practitioner plays a vital role

in the successful transference of skills, developing their own expertise are encouraged as mindfulness "cannot be taught to others in an authentic way without the instructor practicing it in his or her own life" (Kabat-Zinn, 2003, p. 149).

Validation, clarification, and redirection method

The Validation-Clarification-Redirection (VCR) process is unique to the Mode Deactivation Therapy (MDT) methodology and builds upon elements from behavioral, cognitive, and dialectical, acceptance and commitment approaches. Although there is general agreement that dysfunctional cognitions are the core component of effective psychotherapy, these are approached and treated very differently in each system. Whereas cognitive behavioral avenues tend to directly dispute cognitions, emotions, and behavior, other third wave therapists believed it more helpful to validate and accept these as a natural result of the patient's life experiences. Instead, dysfunctional cognitions are acknowledged and accepted as understandable and reasonable under their owners' circumstances, thereby appreciating the fact that the avoidance of problematic cognitions and emotions is considered a key cause of psychopathology. MDT applies gentle, indirect cognitive techniques rather than disputation, which has proved effective with oppositional and resisting adolescents, deeply entrenched dysfunctional beliefs and cognitions. The approach also tend to support a strong therapeutic alliance, reduce patient and family stress, while improving participant reactivity. The Validation, Clarification, and Redirection method in the FMDT methodology exposes and attempts to balance irrational and illogical beliefs that are often deeply held by families in crisis (Apsche & Swart, 2013).

Validation. During the assessment process, each family member's thoughts and beliefs are identified and explored individually and as part of the family dynamics. These are accepted in the context of past and present experiences and explicitly validated. The essence of validation as applied in MDT is best described by Dr. Marsha Linehan, the developer of Dialectical Behavior Therapy (DBT), as follows (1997, pp. 356):

> *The essence of validation is this: The therapist communicates to the client that her responses make sense and are understandable within her current life context or situation. The therapist actively accepts the client and communicates this acceptance to the client. The therapist takes the client's response seriously and does not discount or trivialize them. Validation strategies require the therapist to search for, recognize and reflect to the client the validity inherent in her response to events. With unruly children, parents have to catch them while they're good in order to reinforce their behavior; similarly, the therapist has to uncover the validity within the client's response, sometimes amplify it, and then reinforce it.*

This is referred to in MDT as the "grain of truth" in each family member's responses, which forms an integral part of the path forward to identify and explore alternative possibilities. Patients are asked to experience and accept their cognitions and emotions, without judging, avoiding, resisting, or trying to change them. This approach tends to reduce focus on and diminish the intensity of problematic cognitions and emotions, while pursuing life goals instead.

Clarification. During the systematic inquiry process to identify and explore dysfunctional beliefs and cognitions of the family, the therapist clarified the content of their responses and beliefs and emotions that were activated (Apsche, Bass, & Houston, 2008). It is important that the clinician and family mutually understand and confirm the content of the clarification, whereby a better understanding is developed of the family's deeply entrenched thinking schemas. Each member's perspective of reality and beliefs are discussed and clarified to interpret its role and significance in individual and group functioning. The clinicians allowed for a proactive environment in which the family is actively encouraged to clarify their values and understand their personal motivations and characteristics, which facilitates goal setting and consideration of alternative beliefs and cognitions further on in the process. Clarification is a vital step to ensure mutual understanding and cooperation between family members and with the clinician. This consensus or common rapport in turn fosters improved trust and empathy between members and increases commitment to treatment.

Redirection. After identifying, validating, and clarifying dysfunctional cognitions and their underlying core beliefs, the clinician work with the family to identify and anticipate triggers of automatic thoughts that cause aberrant behavioral responses. The adolescent and his family is encouraged and empowered to recognize and face their beliefs, and develop alternatives on a continuum that are not judged as good or bad, but only how they are expected to contribute or prevent the achievement of life goals. The family is guided to appreciate that their core beliefs are valid and understandable given the circumstances that underlie them, but not necessarily the only or best alternative. Rather than applying a dichotomous thinking process by only considering polar opposites, family members are inspired to experiment with options on a continuum and note their change in thoughts, emotions, and behavioral responses as a direct result of the belief modification—however slight. Family members are asked to apply these changed beliefs daily and monitor evidence that support positive aspects and outcomes that pertain to it. The goal of the redirection step is to help family members to find (and experience) exceptions and "flaws" in their belief system—appreciating that while their beliefs are valid and reasonable, alternatives are possible that may better support and enable their life goals. The concept is also applied when there is conflict between held beliefs, either within the individual or family unit, or between members. The outcome is therefore not only to modify individual core beliefs and corresponding behaviors, but realign and integrate the family belief system into a cohesive and harmonious schema that minimizes external and internal conflict and dysfunctional behaviors. These behaviors are continuously explained and understood as each individual in the family unit modifies and integrates their beliefs and behaviors within the larger family unit.

Family therapy approach

As previously mentioned, it is widely recognized that interactions and experiences in the family unit have a profound effect on child attachment and personality development. As the focal point during a child's most important formative period, these experiences form and shape beliefs and corresponding coping mechanisms that gradually become automatic and deeply entrenched. The MDT theoretical framework was developed on the premise that these core beliefs underlie dysfunctional cognitions that are typically activated by situational triggers and result in an automatic response of aberrant thoughts and behaviors. MDT is applied to deactivate these problematic cognitive schemas and modes, and as the family is the crux in both its synthesis and maintenance, it is appropriate and beneficial to treat the family as an intra-active unit throughout the entire process. Assumptions, standards, and expectations among family members typically overlay their core beliefs and form a subjective world view where distressful situations trigger coping responses that may be construed as maladaptive and detrimental to the individual and his surroundings.

MDT practices utilize the concept of "Targeted Dysfunctional Behavior Cycles" as explained by Carich and Stone (1998, p. 331): "Chronic problems can be tracked as patterns of behavior. These patterns of behavior occur over time and at the levels of individual, couple, family, and extended family. These habitual patterns of behavior are cycles." According to Dattilio (2013), distressed families tend to view each other's negative behaviors as due to unchangeable patterns, which is linked to the interplay of cognitive-behavioral and affective functioning. These negative behavioral interchanges further entrench core beliefs and their associated dysfunctional assumptions and contribute to dysfunctional outcomes for youths in school, home, and within interpersonal relations (Apsche, Bass, Zeiter, & Houston, 2009). Similar to the approach suggested by Carich and Stone (1998) for distressed families, the tools of MDT help the family to identify problem cycles, triggers, and cues, and by anticipating and avoiding risky situations or factors, appropriate interventions may be taken to prevent a relapse.

Family Mode Deactivation Therapy (FMDT) also examines the process of family interactions, which is managed and monitored based on the collective case conceptualization process. FMDT does not focus on the adolescent as embedded in the family system *per se*, but rather on the schema of family beliefs and behaviors based on the collective and individual modes of the family members (Apsche, Bass, Zeiter, & Houston, 2009). Therefore FMDT does not focus on an individual client as is the case with most other psychotherapy approaches, but applies the process and exercises covered in the family workbook to collaboratively structure, measure, and monitor reintegration and realignment of the troubled youth and his distressed family (Apsche & Apsche, 2009). FMDT applies weekly individual and group therapy sessions, provided for an average of 8 to 12 months depending on the level of cooperation and amenability to treatment of the adolescent and his family. Each individual in the family, as well as the family

	MDT		TAU	
Race	***N***	**%**	***N***	**%**
African American	30	49.2	29	47.5
European American	27	44.3	28	45.9
Hispanic	4	6.6	4	6.6
Other	0	0.0	0	0.0
Total (*N*)	61	100	61	100

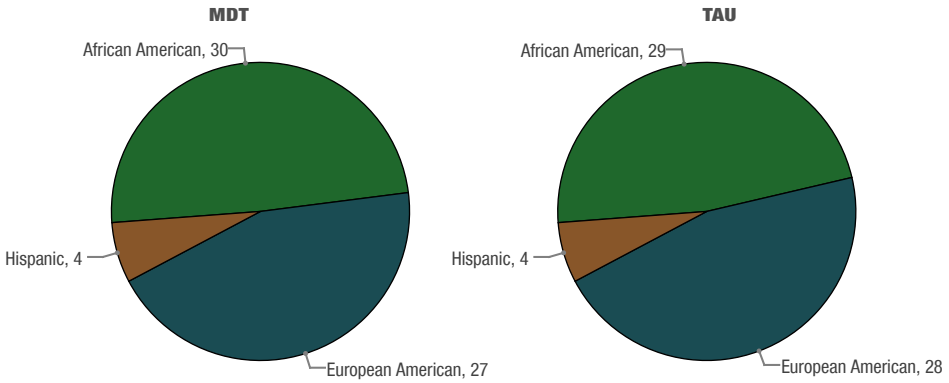

Figure 2. MDT and TAU groups racial composition

collectively, completes the assessments described briefly earlier. The clinician pays attention to the fact that allegiances between family members and with others, including the therapist, are often shifting or there is an impetus influence this, and monitor non-verbal clues to counter this tendency by an inclusive inquiry through the validation, clarification, and redirection technique. Therefore, FMDT creates an inclusive and balanced environment to deal with content areas that generally pose a problem for many psychotherapy approaches, namely core beliefs and dysfunctional cognitions that stem from traumatic childhood experiences.

■ Experimental method

The study group was composed of 122 individuals in residential care and their families, divided into a 61 member Treatment as Usual (TAU) control group and a 61 member Mode Deactivation Therapy (MDT) experimental group. Admission to this study was done on a rolling basis based upon admissions to the facility—assignment to either group was determined randomly by a staff member not in any way related to this study. The racial makeup of both groups are indicated in Figure 2 above.

Families were defined as caregivers and their household members who occupied the residence where the individual was intended to be discharged to. As this study was conducted in a functioning treatment center, with its own procedures for admission and discharge, it was impossible to establish a definitive length of stay for both groups—the members of each group had variability in their length of stay ranging from approximately 6 to 9 months. The full CBCL test was completed by the direct care and educational staff within 30 days of admission. Staff members dealing with either experimental group were blinded at the outset as to which therapeutic paradigm would be used with each client. Unfortunately due to the collaborative nature of a residential treatment center, they could not be blinded for the post-test evaluation as the same staff members were involved in administering the therapy program. The STAXI-2 was completed by the therapist assigned with the child—also within 30 days of admission. The post-test was administered by the same therapist who provided the treatment, thus similarly not being blinded. It is not likely that being aware of the therapeutic paradigm used for a specific client biased post-test results to the extent where outcome measures were influenced. Nevertheless, this potential weakness should be resolved in future research on the efficacy of the FMDT paradigm. Demographic information is limited to race and diagnostic profile, which is indicated in Figures 2 and 3, respectively.

The methodology used for the TAU group was standard Cognitive Behavior Therapy (CBT), in both individual and family therapy, based on the approach and style described by Dattilio (1998a). The providers were supervised in this methodology on a weekly basis throughout their treatment efforts by a doctoral level clinician with extensive training in this area. Similarly, the MDT group was supervised by a doctoral level clinician on a weekly basis. Both the TAU and MDT group participants were randomly assigned to the study groups from the resident population in the same facility. The participants shared a range of between 15 and 17 years of age. Participants were informed of the possibility that collected data will be

	MDT		TAU	
Diagnosis	***N***	**%**	***N***	**%**
Axis I				
Conduct disorder (CD)	37	60.7	34	55.7
Oppositional defiant disorder (ODD)	15	24.6	18	29.5
Posttraumatic stress disorder (PTSD)	29	47.5	26	42.6
Depressive disorder (DD)	6	9.8	3	4.9
Anxiety disorder (AD)	4	6.6	2	3.3
Axis II				
Borderline personality disorder (BPD)	13	21.3	11	18.0
Narcissistic personality disorder (NPD)	2	3.3	2	3.3
Dependent personality disorder (DPD)	4	6.6	3	4.9
Avoidant personality disorder (APD)	2	3.3	5	8.2
Mixed personality disorder	23	37.7	20	32.8

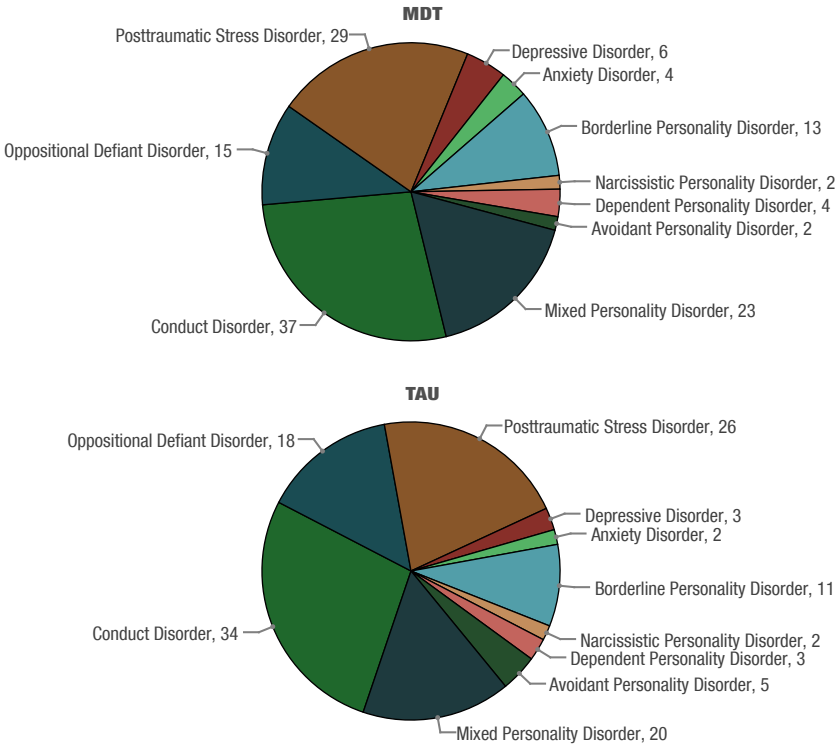

Figure 3. MDT and TAU groups diagnostic information

Instrument	MDT Pre	MDT Post	TAU Pre	TAU Post
CBCL				
Internal	74.94	49.65	73.81	69.80
External	73.97	48.16	73.12	70.18
STAXI-II				
Anger con out	49	29	47	45
Anger con in	48	31	49	46
Anger aggression index	51	32	49	48

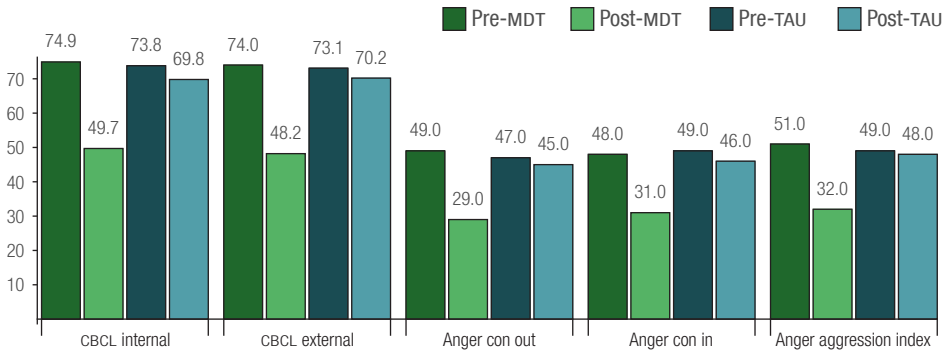

Figure 4. CBCL and STAXI results for MDT and TAU groups

used in a study. Similarly, family members were also informed of the possible use of the collected data, as was the Department of Youth and Family Services. Adolescents and their families were informed of the process, objectives of treatment, administrative procedures, and what is expected of them during this time. Informed consent was established in writing with all participants. All reasonable efforts were made in the research reporting and publication process to disguise the name of the facility, as well as participants' identifying information.

■ Results

The Child Behavior Checklist (CBCL) and State-Trait Anger Expression Inventory-2 (STAXI-2) tests were administered before treatment and after completion of treatment. The difference between pre- and post-treatment results inferred the efficacy of treatment, while the comparison between post-treatment results of the MDT and TAU paradigms compared their respective performances. As expected, average pre-treatment scores of the MDT and TAU groups respectively were statistically similar. The CBCL and STAXI results are displayed in Figure 4 above.

The CBCL is a multi-axial assessment designed to obtain information regarding behaviors and symptoms of 6 to 18 year old children. For the purposes of this study we focused upon the results categorized into internalizing (somatic, withdrawn, anxious or depressive behaviors) and externalizing (aggressive or delinquent) behaviors, which are the two broad-band scales of the test. These two factors moved together when treated with TAU as well as MDT. The overall impact of the clinical interventions differed markedly; however the TAU total score declined by significantly smaller numbers for the internalizing and externalizing scales respectively, namely 4.0 points (~5%) and 2.9 points (~4%), from pre-treatment to post-treatment with Cognitive Behavioral techniques. In comparison, the group treated with MDT techniques declined by 25.3 points (~34%) and 25.8 points (~35%) respectively. These results represent a consistent and statistically significant difference in the treatment outcomes as measured by the CBCL.

Similarly, the STAXI revealed a markedly greater positive impact from treatment using MDT. This instrument was designed to assess the components of anger as manifested in the residents both in terms of the expression of anger—inwards and outwards—and the ability to control or contain it. Primary attention was given to components of the instrument that assess the client's ability to control the expression of anger towards others or the environment (Anger Control-Out) such as refraining from an aggressive outburst, and towards anger directed inward (Anger Control-In) such as self-soothing.

Using the TAU approach, the pre- and post-treatment data that relate to the control of outward anger expression declined by 2 points (~3%), and the control of inward anger expression declined by 3 points (~6%). The MDT group was generally assessed to be slightly more impacted initially (at pre-treatment) by anger issues than the control group when assessing the STAXI-2 anger expression and outwards anger control scores, as well as the reported number of physical aggression incidents. The Anger Control-Out score declined by 20 points (~41%), while the Anger Control-In score declined by 17 points (~35%) with MDT. The average group categorizing of the total anger expression index showed a similar impact, declining by only 1 point (~2%) in the TAU group, and 19 points in the MDT group (~37%).

A more subjective but equally important measure was assessed, namely physical aggression. Physical Aggression by the residents was selected as the third dependent variable as it represents one of the highest risk behaviors manifested by the residents. Although both intervention techniques impacted the client's tendency to manifest anger as physical violence, it is important to note that the follow-up showed not only maintenance of an ability to contain anger, but also a further and durable decrease of its frequency. The physical aggression data is reported in Figure 5 on the next page. For the purpose of monitoring and reporting the adolescent's behavior consistently and objectively, an incident of physical aggression was defined as an "act directed towards a specific other person or object with the intent to hurt or frighten, for which there is a consensus about the aggressive intent of the act" (Shaw, Giliom, & Giovannelli, 2000, p.398).

These data points were derived from reports by staff during the first month of the youth's treatment, then again during the last month. Inter-rater reliability was enforced by the supervision of the unit supervisors. The follow-up data was reported by the child's family with the use of a daily tracking sheet that was completed to reflect the entire time-frame since discharge—for example the TAU group reported 57 incidents of physical aggression since discharge, compared to the 3 incidents reported by the MDT group. The statistical integrity of these data reports are potentially unreliable due to the difficulty to ensure inter-rater reliability in terms of consistency of reporting and subjectivity in the judgment whether an incident qualified as physical aggression. Nevertheless, the results were included as a potential qualitative indicator for the interpretation of the audience (Figure 5). However, the trends as suggestive of the results corroborate those found in the CBCL and STAXI-2 comparisons and reports of the long-term effective of traditional CBT treatment for similar populations (Rohde, Clarke, Mace, Jorgensen, & Seeley, 2004; Kar, 2011). TAU achieved a modest reduction in the incidence of physical aggression between pre-and post-treatment (~33%) compared to the almost complete elimination (~91%) of such incidents over the same period with MDT. Of even greater empirical and practical significance if adequately statistically proven, is the relative performance during the average follow-up period of 16 months for each group. The results appear to support the concern that traditional CBT methods has poor longer-term treatment durability for adolescent populations with complex problems—incidents of physical aggression again rose to nearly pre-treatment levels at follow-up (~11% lower). On the other hand, MDT seems to sustain treatment outcomes markedly better, and even noted a continued decline in incidents of physical aggression—at follow-up down 96% from pre-treatment numbers.

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 (.849) and External (.894) states. Similarly, the STAXI means achieved high-medium to large effect sizes for Anger Control In (0.699), Anger Control Out (0.840), and Anger Expression Total (0.670). These effect sizes suggest that results analyzed were not due to chance—roughly three-quarters to eighty percent of the TAU group showed less improvement than the average MDT participant depending on the particular CBCL or STAXI component. The Cohen's *d* and effect size values are displayed in Figure 6 on the next page.

After ruling out chance, we can therefore conclude that the results of the study are valid, and that the comparisons between the outcome parameters of TAU and MDT are statistically significant. There are also no evidence to suggest that the study is not

Physical aggression	Pre	Post	Follow-up
MDT	67	6	3
TAU	64	43	57

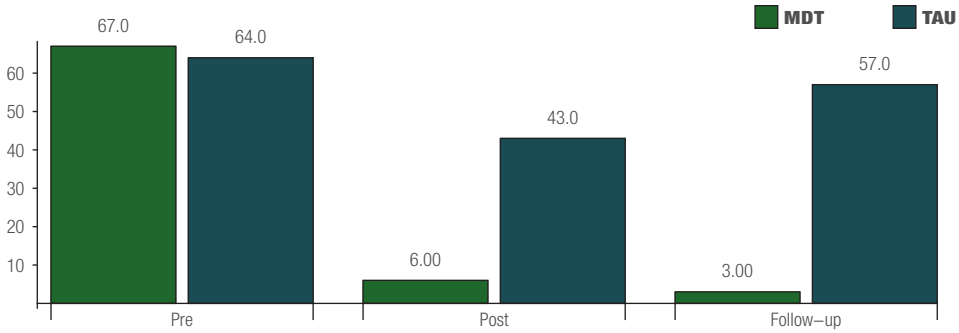

Figure 5. Incidents of physical aggression reported for MDT and TAU groups

reproducible without difficulty, although certain limitations are noted later on as implications for further study. Indeed, according to Apsche, Bass, and DiMeo (2010), their meta-analysis confirmed that "replication of treatment shows that MDT is consistently reliable in addressing the externalizing behavior disorders as well as the internalizing behavioral disorders" (p. 180).

Discussion

The difficulties inherent in conducting research within an active behavioral healthcare treatment facility are legion. It has been demonstrated elsewhere, however, that results of empirical work done in highly controlled academic institutions do not reliably generalize to "real-world" applications (Weisz, Sandler, Durlak, & Anton, 2006). The authors' development of this paradigm springs directly from active work with a population that defies controlled empirical inquiry due to their age, the mandated nature of their participation in care, and the volatility of their behavior. As previously stated, it is this population, however, that most frequently stymies the clinicians who try to help them. We feel strongly that empirical work must be conducted here, in "the real world" where effective treatment strategies are so desperately needed, especially for underserved and poorly understood or "untreatable" populations.

This is one of a growing base of MDT preliminary research studies that indicates continued promise for Family Mode Deactivation Therapy (FMDT), but it is clear that further work should be done. The sample size is small, yet the data from the effect size suggest a powerful effect, the researchers are not adequately blinded when conducting the pre- and post-treatment evaluations, and the two paradigms are not necessarily applied for identical periods of time, but based upon the requirements of each individual case as required in a functional therapy environment. Therefore, there are many opportunities for improvement in design, none of which are insurmountable in practice.

MDT is trauma-sensitive, and attempts to grapple with content areas that generally pose a problem for more typical cognitive intervention strategies, namely unconscious patterns of cognition that stem from early and or traumatic life-experiences. These core beliefs are carefully assessed and interweaved with more typical interventions in a way that we feel avoids the inherent sense of judgment and appraisal that activates the highly sensitive defensive patterns in this type of youth and family.

	Cohen's *d*	Effect size
CBCL		
Internal	3.230	0.849
External	3.967	0.894
Total	5.803	0.934
STAXI		
Anger con in	1.753	0.699
Anger con out	3.105	0.840
Anger expression	1.507	0.670

Figure 6. Cohen's *d* and effect sizes for CBCL and STAXI results

Implications for practice and future study

FMDT, as an approach to treat adolescents with disruptive behaviors and comorbid conditions—which often arise from traumatic childhood experiences and related dysfunctional schema modes—continues to seem to outperform classical cognitive therapy treatments, both during treatment and especially at longer-term follow-up. However, the majority of research is not independently conducted, and a larger pool of research is required to establish results that could be considered free from bias of any nature. Furthermore, in addition to unique process components, the MDT methodology is made up of other elements that were incorporated from other so-called third wave approaches that were mostly adapted from the CBT paradigm. It will therefore be useful to disentangle the various components of FMDT to determine the relative contribution that each make to the overall treatment outcome. This can be done by various means, of which mediation and component analyses are the most used in psychotherapy research. It could be especially meaningful to explore the role of mindfulness in the performance of FMDT as a separate component (component analysis) or as a mediator variable (mediation analysis). Similarly, it is contended that MDT has an impact on anger and aggression through mechanisms that are specific to MDT treatment, as opposed to non-specific factors affecting treatment. Such a component is the structured validation, clarification, and redirection (VCR) process in FMDT, of which the unique impact should be qualified.

In conclusion, according to Apsche, Bass, and DiMeo (2010), the first 38 published and unpublished MDT research studies proved the claim that MDT is a superior form of cognitive behavioral therapy that addresses not just the adolescent's externalized behavior, but internal states as well. The current study, which supports such evidence, not only further highlights the promising potential of Family Mode Deactivation Therapy (FMDT) to provide effective therapy to the difficult-to-treat adolescent population with disruptive behaviors, comorbid conditions, and mixed personality traits, but also the need to understand the symbiosis and relative contribution of its different elements or components better.

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A comparative treatment efficacy study of conventional therapy and mode deactivation therapy (MDT) for adolescents with conduct disorders, mixed personality disorders, and experiences of childhood trauma

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Abstract

Mode Deactivation Therapy (MDT) was developed based on the cognitive theory of Prof. Aaron Beck, and incorporated elements from Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and mindfulness with the novel change effect process—Validation, Clarification, and Redirection (VCR)—that is the crux of the mode deactivation concept. MDT has the objective to overcome shortcomings of other cognitive-behavioral therapies in the treatment of adolescents with trauma-based multiple Axis-I conditions and Axis-II personality constellations that have proved difficult to treat. As the most recent of more than 20 MDT research studies to be reported, this study confirms the effectiveness of MDT in treating this population. A sample of 143 participants were treated at an inpatient facility and randomly assigned to an experimental MDT group or a standard Cognitive-Behavioral Therapy (CBT) (Treatment as Usual, TAU) group. Across the assessment measures applied, MDT achieved a higher than 40% average improvement from baseline at treatment completion. An average improvement of 5% was reported for the TAU group. Results are consistent with previous studies and provide evidence of the validity and utility of MDT to treat adolescents with behavior problems cost-effectively.

Keywords

mode deactivation, MDT, adolescent, conduct disorder, cognitive-behavioral, substance abuse, aggression, childhood abuse, trauma, personality disorder, contextual therapy

Mode Deactivation Therapy (MDT) is a Cognitive-Behavioral Therapy (CBT) derivative that was developed to overcome specific problems in the treatment of adolescents with dysfunctional behavior. This population typically has a history of abuse that developed into DSM Axis-I disorders such as Conduct and Oppositional Defiant Disorder, mood disorders, PTSD, and comorbid substance abuse, and Axis-II disorders that are commonly a constellation of personality disorder criteria. The MDT theoretical framework leans heavily on the shoulders of the work done by Prof. Aaron Beck in the areas of negative automatic thoughts and cognitive schemas. Elements of Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and mindfulness were combined with a novel change effect component to provide effective treatment for adolescents with behavioral problems. The Validation-Clarification-Redirection step is the crux of MDT and based on the concepts of awareness, validation, and acceptance of problems and their roots, rather than disputing them. In the 15 years or so that MDT has been practiced, about 20 developer-conducted and independent research studies, including the current study, consistently provided evidence of the effectiveness of MDT in treating this adolescent population.

Literature review

In the work done by Aaron Beck, he focused on negative automatic thoughts as the initiating mechanism of dysfunctional behavior (Beck, 2005). The automatic thoughts are activated by a trigger that can be associated with underlying experience-based core beliefs. Although he initially concentrated on the study of depression, a broad variety of adolescent behavior problems are also widely associated with cognitive schemas that act as coping mechanisms in response to chronic distress. Such beliefs commonly result in poor regulation of affect and impulses, somatization, low self-esteem, dysfunctional attachments, guilt, shame, and dysfunctional worldviews. According to Luxenberg, Spinazzola, and Van der Kolk (2001), these are the results of extreme deprivation during childhood and represent a complex adaptation to trauma. Based on extensive field work, they devised the DESNOS symptomatology, and arranged a list of 27 symptoms associated with disorders of extreme stress not otherwise specified (DESNOS) into seven categories (see Table 1 on page 24): Dysregulation of (a) affect and impulses, (b) attention or consciousness, (c) self-perception, (d) perception of the perpetrator, (e) relations with others; (f) somatization, and (g) systems of meaning. This constellation of symptoms was found to be very consistent and statistically correlated with PTSD. Among groups with different types of trauma, and early and late onset of symptoms, it was found that children below 14-years who experienced high-magnitude interpersonal violence endorsed the most DESNOS items. In fact, "the younger the age of onset of the trauma, the more likely one is to suffer from the cluster of DESNOS symptoms, in addition to PTSD" (Van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005, p. 395). Therefore, such interpersonal trauma that is prolonged and first occurs at an early age, can have significant effects on psychological functioning beyond PTSD symptomatology.

Childhood abuse also has an impact on personality development with constellations of personality traits common among adolescent abuse victims. Different personality constellations have been identified in this context. The first is a four-array classification with Internalizing Dysregulated, High Functioning Internalizing, Externalizing Dysregulated, and Dependent as distinct personality constellations with statistically different diagnostic and adaptive functioning (Bradley, Heim, & Westen, 2005). These groups represent different in- or outwards expressions as a response to childhood trauma, which is meaningful in determining the underlying belief schemas. A second personality cluster classification, devised by Blagov, Bradley, and Westen (2007), also has four diagnostic groupings that resemble the clinical concept of neurotic styles instead of internalizing and externalizing dimensions of behavior, namely depressive, hostile-competitive, obsessive, and hysterical. Even with a sub-threshold personality pathology it is possible to identify developing dysfunctional personality traits and clusters that can be associated with a belief schema that resulted from early abuse and neglect. Identifying and differentiating between personality prototypes are important in good case conceptualization as different treatment needs are likely required. The personality constellations are after all representations of belief schemas shaped by prolonged and complex interpersonal trauma that is likely to have occurred in the home.

The work of Prof. Aaron Beck pioneered the development of Cognitive-Behavioral Therapy (CBT), which formed the basis of the MDT approach. A number of CBT studies showed poorer outcomes for Axis-I disorders with comorbidity on Axis-II (Vallis, Howes, & Standage, 2000; Kuyken, Kurzer, DeRubeis, Beck, & Brown, 2001; Wölwer, Burtscheidt, Redner, Schwarz, & Gaebel, 2001), especially at follow-up (Chambless & Tran, 1997). Mode Deactivation Therapy (MDT) was developed with these shortcomings in mind, and applied a new approach—Validation, Clarification, and Redirection (VCR)—with traditional CBT principles and elements of DBT, ACT, and mindfulness to provide an evidence-based effective treatment for adolescents with behavior problems and complex psychopathology.

What are schemas?

Among adolescents with behavioral problems, early maladaptive schemas related to childhood trauma are likely underlying their emotions, their poor ability to direct it appropriately, and a dysfunctional expression thereof. Early maladaptive schemas are self-defeating, core themes or patterns that develop and are reinforced with distressful life events, and is later activated only by the anticipation of events of a similar nature (Martin & Young, 2010). These schemas develop when a child's core emotional needs are consistently not met. These needs are (1) safety and stability though secure attachments, (2) a sense of autonomy, competence, and identity, (3) freedom to express valid needs and emotions, (4) spontaneity, and (5) realistic limits and self-control (Young, Klosko, & Weishaar, 2003). When a familiar distressful event is encountered or anticipated, these early maladaptive schemas are internalized or externalized and expressed as a behavioral style that is reminiscent of the personality styles discussed above, namely depressive, hostile-competitive, obsessive, or hysterical. Young et al. (2010) further defines a "schema mode" as an emotional state that is associated with a given schema and can change frequently or be very persistent. The schema therapy approach is modelled on the idea that addressing these modes is more effective than referring to the schemas that underlie them

when dealing with patients with many different and varying schemas. However, the need to better manage more intense and persistent modes was recognized, which lead to the development of the "mode deactivation" concept.

What is mode deactivation?

When an event is encountered or anticipated that the adolescent recalls as traumatic, unconscious cognitions activate an associated fear response, which evokes thoughts that are aligned with the core belief system. Each time a similar event is experienced, the core belief system is reinforced and becomes more entrenched. This mode activation causes responses of the physiological system, affective schema (emotional component), and behavioral schema (expressed behavior). The level of motivation that is evoked, determines the response to eliminate the threat by aggression (attack), or escape from the fear in a non-contact form (avoid).

Mode deactivation is the intervention by which a mode is deactivated before it culminates in an aggressive act or other forms of emotional dysregulation. This intervention takes place in one of four areas, namely the orienting schema or core beliefs, the perception that a fear response is required, physiological system, and anticipation and avoidance of triggers. Instead of disputing cognitions and their underlying core beliefs as wrong or inaccurate—therefore attempting to treat the diagnosis and not the underlying issues—the need was recognized to identify and deactivate the problematic modes through an understanding of the associated core belief system and the beliefs→fears→avoids schema mode.

What is MDT and how was it developed?

With an objective to overcome the shortfalls of cognitive and behavioral therapies in treating the adolescent population with behavioral problems and complex psychopathologies who are considered difficult-to-treat, the theoretical framework and methodology of Mode Deactivation Therapy (MDT) was developed. Elements from Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and mindfulness were combined with a mode deactivation process that are unique to MDT. The two main conceptual distinctions of MDT are the following:

- Problematic schema modes and the core beliefs that underlie them are accepted and validated as a reasonable and realistic coping response to adverse life experiences. Cognitions and beliefs are therefore not disputed as dysfunctional, but recognized as an integral part of the adolescent that must be explored and understood in order to consider functional alternative beliefs that would relieve distress and are better suited to achieving life goals.
- Mode deactivation recognizes the need to understand and manage a broader process than simply treating the cognitive and behavioral symptoms without exploring underlying beliefs and their origins. As part of the case conceptualization process problematic emotions and behaviors are paired with specific fears, avoids, triggers, and ultimately the core belief that is activated in the chain reaction.

Table 1. DESNOS categories

1. Alteration in regulation of affect and impulses	
a. Affect regulation	d. Suicidal preoccupation
b. Modulation of anger	e. Difficulty modulating sexual involvement
c. Self-destructive	f. Excessive risk-taking
2. Alterations in attention or consciousness	
a. Amnesia	
b. Transient dissociative episodes and depersonalization	
3. Somatization	
a. Digestive system	d. Conversion symptoms
b. Chronic pain	e. Sexual symptoms
c. Cardiopulmonary symptoms	
4. Alterations in self-perception	
a. Ineffectiveness	d. Shame
b. Permanent damage	e. Nobody can understand
c. Guilt and responsibility	f. Minimizing
5. Alterations in perception of the perpetrator	
a. Adopting distorted beliefs	
b. Idealization of the perpetrator	
c. Preoccupation with hurting perpetrator	
6. Alterations in relations with others	
a. Inability to trust	
b. Revictimization	
c. Victimizing others	
7. Alterations in systems of meaning	
a. Despair and hopelessness	
b. Loss of previously sustaining beliefs	

Source: Luxenberg, Spinazzola, & Van der Kolk, 2001, p. 375.

By identifying how a real or anticipated situation triggers fears and avoids by activation of the core beliefs, the most appropriate intervention can be conceptualized. As already mentioned, the intervention is planned at the orienting schema level by considering functional alternative beliefs in the specific situation, by addressing the perception of fear, or to anticipate and avoid triggers. Through the case conceptualization, a specific intervention for each problem presentation is developed and planned. It is implemented in the Validation, Clarification, and Redirection (VCR) step, a method that is unique to MDT. Herein, beliefs and their corresponding behaviors are validated as reasonable given the patient's life experiences, and further elucidated where necessary. Functional alternative beliefs, healthy alternative thoughts, functional alternative compensatory strategies, and functional reinforcing behaviors are identified in collaboration with the patient, who commit to consider and test the newfound alternatives.

Why is MDT relevant for adolescents with behavioral problems?

As already referenced, adolescents with a background of abuse and neglect are likely to present with complex comorbid disorders and personality constellations that are both externally and internally manifested and firmly entrenched. These expressions include violent and aggressive behavior, opposition to authority, suicidality, and comorbid substance, and is considered to be one of the most difficult and recalcitrant populations to treat effectively (Alexander, Waldron, Robbins, & Neeb, 2013). It is widely known that the main reasons for this treatment resistance are an unwillingness to accept anyone who resembles authority, denial that there is a problem that can (and should) be addressed, and a deeply entrenched core belief system that supports the dysfunctional behavior. By validating the adolescent's core beliefs and encouraging awareness and acceptance rather than judging and disputing them as being fundamentally wrong, an atmosphere conducive to understanding and mutual respect is created. This approach, which is at the crux of the MDT methodology, has proven to be effective in building a strong patient-therapist alliance in a short time. As previously explained, almost all of the adolescents in this population have multiple DSM Axis-I and Axis-II conditions, including personality disorders that are often deemed as "untreatable" as their pervasive problems and propensity to resist or drop out of treatment interfere with therapy (Dingfelder, 2004). The MDT case conceptualization is highly individualized and collaborative by jointly exploring and pairing each problem behavior with its associated trigger, fears, avoids, and core belief, thereby allowing the therapist to identify and prioritize treatment interfering elements in the treatment plan. Thus, it is the validation concept in the VCR step, pairing behaviors with their underlying core beliefs, and specific individualized and collaborative case conceptualization process in MDT that smooth the path of the working alliance, or collaborative bond, between therapist and adolescent and improve responsiveness to treatment.

Table 2. Most recent MDT research studies

No.	Year	Authors	Sample	*N*	Comment
1	2011	Thoder & Cautilli	Family, residential, sex offenders	39	Independent study
2	2011	Murphy & Siv	Residential, CD and PTSD	20	Independent study
3	2012	Apsche, Bass, & Backlund	Family, residential, CD and aggression	84	
4	i.p.	Swart & Apsche	Family, residential, CD/PTSD, aggression	84	

What has literature already demonstrated about the efficacy of MDT?

In 2010, Apsche, Bass, and DiMeo prepared a comprehensive meta-analysis of MDT studies—individual and family-based—that had been conducted and published at the time. Twenty empirical studies with a combined 458 participants were selected and used for this purpose. The meta-analysis concluded:

"This finding supports the notion that Mode Deactivation Therapy as a superior form of cognitive behavioral therapy addresses not just the acting out behavior, but internal states as well. MDT had a large effect size in all areas of the CBCL and STAXI. As symptoms of externalizing disorders are addressed, internalizing disorders can be addressed. The results of this data—from the [pre- and post-treatment CBCL and STAXI] assessments—confirm the hypothesis that MDT reduces internalizing disorders. It further supports the idea that these internalizing disorders are the behavioral function of the reduced externalizing disorders. Thus, as symptoms of externalizing disorders decrease, internalizing disorders may appear as co-morbid behavioral issues." (p. 180).

Therefore, the meta-analysis confirmed the following:

1. MDT consistently outperforms standard cognitive-behavioral treatments for adolescents with complex trauma-related DSM Axis-I and Axis II constellations that are inwardly or outwardly expressed in dysfunctional ways.
2. CBCL and STAXI results after MDT treatment were consistently and statistically significant lower when compared with baseline pre-treatment scores.
3. Two-year post-treatment follow-up results indicated a less than 7% reoccurrence of aggressive behavior and less than 4% of sexual offending. Various studies found the base rates for adolescent violent recidivism at around 30% and above 10% for sexual recidivism at a follow-up period of between two and three years (Olver, Stockdale, & Wormith, 2009; Salekin, 2008; Carpentier & Proulx, 2011).

Since the meta-analysis, two independent studies were done, which confirmed the conclusions of previous studies that MDT consistently achieved better treatment outcomes than treatment as usual and delivered impressive results compared to the pre-treatment baseline of the adolescent sample (Thoder & Cautilli, 2011; Murphy & Siv, 2011). Subsequently, two other larger family-based MDT studies by the author also confirmed the same positive results (Apsche, Bass, & Backlund, 2012; Swart & Apsche, in press). The specifics of the most recent MDT research studies are summarized in Table 2 above.

Table 3. Participant profile (*N* = 143)

Diagnostic - axis 1	
Conduct	47%
Oppositional defiant	60%
PTSD	62%
Major depression	38%
Diagnostic - axis 2	
Borderline	31%
Antisocial	25%
Narcissistic	22%
Dependent	27%
Avoidant	29%
Mixed	54%
Ethnicity	
African American	51%
European American	45%
Latin American	4%
Age	
14-year	10%
15-year	10%
16-year	50%
17-year	30%
Abuse history	
Physical	52%
Sexual	50%
Neglect	80%
Emotional/verbal	85%

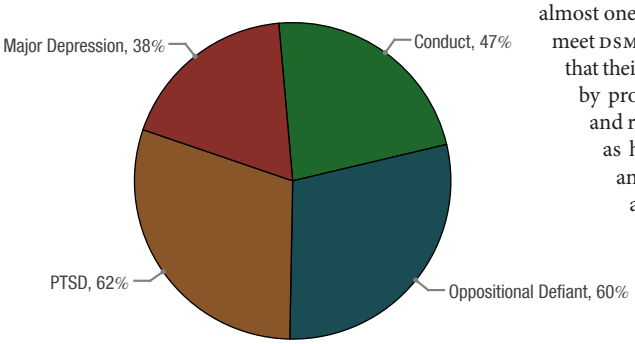

Figure 1. Participant diagnostic axis-1 profile

In conclusion, family-based and individual MDT continues to demonstrate great potential for the treatment of adolescents with behavioral problems and complex psychopathologies and should be proliferated in practice to manage this costly problem better. The current study provides yet an additional resource that corroborates the efficacy of MDT.

■ Research method

This was a randomized controlled treatment research study comparing MDT and CBT in a residential treatment facility. Data were collected at pre-treatment and post-treatment stages. Participants were male adolescents who were mandated to treatment. The participant characteristics are described in Table 3 on the left.

Participants

All participants who were received on a rolling basis at the functional treatment clinic in Virginia were legally mandated by the court or Department of Youth and Family Services (DYFS) to receive treatment. As such, they were not allowed to discontinue or withdraw from treatment. They were informed and consented to participating in a research study at intake. The 143 adolescent male participants were randomly assigned to the MDT treatment group or the control group that received a standard CBT treatment. Inclusion criteria were (1) adolescent males between 14- and 17-years, (2) problems with aggression, conduct, and opposition that are not considered "severe" or to present an imminent high level of risk, and (3) functioning within the "normal" range of intelligence and no active psychotic symptoms. The participant profile is given in Table 3.

On average and in general, all participants were diagnosed with Conduct Disorder (CD), Oppositional Defiant Disorder (ODD), or mood disorders. Almost all experienced some form of childhood abuse, while nearly two-thirds presented with symptoms of Posttraumatic Stress Disorder (PTSD). Personality disorders, ranging across DSM categories of borderline, antisocial, narcissistic, dependent, and avoidant criteria, were common. A sizable number of participants (54%) were diagnosed with mixed personality disorder. The diagnostic breakdown is indicated in Figure 1 below. There is little doubt that severe childhood adversity increases risk of early onset behavioral, mood, and personality disorders co-occurring with PTSD (Brady & Back, 2012). Furthermore, Kerig and Becker (2012) reported that almost one-third of boys in detention settings meet DSM criteria for a diagnosis of PTSD and that their delinquent behaviors are underlain by problems with emotional processing and regulation, cognitive processes such as hostile attributions and alienation and interpersonal processes such as antisocial peers, negative dyadic relationships, and negative social exchanges. Childhood cumulative trauma is also positively linked with symptom complexity (Cloitre, Stolbach, Herman, Van der Kolk, Pynoos, Wang, & Petkova, 2009), and dimensional symptom

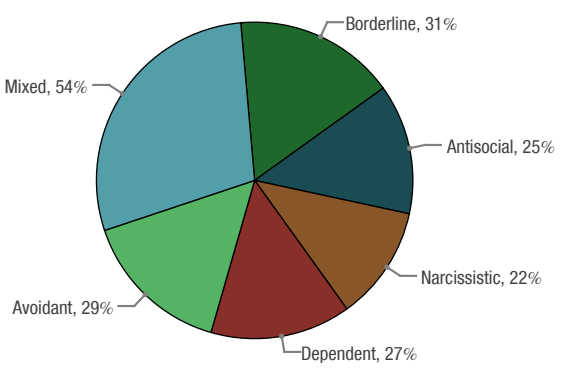

Figure 2. Participant diagnostic axis-2 profile

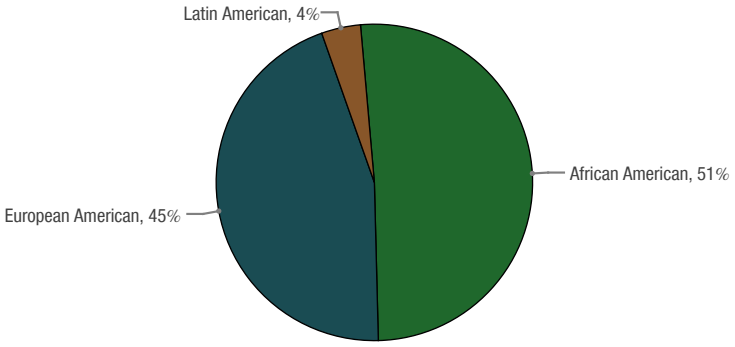

Figure 3. Participant racial and ethnic profile

models (Asmundson, Frombach, McQuaid, Pedrelli, Lenox, & Stein, 2000). As expected, a high presence of DESNOS criteria (see Table 1 on page 24) is found among the adolescent sample, which indicates that dysfunctional behavioral expressions are preceded by inappropriate schemas that are the coping mechanism in response to childhood trauma. The complex comorbidity of the adolescents' psychopathology, including comorbid DSM Axis-I and Axis-II conditions, are also typical of early abuse or neglect.

The diagnostic DSM Axis-II profiles illustrated in Figure 2 above are also typical of the personality constellations that are associated with distressed youth. All participants have comorbid Axis-I and Axis-II conditions, while more than one-half (54%) of the sample qualify for a mixed personality diagnosis, with the others satisfying clinical criteria in relatively equal percentages for Borderline, Antisocial, Narcissistic, Dependent, and Avoidant Personality Disorders respectively. This relatively spread-out and clustered personality diagnoses in the participant sample are typical among adolescents who experienced childhood abuse and neglect. As discussed previously, it is expected that personality constellations generally tend to orientate into different dimensions of internalizing and externalizing expressions (Bradley, Heim, & Westen, 2005; Blagov, Bradley, & Westen, 2007). Although such schemas likely have a single fundamental orientation, it may also be expressed in the opposite direction as a fear response or an avoidance reaction. To clarify further: A distressing internalizing state can be externalized as a dysfunctional behavior such as verbal or physical aggression. This level of complexity in the adolescent population with behavioral problems is suitably addressed in MDT by the case conceptualization whereby a deeper understanding is created of the internal-external dynamics and applied in the VCR process, as described before. Figure 2 above illustrates the variety and level of overlap of personality disorders in the participant sample.

The demographic profile of the participants are only indicated in terms of racial and ethnic profile (Figure 3), and age (Figure 4). African Americans formed the largest group by a small margin (51%), ahead of European Americans (45%), and a small representation of Latin American participants (4%).

According to the age profile in Figure 4, one-half of the participants were 16-year-olds, with smaller numbers of 17-year-olds (30%), 14-year-olds and 15-year-olds at 10% respectively.

Figure 5 indicated the history of abuse that the participants were subjected to. A high number experienced emotional/verbal abuse (85%) and/or neglect (80%), while about one-half had a history of physical (52%) or sexual (50%) abuse. From the breakdown we can reach the conclusion that at least two-thirds, but possibly as many as 90% of the participants, have been subjected to three or more types of abuse. As previously explained, these profiles are associated with PTSD symptoms, personality disorders, and regulation, internalizing and externalizing problems, which is the adolescent population that MDT was specifically developed to treat.

In summary, the salient points of the profile information are that the male adolescents, 14- to 17-year-old, present with multiple overlapping DSM Axis-I and Axis-II disorders and personality constellations that are likely a result of prolonged domestic-related trauma. This seems to be a population that is most in need of an effective treatment, and yet another MDT study is hereafter analyzed to confirm the positive treatment outcomes previously reported.

Research design

The participants, who were all mandated for treatment, were randomly assigned to the MDT experimental group or the CBT control group, depending on the therapist availability at their time of intake, which happened on a rolling basis at the continuously functioning residential facility. Participants were assessed at intake with the Child Behavior Checklist (CBCL), State-Trait Anger Expression Inventory (STAXI-2), Behavioral Rating Scale (BRS), Compound Core Belief Questionnaire (CCBQ), and MDT Fear Assessment instruments. The BRS used in this study was a simple frequency and duration reported data card recorded by staff. Supervisors did 3 one-hour behavior reliability checks per day for inter-rating reliability, which was 95%. The CCBQ and Fear Assessment questionnaires are specific to the MDT methodology and consist of 96- and 60-item multiple choice questions respectively. Adherence to treatment integrity for each respective approach was monitored by supervisors by observation, review of the case conceptualization, and a compliance checklist. The same assessment measures were again administered after treatment completion. All the participants were mandated for treatment and could therefore not drop out before completion, but they consented to participate in the research.

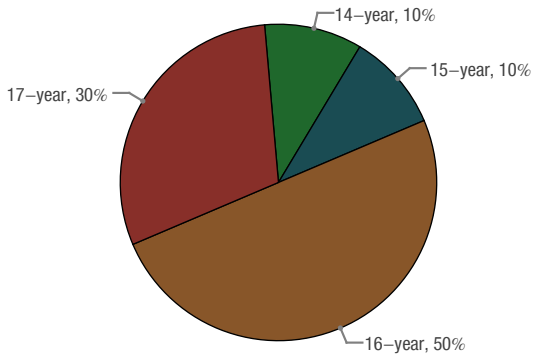

Figure 4. Participant age distribution

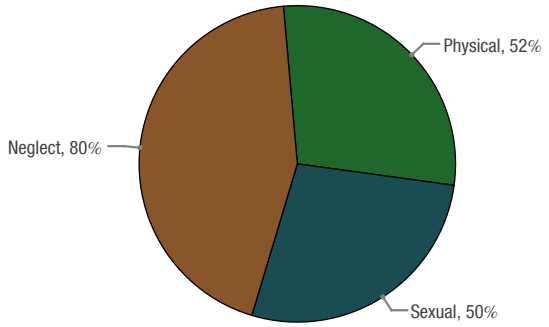

Figure 5. Participant childhood abuse experience

Table 4. MDT versus TAU pre- and post-treatment results

		Intake				Posttreatment				Differential			
		MDT		CBT		MDT		CBT		MDT		CBT	
Variable	Items	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
STAXI-2	44												
Anger in		48.7	6.1	47.2	9.1	31.5	7.0	46.1	10.0	15.2	6.8	1.3	11.1
Anger out		49.1	7.2	48.1	8.7	30.7	9.0	45.2	9.7	8.2	7.5	3.1	10.3
Anger exp index		50.1	8.1	49.2	8.4	30.1	8.0	45.9	12.2	20.0	10.1	9.3	12.3
CBCL	96												
Internalize		76.7	10.1	75.1	7.1	49.1	7.1	71.5	10.1	26.6	7.3	3.6	9.1
Externalize		77.4	9.4	76.6	12.2	48.1	9.2	73.4	9.4	29.3	8.1	3.1	10.1
Total		77.6	8.2	75.9	9.4	43.6	8.3	72.5	10.3	33.8	9.3	3.3	10.3
Fear ass.	60	180.0	10.2	176.0	11.2	109.0	10.1	172.0	10.3	71.0	12.1	3.0	11.4
CCBQ	96	186.0	12.0	141.0	10.0	101.0	9.3	138.0	6.7	85.1	10.7	5.1	12.3
BRS		24.0	2.0	23.0	4.0	3.0		20.0		21.0		3.0	

Results

The details of the respective MDT and CBT group results at pre- and post-treatment for all the assessment measures are given in Table 4 above. At a first glance, it is already evident that MDT outperformed CBT by a statistically significant margin across all measures. The pre-treatment baseline scores for MDT and CBT respectively were quantitatively similar, which means that an outcome comparison is valid. MDT outcomes showed a consistent and substantial improvement when compared with baseline pre-treatment scores. MDT post-treatment scores were better than at pre-treatment with a mean of 3 times standard deviation (SD), while CBT post-treatment scores did not improve significantly (mean of 0.1 times standard deviation).

The Cohen's *d* effect sizes are indicated in Table 5 below. Cohen's *d* is defined as the difference between two means (experimental and control group) divided by the standard deviation for the data:

Cohen (1988) defined effect sizes as small (0.2–0.5), medium (0.5–0.8), and large (0.8 and above). Effect sizes measure the magnitude of a treatment effect and are independent of sample size, therefore emphasizing the size of the difference rather than confounding this with sample size, which is especially useful in social science research studies as it often has limited samples sizes.

Overall, the MDT effect sizes are on average 17 percentile points higher than the CBT effect sizes, which is an indication of the significance of the MDT outcome change. The mean *d* for MDT is 1.79—considered a large effect size with a 96.3 percentile standing and 77.2 percent of non-overlap—while the mean *d* for CBT is 0.79—considered a medium effect size with a 78.7 percentile standing and 47.0 percent of non-overlap. The most significant treatment effects are found in the STAXI-2 and BRS scores, while the internalizing and externalizing problem scales have the least significant treatment effects, although still large for MDT (87 and 89 percentile standings respectively). Although all reasonable effort was taken to ensure that the BRS rating is valid and reliable, it remains a subjective variable that is based on therapist observation, interpretation, and recording of patient behavior. The three broad-band scores—internalizing, externalizing, and total problems—were considered with the CBCL. The internalizing scale is comprised of items from the Withdrawn, Somatic Complaints, and Anxious/Depressed scales, while the externalizing scale consists of items from the Delinquent and Aggressive Behavior domains. The CBCL, as a caregiver-reported measure, is susceptible to measurement bias—especially when comparing youths from different developmental stages and ethnic groups—and is therefore expected to generate a wider distribution of scores. The Anger Expression Index (AX), Anger Control-Out (AX-O), and Anger Control-In (AX-I) scales were used with the STAXI-2 measurement. AX is the overall measure of total anger expression as the expression of angry feeling toward other persons or objects in the environment, or by suppressing these feelings. AX-O reflects the patient's

Table 5. Cohen's *d* effect sizes

	Cohen's *d* effect sizes	
Variable	MDT	CBT
STAXI-2		
Anger in	1.84	0.80
Anger out	1.85	0.78
Anger exp index	1.86	0.79
CBCL		
Internalize	1.15	0.61
Externalize	1.26	0.63
Total	1.79	0.62
Fear ass.	1.36	0.81
CCBQ	1.44	0.79
BRS	1.91	0.91

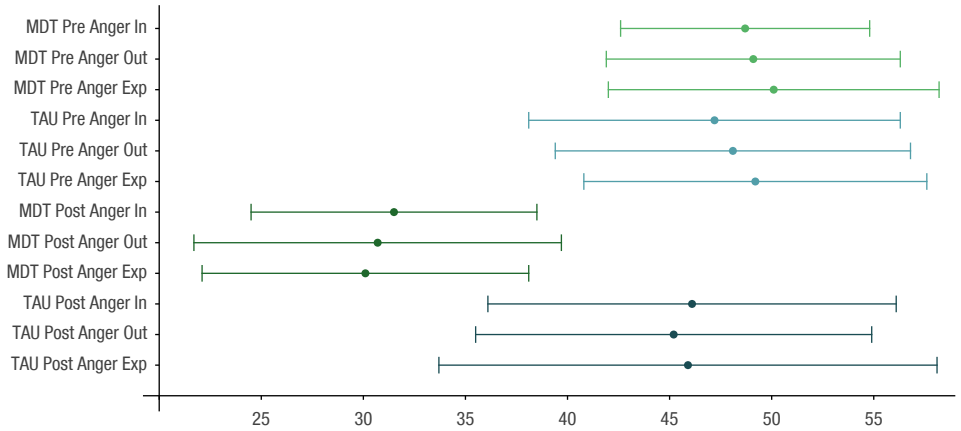

Figure 6. STAXI results comparison

control of angry feelings by preventing the expression of anger toward other persons or objects in the environment, while AX-I measures the control of suppressed (inwardly directed) angry feelings by calming down or cooling off (Spielberger, 1999). The STAXI-2 is a self-report measure, and therefore response bias could occur. Nevertheless, the result patterns—as indicated by the large effect size—remain sufficiently significant and consistent to support outcome results. Figures 6 to 9 are graphical chart representations in terms of the SD-mean bars of MDT and CBT pre-and post-treatment results for all measures. Pre-treatment results are indicated by bars on the left side of each chart, and post-treatment results are indicated by bars on the right side. Hereby a quick and easy visual illustration is made of MDT and CBT comparisons, pre- and post-treatment comparisons, and confidence levels of each in terms of standard deviations.

Figure 6 displays results of the STAXI-2 in terms of the three scales that were used, namely Anger Expression Index (AX), Anger Control-In (AX-I), and Anger Control-Out (AX-O). As expected with a randomly assigned and relatively large sample size, and indeed the case in general with pre-treatment scores, MDT and CBT (TAU) mean and standard deviations are similar. Whereas the CBT post-treatment scores cluster shows an insignificant change from the pre-treatment scores, MDT shows a marked improvement. Standard deviations remained approximately similar. On average, STAXI scores for MDT improved by 37.6%, and those for CBT 5.0%.

The CBCL results comparison paints a picture that is almost the same as the STAX results. Again, MDT and CBT (TAU) pre-treatment scores are statistically alike. The average CBT treatment change was insignificant at 4.4%, while the average MDT improvement was 39.2%, with the CBCL total problem showing the largest change at 43.7%. Standard deviations again remained largely the same.

The Compound Core Belief Questionnaire (CCBQ) and Fear Assessment questionnaire are two MDT specific instruments with 96-item and 60-item four-point Likert scale self-report questions respectively. The Fear Assessment pre-treatment scores for the MDT and CBT (TAU) groups are similar, but the CCBQ pre-treatment scores differ significantly (24%). The difference is in the same order as a one-point response shift, but cannot be explained and is noted as an anomaly. For both the fear assessment and CCBQ, CBT scores improved by 2.3% and 2.1% respectively, while the corresponding changes for MDT are 39.4% and 45.7%. Standard deviations again remained roughly the same across pre- and post-treatment measurements.

The means for the MDT and CBT (TAU) groups differ by a single point on the pre-treatment Behavior Rating Scale (BRS). Standard deviations are not available for post-treatment results, but a similar treatment change effect is observed than with other measures. On average, the CBT group improved by 13%, which is the largest change measure for this group, but is possibly an effect of the relatively small baseline number. Reported events of aggressive behavior was almost eliminated by completion of treatment of the MDT group, which represents an 87.5% reduction compared to before treatment.

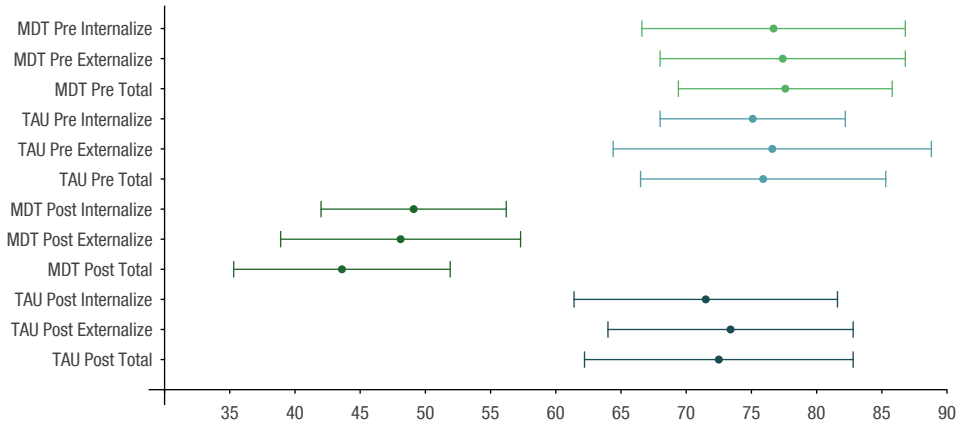

Figure 7. CBCL results comparison

■ Discussion

A consistent and significant improvement is observed across all assessment measures for the MDT experimental group. An overall treatment change effect of 45% was achieved—39% if the BRS score change is excluded—which represents more than four standard deviations. It is undisputable that this is a statistically significant positive outcome in improving patients' conditions by MDT in all dimensions, such as aggressive behavior, internalized problems, fears, and dysfunctional beliefs. In comparison, the CBT group experienced on average only very small changes, less than 5% or one-half of a standard deviation, which implies a significant statistical overlap. It is also important that the MDT improvements were consistent, and seems repeatable in the context of results from previously published MDT research studies. The results are even more meaningful and substantial if seen in the context of an adolescent population that is widely considered as difficult-to-treat, but with large direct and indirect cost implications. Together with the results already available in the literature, the validity and utility of the MDT seem conclusive. Adolescents with internalized and externalized behavior problems, complex trauma-related psychopathologies including developmental disorders and PTSD and comorbid multiple personality disorder traits, are effectively treated with the MDT methodology that is individualized and specialized for this purpose. Consistent outcome results and statistically significant improvements that appear to be durable, contribute to the evidence that MDT is a valid and reliable treatment method with high utility for adolescents with dysfunctional behavior.

■ Conclusions and implications

In general very little is known about the components that bring about treatment change effects in psychotherapy. Given the consistent and significant positive results that MDT research studies have proven, it would be meaningful to explore the effect of individual components during the treatment process. A carefully designed component analysis could isolate the Validation-Clarification-Redirection (VCR) step that is unique to the MDT methodology to determine the effect and functioning of its change mechanism. Such a deeper understanding would be very useful for the proliferation and refinement of MDT, as well as for other psychotherapies and other populations in general.

An update and reanalysis of the MDT meta-analysis will also add value by increasing the combined research studies and corresponding total sample size. The addition of recent and independent results will contribute to the empirical evidence that MDT is *ultra omne dubium* (beyond all doubt) an effective cognitive-based treatment for problem adolescents that is deserving of wider practical significance. The proposed component analysis study and meta-analysis will set the stage for a multi-center, independent, controlled MDT trial for adolescents with behavioral problems.

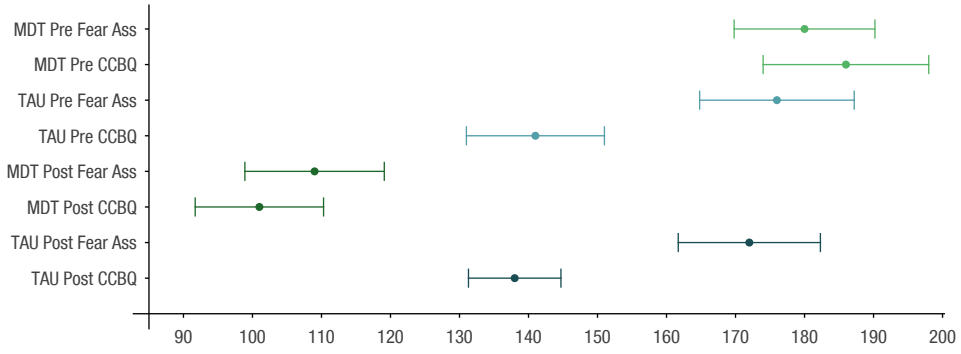

Figure 8. CCBQ and fear assessment results comparison

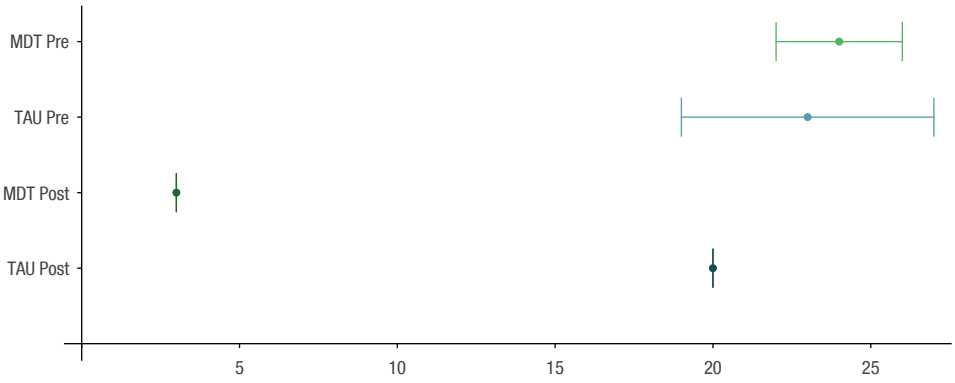

Figure 9. BRS results comparison

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Family mode deactivation therapy (FMDT) as a contextual treatment

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Abstract

Mode Deactivation Therapy (MDT) was developed as a third wave therapy approach to cater for the challenging population of adolescents with conduct and oppositional behavior problems, emotion dysregulation, physical and sexual aggression, and other complex comorbid psychopathologies. The theoretical construct of MDT is based on the Beck's Mode Model and the principles of Cognitive Behavioral Therapy with elements of Functional Analytic Psychotherapy (FAP), Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and mindfulness. The methodology is based on the fundamental proposition that core beliefs based on an individual interpretation of past experiences regulate thoughts, emotions, and feelings when activated by a trigger event. This may lead to aberrant behaviors when cognitive processes are distorted. MDT has proven very successful in practice to balance the dichotomous thinking of the client by exploring positive alternatives on a continuum and realigning perceptions. Family MDT (FMDT) is especially valuable in a family therapy context as the family unit's experiences and interactions inarguably have an integral influence on the youth's beliefs and behavior. MDT is a structured and sequential process, although sufficiently flexibility to utilize continuous feedback loops to optimize the case conceptualization and treatment plan. Evidence is provided to support the claim that MDT is superior to Treatment as Usual (TAU) in treating the target population in an outpatient and residential setting with their families.

Keywords

Mode Deactivation Therapy, MDT, mindfulness, ACT, DBT, CBT, adolescent, schema, family therapy, FMDT

Adolescent behavioral and conduct problems are widely associated with family-based issues such as marital problems, parental absence, domestic violence, substance abuse, child neglect and maltreatment, including physical and sexual abuse. Besides externalized problems such as aggression, violence, and criminal behavior, distress is also often internalized by the youth, causing anxiety, depression, substance abuse, social withdrawal, and suicide ideation. Furthermore, early onset of psychopathological symptoms is inarguably correlated with maturing persistent mental health problems in adulthood including depression, addiction, posttraumatic stress disorder (PTSD), personality disorders, as well as escalating criminality (Scott, Smith, & Ellis, 2010; Spataro, Mullen, Burgess, Wells, & Moss, 2004).

Earlier—pre-third wave—therapeutic approaches were either past- and disease-oriented (first wave therapies such as psychoanalysis and psychodynamic work), or exclusively present- and problem-oriented (second wave therapies such as behavioral, cognitive, and gestalt approaches). More recently there has been a move away from a focus on pathology and illness—problems instead of solution—and the clinician's role became more collaborative and expertly. In the late 1950s and early 1960s, Albert Ellis and Aaron Beck started to realize that traditional psychoanalytic therapies lacked a focus on conscious thought and belief processes, which they deemed central in guiding emotional experience and behavior. From there behavioral techniques were incorporated in the cognitive therapy methodology and became known as Cognitive Behavioral Therapy (CBT), the underlying basis of third wave derivative approaches.

In the early 2000s Dr. Jack Apsche recognized shortcomings in cognitive behavioral approaches, especially pertaining to persistent and complex psychopathology presentations among adolescent populations. The main areas of concern were the focus on problems and dysfunction of the client seen as caused by faulty thinking, strong present orientation, and negation of unconscious thought processes and triggers. As a result Mode Deactivation Therapy (MDT) was developed by using CBT as a point of origin and incorporating elements and concepts from various other approaches and techniques, such as Functional Analytic Psychotherapy (FAP), Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and mindfulness. MDT, as a "young" and developing therapy, has already demonstrated remarkable successes among troubled adolescent populations in individual and family settings, while much more potential scope exists to harness the methodology further—as I believe this work will clearly show.

Core concepts of family mode deactivation therapy (FMDT)

Mode Deactivation Therapy in family settings, or FMDT, utilizes several key concepts obtained from theorists and other therapeutic approaches that were adapted and incorporated into a treatment methodology to address the target population of adolescents with behavioral and conduct problems, which are often associated with comorbid child-onset mental health conditions and trauma-related distress. The three core concepts of experiential avoidance, defusion, and mindfulness are discussed below.

Experiential avoidance

Greco and Hayes (2008) viewed experiential avoidance as the opposite of acceptance, while it is also associated with behaviors that are inconsistent with personal values and goals (Bond, Hayes, Baer, Carpenter, Guenole, Orcutt, Waltz, & Zettle, 2011), persistent distress symptoms, and treatment interference (Hayes, Orsillo, & Roemer, 2010). O'Brien, Larson, and Murrell (2008) defined experiential avoidance as the situation that occurs when an individual is either unwilling or too fearful to remain in contact with painful emotions, situations, thoughts, or memories. Hayes, Wilson, Gifford, Follette, and Strosahl (1996) explained this process as a lack of acceptance of private events—an individual's thoughts and perceptions of happenings—as they occur in an uncontrolled and an unregulated manner. A lack of acceptance precedes emotional dysregulation, which is the inability to respond appropriately in a socially acceptable and flexible way to the demand of experience (Cole, Michel, & O'Donnell Teti, 1994). A frequent failure to regulate emotions are typically associated with childhood traumatic experiences such as child abuse and maltreatment and results in a rise in psychosocial and behavioral dysfunctions (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003). Experiential avoidance, a related coping mechanism, acts as a generalized psychological vulnerability by increasing PTSD and other symptoms and dysfunctional behavior in children as they attempt to avoid painful thoughts, emotions, memories, and physiology (Shenk, Putnam, & Noll, 2012; Kashdan, Barrios, Forsyth, & Steger, 2006)).

A deeper understanding and appreciation of the effects of emotional regulation and experiential avoidance in children had a profound effect on the development of new treatment methodologies. Given the growing evidence of the importance of emotion regulation to counter experiential avoidance in positive interaction with the self and others, third wave therapy approaches were developed with the endeavor to facilitate a dynamic flexibility in emotional insight and experience, and the ability to pursue goals by selectively activating emotions and cognitions (Diamond & Aspinwall, 2003). Cognitive behavioral therapies (CBT) form the basis of these modern approaches, which include CBT derivatives such as Acceptance and Commitment Therapy (ACT), Dialectical Behavior Therapy (DBT), and Functional Analytic Psychotherapy (FAP). Third generation CBT therapists recognized that it is not only the content of thoughts that are important, but also underlying processes and context. Hayes (2004) explained:

> *Grounded in an empirical, principle-focused approach, the third wave of 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 of 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 improving both understanding and outcomes. (p. 658).*

The most pressing issue was that cognitive therapies did not sufficiently appreciate the complexity of schemas and how they relate psychological responses to core beliefs formulated by past experiences. Mode

Deactivation Therapy (MDT) was developed from theory to practice to overcome the shortcomings that could be related to the top-down approach of cognitive therapies. MDT approaches adolescent behavioral problems from the view that the client experiences fear when an external demand is in conflict with a core belief. Therefore, MDT conceptualizes avoidance from a fear-avoids paradigm in which the adolescent avoids what he or she fears. Apsche & DiMeo (2012) explain experiential avoidance as a result of the adolescent responding to his or her fear(s). The fears and core beliefs of the client are identified and correlated in the context of his past experiences. These are organized in a beliefs-triggers-fears-avoids-behavior conglomerate, which are validated and explored with the client to produce positive alternatives.

Defusion

Acceptance and Commitment Therapy (ACT) refers to defusion as a weakening of the literal, evaluative function of language; that is, separating the "words" from the emotions. According to the Relational Frame Theory, the social community establishes a context in which thoughts are equated to a literal meaning that results in focused emotional and behavioral regulations (Luoma & Hayes, in press).

Instead, MDT looks at defusion as two separate events: emotional defusion and cognitive defusion (Apsche & DiMeo, 2012). The approach targets emotions associated with avoidance-based cognitions through emotional defusion; the process that evolves from a sense where the emotional pain and feeling is located in the body. Cognitive defusion helps the adolescent de-escalate (defuse) the effect of his or her emotionally laden thoughts. This is based on the hypothesis that the power of the adolescent's avoidance is based both in language and in emotion (fear). Therefore, defusing the power of language cognitions and emotions is part of the MDT methodology and by extension the Family Mode Deactivation Therapy (FMDT) methodology also. The process of defusion allows the adolescent as well as his family members the opportunity to experience the thoughts and feelings that have created avoidance so that the youth can accept them as a valid part of himself or herself.

Mindfulness

The practice of mindfulness permeates ACT treatment, from clinicians to clients. The concept of mindfulness originated from several key Early Buddhist psychological notions, including basic drives that motivate behavior, perception and cognition, consciousness, personal development and enlightenment, meditation, and behavior change. In the context of therapy, mindfulness is the focusing of attention and awareness on purpose in the present moment and in a nonjudgmental way in which each thought, feeling, or sensation that arises is acknowledged and accepted as a valid experience (Baer, 2003; Bishop et al., 2004). In their book, titled "Acceptance and Mindfulness Treatments for Children and Adolescents: A Practitioner's Guide", Greco and Hayes (2008) highlighted the efficacy of using mindfulness in treating adolescents. The authors claimed that individuals who voluntarily begin a mindfulness practice often have a "beginner's mind"—that is, they are open and ready to learn (receptive), enthusiastic, and not cynical. Furthermore, compared to adults, children are thought to have an advantage as they have had less opportunity to develop persistently resistant and interfering behaviors and related psychopathologies (Greco, Blackledge, Coyne, & Ehrenreich, 2005).

Unfortunately, adolescents who engage in MDT treatment are oftentimes oppositional and cynical. Nonetheless, MDT is grounded in a mindfulness-based methodology with a strong and open therapeutic alliance based on validation to manage resistance; mindfulness is to be fully present in the moment, without judgment. It is also highly recommended that the clinician has a personal mindfulness practice in order to be successful when treating youth with MDT. High-mindfulness clinicians tend to have a greater patient-centered pattern of communication, engage in more rapport building and mutual discussion, and display more emotional tone with patients (Beach et al., 2013). Woods (2013) agrees, stating that mindfulness training and practice will increase the practitioner's effectiveness in managing individual and group processes, "encourage and support interpersonal skills such as warmth, acceptance, compassion, and respect alongside appropriate professional and personal boundaries" (p. 470).

These are all vital skills in dealing persuasively with defiant and otherwise treatment resistant adolescents. In their mindfulness toolkit, Apsche and Jennings (2013) suggested a variety of mindful and meditation practices for adolescents and their families as an adjunct to treatment, to be crucial for individual and family participants. Practice has shown that mindfulness concepts practiced by the clinician openly and honestly according to the toolkit's guidelines will positively transfer to even the angriest adolescent or distant family because they become a collective of focus in the moment, not the past or the future.

FMDT treatment methodology

FMDT, as a contextual therapeutic methodology, is structured in a manner that provides an effective framework for adolescent and family treatment. Although it is a therapeutic framework, FMDT, much like MDT treatment, is never linear or "cookbook" in nature as will become more evident when other components of MDT presented throughout these guidelines are incorporated. There is a well-defined similarity in the use of mindfulness, acceptance, and defusion between ACT, MDT, and FMDT as well. Where ACT uses acceptance and mindfulness alongside commitment and behavior change strategies to help clients learn how to manage and diminish the effect of thoughts, feelings, memories and physical sensations that caused them fear or distress, MDT takes the cognitive defusion presented in ACT and adds emotional defusion to complete the process (Apsche, 2010; Apsche & DiMeo, 2012). MDT also continues to explore the use of mindfulness, breathing, and imagery as time in treatment progresses. It uses these mindfulness practices to develop trust and a collaborative alliance between clinician and the family unit, which is imperative and arguably the most important factor in achieving treatment effectiveness and success.

The FMDT treatment approach is logically arranged in structured and sequential steps to improve the therapeutic alliance, treatment target selection and plan. The steps are, in order:

1. Informed Consent
2. Mindfulness
3. FMDT Assessments (Family Typology Survey, Family Behavior Scale, Fear Assessment, Compound Core Beliefs Questionnaire, Family Conglomerate of Beliefs and Behaviors, Family Fears, Triggers, Avoids, and Beliefs)
4. Case Conceptualization
5. Validation, Clarification, and Redirection

The individual steps of the FMDT process are now described in more detail.

Informed consent

The process of informed consent is a vital component in modern mental health practices and is mandated by the professional and ethical guidelines of most psychological associations such as the American Psychological Association (APA). Although legally and professionally required, the informed consent process can be very valuable in establishing a professional relationship with the client and his family or guardian and an early start of a strong therapeutic alliance built on trust and openness. Before commencing with further steps, discuss the process, objectives, limitations, and privacy issues with the client and his family. Ask questions and ensure that all participants have a good understanding of expectations. Obtain written consent from the adolescent, parent or guardian, and other family members who will be participating.

Mindfulness

The real practice of mindfulness by the FMDT clinician becomes a great bridge to building an effective, collaborative relationship with the adolescent and the family. One easy way to begin is by engaging the family in simple breathing exercises. The family is then joined in each breathing and mindfulness exercise by the clinician. These are simple exercises designed to build upon each other (Apsche & Jennings, 2013) to create an intense awareness of the present moment and encouraging acceptance of the self and others without judgment.

The following descriptions will aim to recreate—and guide the reader in—the experience of family mindfulness and awareness. The first exercise is intended for both the clinician and the entire family. It is suggested that the clinician practice it individually prior to implementing it with the family as a way to increase his or her understanding of and comfort with mindfulness to ensure that it is more effective for the family in practice. This basic exercise helps the individual and collective family member become more aware of their thoughts, feelings, and even physical sensations, acknowledge, and to let go of them as they don't define who you are. Developing self-awareness is the first step in becoming more

aware and empathetic to others' feelings and emotions. It is important not to fight any thought, feeling, or sensation, not to judge it as "good" or "bad", but just let it pass without lingering. The following exercise consists of three parts: awareness, description, and redirection. Let all participants sit in a comfortable position to begin.

1. ***Awareness.*** Ask the family to observe and notice their surroundings. Ask them to pay attention to each of their surroundings, different body sensations, what they are thinking and feeling. Are they worrying about tension in the family, anger, sadness or the dysfunction of the family in general? Just ask them to notice what they feel as their body or notice about what they are feeling, their breath or breathing patterns.
2. ***Describe.*** Put your observations into words and say how each of them feels. Ask them to start by asking them what they see: describe the "scene" that you are seeing in each of their minds. What or whom are each of them thinking about? Does this "scene" make them feel positive or negative, anxious or excited? If you don't want to say it out loud, write it down quietly!
3. ***Redirect yourself.*** Slowly ask each family member to redirect their attention to your breath. Follow your breath—see your breath as a circle…in…and…out…
   Breathe in…count and visualize one…
   Expand yourself…
   Repeat five times…
   Then slowly ask them to…
   Expand their attention to their whole body…
   Try to sense any discomfort, tension, or resistance…
   Just ask them to feel whatever they feel…breathe in…breathe out… in…out…
   Allow them to feel whatever they feel without restraint or judgment…
   Ask them to each become aware of their feelings…
   Stay with it with the family as a group until everyone is still then…
   You have experienced a piece of mindfulness and awareness.

After completing this exercise and re-alerting yourself, notice your feelings and emotions. Do you feel more relaxed, calmer, and more alert? Sometimes, taking a moment to yourself, like in the previous exercise, can renew your energy and enthusiasm for life. Developing balance in your own life can assist you when working therapeutically with angry, aggressive, and oppositional adolescents.

FMDT assessment process: sequence, scoring and Interpretation

To reiterate: FMDT does not apply a "cookbook" formula as every client and his family is unique. Therefore it follows that treatment is individually developed for each family through the Family MDT assessments, of which all are either hand scored or scored by computer at The Apsche Institute. Because the scoring and interpretation complexity increases with more participants, the computerized scoring method is preferred for family assessments, as well as for ease of information sharing in the group. The computerized scoring is color-coded and it gives the family members the opportunity to view their scores individually and as a group by using the color-coded distinctions. As such it is possible for each family member to view exactly how and where they differ on all assessment domains, as well as how each member differs from the family mean scores as a group or individually on all FMDT assessments.

1. Family Typology Survey: A full diagnostic, behavior, medical, and health history.
2. Family Behavior Scale: A review of the youth's and family's behavior.
3. The Family Fear Assessment: An assessment of 60 items that identifies basic difficulties, anxieties, or fears of the family. Each family member participates in completing the assessment, the scores are totaled, and a mean score is determined for each item.
4. The Family Compound Core Belief Questionnaire: An inventory of 209 (standard version) or 96 questions (short version) related to the family's belief systems. The Family Compound Core Belief Questionnaire (CCBQ) is scored in the same manner as the Family Fear Assessment.
5. The Functionally Based Treatment Development Form: This form addresses the collective family beliefs and supplies the family a specific methodology to develop and maintain more functional family beliefs. It consists of the Family Conglomerate of Beliefs and Behaviors form, and the Family Triggers, Fears, Avoids, and Behaviors diagram.

Family typology survey. As highlighted in a previous paragraph, the case conceptualization process follows from the analysis of the FMDT assessment battery. The MDT treatment process is implemented according to the framework of a comprehensive case conceptualization that is obtained through the assessments, of which a structured diagnostic interview called the Family Typology Survey is the first step. This survey allows the clinician to develop an understanding of the client's behavioral and family history, and incorporates a detailed inventory of traumatic events. The Family Typology Survey is conducted with the child, guardian, and referral source, with each individual providing a response to every question. The survey consists of sections that explore family relationships, substance abuse, medical, and educational history, emotional, physiological, interpersonal, and social responses and habits, sexual offending, physical and sexual abuse, neglect, trauma, and expectations of the treatment—especially pertaining to the client, but also those of family members that may ultimately have an effect on the client's behavior. Responses from each participant is compared to corroborate, elaborate, and complete missing information.

Family behavior scale. Further individual assessments are determined by responses to the Typology Survey and the acuity of the adolescent's behavior problems. MDT uses a continuum to measure reactive to proactive responses on a successive scale of 1 to 10. The family behavior scale is not a set question set, but rather emanates from issues that are highlighted by the Family Typology Survey. As an example: for a family where substance abuse issues are evident from their survey, sample questions may be the following:

On a scale from 1 to 10, how much does your family believe substances are a problem for each of you?

1	2	3	4	5	6	7	8	9	10
NONE									MUCH

How much does your family believe that substance abuse was involved in all of your problem behaviors?

1	2	3	4	5	6	7	8	9	10
NONE									MUCH

The family behavior scale offers a quick interpretation of the family's behavior patterns, indicating if they are impulsive or planned, and what each participant's perception is of the extent of the problem and the influence on behavioral and other problems. This offers valuable information for the clinician prior to the administration of the Family Fear Assessment and Family Compound Core Belief Questionnaire (CCBQ).

Family fear assessment scale. The Fear Assessment is the basic instrument that addresses the individual family member's problems with anxiety, fear, and PTSD. There are five different assessments to choose from based upon the perceived openness of the adolescent and the family. If it is clear that there is no amenability to treatment and there is evidence of multiple antisocial beliefs, the 'Others' series of assessments are appropriate. For more anxious and traumatic stressed families, the Fear-R assessment, The Fear-Pro, Fear-Difficulty, and Pro-R instruments are designed to engage the particular adolescent and family in the process of assessment. Each version of the Fear Assessment has 60 questions that are rated on a 4-point Likert scale, ranging from 1 (never) to 4 (always).

When administering the Fear Assessment, a couple of pointers are worth noting, which are useful to improve the assessment value. The purpose and types of questions should be explained to the question taker, and his/her understanding of terms such as "trust" and "retaliation" should be ascertained. Similarly, take care not to read the questions verbatim, rush through the assessment, or lead the individual's response. The clinician should be patient and provide narrated scenarios where appropriate. The Fear Assessment is scored by identifying the fears endorsed as occurring always or almost always (Apsche, Ward, & Evile, 2003). The hierarchy of target treatment behavior is then determined by prioritizing the fears as proposed by Miller, Rathus, and Linehan (1995), namely "(1) reducing life-threatening behaviors, (2) reducing therapy-interfering behaviors, (3) reducing quality-of-life interfering behaviors, and (4) increasing behavioral skills." (p. 124).

Following the Fear Assessment process, the therapist completes the Family Compound Core Beliefs Questionnaire (FCCBQ), which will further assist in identifying priorities for treatment.

Family compound core beliefs questionnaire. The short version of the Family Compound Core Beliefs Questionnaire (FCCBQ-SV) is a 96-item assessment of the adolescent's beliefs as they relate to personality traits, and is based on the work of Beck, Freeman, and Davis (2006). The Fear Assessment and FCCBQ are scored and used in the development of a thorough Case Conceptualization that also includes a functional behavioral analysis, which is updated throughout the treatment program. This approach is based on the Functional Analytic Psychotherapy (FAP) methodology (Kohlenberg & Tsai, 1993). FAP focuses on the in-session observation of clinically relevant behavior (CRB) through client-therapist interaction. However, the MDT behavioral analysis is more comprehensive as it considers and explores the entire beliefs → fears → avoids framework as triggered by a preceding event instead of focusing only on observable behavior.

Family conglomerate of beliefs and behaviors. The Family Conglomerate of Beliefs and Behaviors (FCOBB) forms the framework of the family treatment plan and it helps identify each family member's role in the treatment process. Each individual in the family, as well as the family collectively complete the Family Conglomerate of Beliefs and Behaviors (FCOBB). The FCOBB examines each individual's belief(s) as well as the corresponding behavior(s). In order to determine the priorities of treatment and enable progress, it is important to consider that beliefs affect emotions and feelings, which lead to behaviors that are often destructive to the individual and family unit. Beliefs are often activated by preceding events and unbalance family members' emotions. Therefore it is useful to explore each member's beliefs, feelings, emotions, thoughts, and resulting behavior processes to understand the dynamics and anticipate potential triggers. An example of an FCOBB table is included above (Table 1).

From the example above, it becomes apparent that the beliefs of this family, individually and collectively, are reinforced by the feelings and behaviors, which seem to form a chain reaction of increasingly persistent and potentially escalating negative outcomes for the group and individual members. Therefore, once the family's beliefs and behaviors are determined separately they are compared to each individual's beliefs and behavior, through which the effect on the whole is examined. Family progress is further assessed through the use of behavior report sheets that measure verbal and physical aggression, arguments, and "non-attending behavior". Home non-attending behaviors are defined as any behaviors by the parent or adolescent that can prohibit verbal engagement, resulting in non-compliance, walking away, or not responding to requests. To reiterate: The beliefs of the family, including individual and family beliefs, are reinforced by the feelings and behaviors of the individuals and the family collectively. A family can be so emotionally fragile that one negative belief, feeling, or behavior can cause a downward spiral for the individuals and the family as a group. Family MDT incorporates a family workbook (Apsche & Apsche, 2009) that are designed to structure the family therapy following the MDT methodology process.

Table 1. Family conglomerate of beliefs and behaviors (FCOBB)

FCOBB	Adolescent	Mother	Brother
Beliefs	Life at times feels like an endless series of disappointments followed by pain.	Whenever am shunned, I feel like a failure and I get angry.	Whenever there is confrontation, I want to forget everything.
Feelings, emotions, thoughts	Pain and worthlessness.	Hurt, failure, and rejection.	Small and alone, vulnerable.
Behavior	Isolation, withdraws from contact with family.	Screams that he is not appreciative and ruins the family and his life.	I drink at home or with friends.

The exercises help to reintegrate the troubled youth with the family and creates a collaborative effect for all family members.

Family triggers, fears, avoids, and beliefs (FTFAB) analysis. Following the FCOBB analysis, a table is completed by the adolescent and family members together with the clinician by associating the beliefs and corresponding behaviors with the fears that underlie the resulting coping or compensatory behavior, and the preceding events, or triggers that activate these fears. The Family Triggers, Fears, Avoids, and Beliefs (FTFAB) analysis is part of the treatment process to learn to anticipate triggers and realign thoughts to consider alternative positive beliefs and behavioral responses. Two main types of triggers are considered, namely Trigger 1 (T1)—things commonly known within the family unit to cause anxiety or fear and associated with conscious processing—and Trigger 2 (T2)—things the individual don't know, but others identify, that makes the group anxious or scared and associated with unconscious processing (Apsche & Apsche, 2009). T2s are often the most potent avoidance activators. An example of an FTFAB analysis is included in Table 2 below.

The FTFAB analysis is particularly useful to establish continuums of expectations instead of absolutes where an individual is easily disappointed and loses hope, whereby resultant behavior prompts negative reactions from family members, which often exacerbates the situation.

Case conceptualization

The assessments described above culminates in the Family Triggers, Fears, Avoids, and Behaviors (FTFAB) diagram, which provides a prioritization of problematic modes to be targeted for deactivation and realignment. Together with all other supporting information, it forms the basis of the case conceptualization from which the adolescent's treatment plan is developed with consideration of the roles and influences of participating family members.

The problem solving case conceptualization underlies the MDT methodology. Problem solving case conceptualization is a combination of the Beck (2011) case conceptualization model, and the problem-solving model of Nezu, Nezu, Friedman, and Haynes (2007). These models were refined by developing and adding several new assessments and methodologies to address the specific issues of the target adolescent population. The goal of the case conceptualization process is to provide a blueprint to treatment by addressing the specific typology and continuously updating feedback obtained from the treatment as it progresses. The underlying fears that originate from the belief system of the client are identified and examined, which serve the function of placing them in the context of core beliefs with links to relevant modes and schemas. Associated triggers are noted and the client assisted to anticipate them in order to develop avoidance behaviors (Apsche & Ward Bailey, 2003). The client's fears commonly serve the purpose of developing avoidance behaviors, which are often problematic in their daily environment. Based on the case conceptualization process, the client is confronted with his reality by a problem orientation process whereby beliefs and assumptions are explored with the objective to understand and respond to how those relate to behavior (Nezu et al., 2007). A rational problem solving process is then applied through a set of specific cognitive and behavioral operations that help to realign the client's belief-schema-thought-behavior links and avail positive alternatives.

The majority of adolescents with aberrant behaviors—the target treatment population of MDT—experienced significant physical, emotional, or sexual abuse and neglect, which is often the cause of a "conglomerate of personality disorder compound beliefs" (Apsche, Ward, & Evile, 2002, p. 47). These core beliefs tend to be highly integrative as they serve the function of protecting the client from their environment. Their complexity and persistence are reasons why treatment often fail for this typology of client. Therefore, a systematic but flexible methodology is required to assess and manage compound beliefs. Realizing the need for an effective treatment approach for adolescents with dysfunctional behaviors, MDT was developed to provide a functional solution to this challenge, which is driven and individualized by the case conceptualization process based on an empirically supported assessment approach.

Table 2. Family triggers, fears, avoids, and beliefs (FTFAB) analysis

Trigger 1 (T1)	Trigger 2 (T2)	Fears	Avoids (behavior)	Beliefs
Experiencing disappointment.	Not meeting expectations.	Fear of failure, inadequacy, and worthlessness.	Family members isolate themselves which cause aggression from others.	When there is a disappointment or confrontation, I am not good enough and will never be.

As aggressive or destructive behaviors of clients typically correlate with their core beliefs through emotional dysregulation, all which need to be realigned and balanced with positive alternate reactions, the central feature of case conceptualization is building the Conglomerate of Beliefs. The structure of the Conglomerate of Beliefs relates behaviors with beliefs, which enables the therapist to balance beliefs and replace activation of emotional and behavioral dysregulation with positive alternatives. There are two main subtypes of adolescents with aggressive conduct issues, namely Proactive and Reactive, each of which activates in a different way and therefore requires an individual treatment approach (Dodge, Lochman, Hamish, Bates, & Petti, 1997). The proactive subtype is opportunistic and achieves benefits and rewards from premeditated aggression, while the reactive subtype activates aggression through a core belief system and emotional dysregulation.

It is therefore important to understand the association of social-cognitive and emotion-regulation processes to aggressive behavior in order to treat client effectively (Sukhodolsky & Ruchkin, 2004). In their study Fite, Wimsatt, Elkins, and Grassetti (2011) found that negative life events were linked with both reactive and proactive aggression, but much more strongly associated with reactive aggression, while best friend delinquency was positively associated with proactive aggression. An earlier study by Fite, Raine, Stouthamer-Loeber, Loeber, and Pardini (2009) came to the same conclusions and also associated the proactive subtype with psychopathic features and antisocial behavior. Proactive aggression predicts later externalizing problems much better than reactive aggression. However, Vitaro, Brendgen, and Barker (2006) found some indications that, developmentally, reactive aggression may precede proactive aggression. Furthermore, reactive aggression is protective, linked to high levels of anxiety, and Oppositional Defiance Disorder (ODD) symptoms, while proactive aggression is closer associated with Conduct Disorder (CD) behaviors (Vitaro, Gendreau, Tremblay, & Oligny, 1998). In fact, where proactively aggressive children are more at risk for concurrent and later delinquent behaviors, substance abuse, and conduct disorders, reactively aggressive children are more at risk for depression and suicidality, but also for violence in close dyadic contexts such as dating and romantic relationships (Brendgen, Vitaro, Tremblay, & Lavoie, 2001).

These findings have important implications for the case conceptualization and application of MDT within the adolescent population with dysfunctional behavior problems. According to Vitaro, Brendgen, and Barker (2006):

> *"…interventions aimed at highly reactively aggressive children should focus on anger management and social cognitive reconstruction, especially with respect to cue selection and attributional biases…[ ]… On the other hand, proactively aggressive children may benefit from exposure to non-aggressive peers and to reinforcement contingencies that support non-aggressive behaviors. These children might also benefit from social cognitive restructuring about the negative consequences of their aggressive acts for themselves. (p. 17).*

The MDT case conceptualization methodology provides the framework to assess and plan treatment for these subtypes of aggression among adolescents by identifying and exploring the beliefs-fears-behaviors dynamics. According to Apsche, Ward, and Evile (2003), the goal is to deactivate the Fear → Avoidance → Compound Core Beliefs mode and encourage emotional regulations by anticipating triggers and considering positive alternate beliefs. The fruit of the case conceptualization process is the Conglomerate of Beliefs and Behaviors (COBB) cluster, which incorporates compound core beliefs and the corresponding behaviors. The COBB is developed collaboratively between the therapist and client, thereby validating the client's behavioral responses in congruence with his core beliefs. The COBB product forms the basis for all subsequent work in the MDT manual. As such, the case conceptualization is "a systematic carefully designed sequential methodology intended to provide functionally based treatment to complex emotional, thought, and behavioral disorders." (p. 49).

Validation, clarification, and redirection

MDT, in both individual and family work, offers the therapist and client the ability to objectively structure, measure, and track the therapeutic progress together in a treatment manual. It incorporates treatment strategies and elements from behavioral, cognitive, dialectical, and other supportive psychotherapeutic approaches. It is administered systematically via a method that is clearly delineated. Therapy is comprised of weekly individual and family therapy sessions, provided for an average of 8 to 12 months, depending upon the level of cooperation and amenability to treatment by the individual and family (Apsche, Bass, Zeiter, & Houston, 2009). The process of validation, clarification, and redirection is the crux of FMDT to strengthen the therapeutic alliance and ensure treatment progress.

VCR method. MDT teaches families how to balance beliefs in their family with the Validation, Clarification, and Redirection (VCR) method (Apsche & DiMeo, 2012). While there may be some identification of opposing beliefs by the family members, this method attempts to expose the irrational and illogical belief(s) deeply held by families in crisis. The individual components of the VCR method include:

1. ***Validation.*** Each family member's thoughts and beliefs are identified and explored initially through the assessment process described above, and then validated. Therapists search for the "grain of truth" in each family member's responses. It is important to assure each member that his or her responses are accurate as far as he or she interprets perceptions born from past experiences. Each member is given appropriate therapist reinforcement to indicate that he or she is understood and believed.
2. ***Clarification.*** The therapist clarifies the content of responses. Therapists also clarify the beliefs that are activated in response or anticipation of trigger events. It is important that the clinician, client, and family members understand and agree with the content of the clarification. The clarification step is crucial in understanding the long held thinking schemas—it reveals the family member's perspective of reality and beliefs.
3. ***Redirection.*** To reiterate: Redirection is the crux of the MDT process to affect lasting positive change. The therapist redirects responses to help the family members consider other possibilities on the continuum of held beliefs. The goal of redirection is to help find the exception in the belief system. It involves examining the opposite side of the dichotomous or dialectical thinking. It is crucial to partner with the member to see the "grain of truth" in each of the dichotomous situations presented. The redirection is an attempt to aid the youth and family member(s) to see both sides of the dichotomous belief(s) and understand that neither is absolutely correct or false. It is also important to look for the kernel of truth in each belief and offer a compromise in understanding the truth in both beliefs. The use of a continuum of belief is implemented to examine the individual's belief of truth in both of the dichotomous beliefs and situations. The client is guided to discover positive alternative beliefs and apply a continuum method to move from the original (dysfunctional) belief towards the new possibility. Therefore, "through questioning the evidence, the therapist could try to shift the client's self-evaluation to a mid-point in this continuum to reduce absolutistic thinking" (Padesky, 1994, p. 270). Wenzel (2013) explains further:

   > *For example, a patient with a core belief of "I'm a failure" might write the word "Failure" under the anchor for 0% and the word "Successful" under the anchor for 100%. The patient is asked to provide an initial rating of where on the continuum he or she falls, as well as the point on the continuum in which the negative core belief begins (e.g., failure begins at 20%). As the exercise progresses, the patient considers the full spectrum of people who would lie on the continuum and lists some of these people as anchors (e.g., people who would be considered at 10%, 20%, et cetera, through 80% and 90%). Concurrently, the patient continually revises where he or she stands on the basis of these anchors. (pp. 28-29).*

The effectiveness of the VCR process depends strongly on the identification and assessment of the client's fears and core beliefs, which are correlated to form a beliefs → fears → avoids paradigm and the trigger(s) associated therewith. This is the basis of the case conceptualization, a continuous monitoring, planning, and readjustment process to track the client's progress with regards to the realignment of his beliefs to foster positive behavior.

According to Apsche and DiMeo (2012), the validation, clarification, and redirection (VCR) process is unique to mode deactivation therapy (MDT) and family mode deactivation therapy (FMDT). FMDT integrates mindfulness, acceptance, and defusion with validation, clarification, and redirection (VCR) of the functional alternative belief (FAB), or balanced beliefs. A functional alternative belief becomes a balanced belief the moment it is accepted by the adolescent to some degree, on a scale of 1 to 10. The purpose of the validation, clarification, and redirection process of the functional alternative belief is to reinforce and realign the adolescent's experience both emotionally

and cognitively. That is, it allows the youth to experience positive validation for his or her balanced belief. This is achieved by providing the adolescent feedback that his world views are reasonable in the context of his past experiences, but that they may have been skewed in attempting to cope in response (Bass & Apsche, 2013). However, the same experiences might also support more positive and realistic alternative world views and beliefs that may cause less distress and dysfunctional behavior.

Continuum technique and balanced beliefs. The continuum technique is applied during the redirection phase of the VCR process. Core beliefs influence an individual's self-concept and world view and plays a crucial role in their development of emotional response and behavior. When core belief constructs are "faulty", dysfunctional behavioral responses are a way to cope with those wrong perceptions in order to alleviate distress. Instead of viewing the core beliefs in absolutes, such as "I am always failing" versus "I always have to be successful", the client (and his family) is guided to explore alternatives along a continuum According to James and Barton (2004), the continuum technique is effective to achieve a lasting change in cognitive processes in order to realign belief systems and improve responding feelings and behavior. The balancing of beliefs alongside a continuum is the crux of the FMDT methodology. As explained previously, this feat is achieved through the validation, clarification, and redirection (VCR) process after identification of the major beliefs → fears → behaviors targets. The associated triggers are applied to anticipate and preempt potential problems by consciously selecting alternative beliefs on the continuum. Using the same previous example, the individual is prompted to consider that he may sometimes succeed, maybe 20% of the time, or 40%, but he is not always failing and it is certainly not expected of him to always be successful. By diluting the expectation to a more realistic level, the outcome is no longer only dichotomous, which should relieve the feelings of distress and constant failure. The secondary effect is that the family behavior and dynamics will also change in a positive way as the chain of negative events and responses are disrupted.

■ Other pertinent issues and considerations in FMDT

In all therapeutic endeavors it is important for the clinician to be candid and attentive with regards to the limitations and risk aspects of any given approach at any time. Whether it is an innate trait of a participant, unexpected changes in environment or situation, or transference issues, if the necessary steps are not taken to anticipate or prepare for challenges, a treatment effort can easily be derailed. One such as example in family therapy is experiencing resistance or non-compliance from the adolescent client and/or his family member(s).

The resistant adolescent and family

Adolescents, especially oppositional adolescents, often do not want to attend therapy, and the same might be true for their families. Although other third parties, such as a criminal justice or juvenile justice system agency, may have mandated treatment, the adolescent and/or family typically thinks that they are fine and that any intervention is not required. Furthermore, familial problems such as parental psychopathology or poor maternal parenting are likely to be the catalyst of a child's externalizing behaviors (Frick, Lahey, Loeber, Stouthamer-Loeber, Christ, & Hanson, 1992). These problems often include any or a multiple of maltreatment, physical and sexual abuse, family violence, substance abuse, divorce, and mental health issues. As a result, the therapeutic task in a family structure can be more complex and challenging. However, for a clinician practicing FMDT or MDT, the treatment process might prove less difficult as the approach is validating and nonjudgmental rather than focused on problems. In this case, MDT treatment is started with mindfulness as a first step. You need not discuss "issues" or problems; instead you work with the youth and family to be present in the moment. This requires the FMDT clinician to be there, joined with the client and family in awareness. Experience has shown that if the clinician does not practice mindfulness, the experience of the adolescent and his family will greatly diminish and lose effectiveness. FMDT mindfulness requires honest effort and, again, being real, and in the moment.

FMDT also involves the completion of a series of specific assessments in order to provide a basis and framework for the development of the case conceptualization. The concepts of validation and collaboration are intrinsically embedded throughout the assessment and case conceptualization process, which greatly strengthens the therapeutic alliance. The FMDT assessments are effective with a variety of adolescents presenting behaviors ranging from cooperative to oppositional and negative. Although the treatment may be mandated, in reality little prevents an adolescent from refusing to cooperate in the therapeutic environment. However, experience with the MDT approach has demonstrated that it rarely happens when implementing MDT treatment and even less so later on in the process. Interestingly, even the most defiant and oppositional adolescents appear responsive to the specific MDT assessments designated for him or her. This may be in part because the mindfulness and collaborative case conceptualization process systematically address resistance and opposition by validating and shaping responses with the clinician as guide rather than instructor. In addition, mindfulness exercises as a validating experience in the present moment serve to create a feeling of self-efficacy and control over the process, improve cohesion between the adolescent, his family, and the clinician, and reduce resistance and non-compliance.

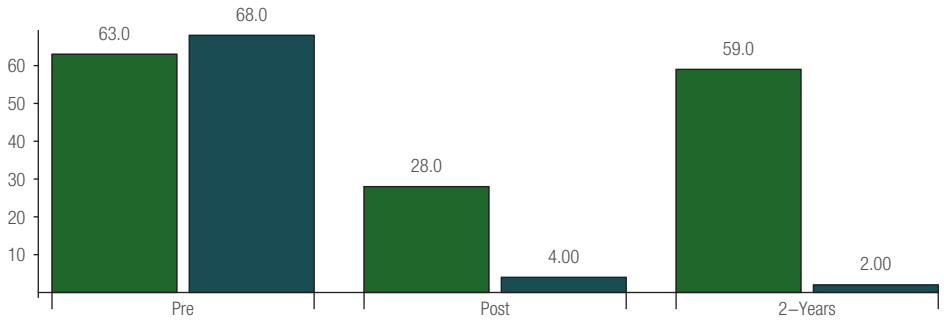

Figure 1. Pre- and post-physical aggression: MDT versus TAU
Source: Apsche, Bass, Zeiter, & Houston, 2009, p. 336.

■ FMDT outcomes

Family Mode Deactivation Therapy (FMDT) has been shown to be an effective treatment for a variety of adolescent disorders (Apsche, Bass, & Siv, 2006a), including emotional dysregulation (Apsche & Ward Bailey, 2003) behavioral dysregulation (Apsche, Bass, & Murphy, 2004), physical aggression (Apsche, Bass, & Houston, 2008), sexual aggression (Apsche, Bass, Jennings, Murphy, Hunter, & Siv, 2005), and many harmful symptoms of anxiety and traumatic stress (Apsche & Bass, 2006). Furthermore, MDT family therapy has been effective in reducing family disharmony in case studies (Apsche & Ward Bailey, 2004), and has been shown to be more efficacious as compared to treatment as usual (TAU) in treating families with a variety of problem behaviors (Apsche & Bass, 2006), as well as in reducing and maintaining treatment effects through two years of tracking recidivism rates (Apsche, Bass, & Houston, 2008; Apsche, Bass, Zeiter, & Houston, 2009; Murphy & Siv, 2011 ; Thoder & Cautilli, 2011; Apsche, Bass, Backland, 2012; Bass & Apsche 2013).

Results of a Family MDT clinical study of 14 adolescents presenting sexual and physical aggression, as well as oppositional behaviors including verbal aggression, indicated that MDT out-performed TAU (Apsche, Bass, & Siv, 2006b). At 18 months of observation, the MDT group had zero incidents of sexual recidivism, while the TAU group had 10 reported incidents. The MDT group reported three incidents of physical aggression while the TAU group reported 12 incidents. The results were promising for MDT as a family therapy, but the authors indicated that further studies with a larger group should be pursued to improve statistical significance (Apsche, Bass, & Siv, 2006b).

A study of outpatient Family MDT (Apsche, Bass, & Houston, 2008) was also completed comparing an MDT group and a separate TAU group. This study examined physically aggressive youth with conduct problems and characteristics of personality disorders. A total of 15 families participated; eight in the MDT group, and seven in the TAU group. MDT surpassed TAU at the 20-week interval of treatment.

The most compelling point of data was that the MDT group had no referrals for out-of-home placement, while the TAU group had seven. The results showed potential efficacy for Family MDT with this population, although the small number of participants was also a limitation of this study (Apsche, Bass, & Houston, 2008).

Apsche, Bass, Zeiter, and Houston (2009) completed a separate treatment study of 40 adolescents and their families; divided into a 20-member TAU control group and a 20-member MDT experimental group. The results of this study enhance the overall treatment data for MDT. MDT outperformed TAU in every area, including anger and aggression as measured by the STAXI-II. The Anger Control-Out component of the STAXI-II—client's ability to the expression of anger toward others or the environment—declined by 40% in the MDT group compared to 4% in the TAU group. The Anger Control-In component of the SYAXI-II—client's ability to control inward directed anger—declined by 35% in the MDT group compared to 10% in the TAU group. The internalizing and externalizing disorders of the adolescents as assessed by the Child Behavior Checklist (CBCL) were reduced significantly by Family MDT as well. The study concluded that Family MDT is an effective treatment for families with adolescents with behavioral and conduct issues. In addition, FMDT performed well by reducing the recidivism measure of physical aggression over the course of two year follow up period to two incidents for all participants in the FMDT group as compared to the TAU group with 59 incidents reported (see Figure 1).

What may even be more significant is the fact that although TAU achieved a 44% decline in incidents of physical aggression during the treatment period, the number returned to almost pre-treatment levels after two years. Although larger studies are required to confirm this phenomenon, it may indicate that the FMDT approach enables the adolescent and his family to continue to practice the MDT concepts after treatment, which will sustain the benefits received well after the program is completed.

■ Conclusions and recommendations for further study and practice

Several studies have found that a lack of cohesion and harmony of the family unit is correlated with juvenile behavioral dysfunction, conduct problems and delinquency (Cottle, Lee, & Heilbrun, 2001; Demuth & Brown, 2004; Juby & Farrington, 2001; McCord, 1991). This breakdown in relationships and responsibilities is also likely to be directly associated with parental absence, marital problems, domestic violence, substance abuse, mental health disorders, child physical and sexual abuse, and neglect. Children who are subjected to these circumstances are also significantly more likely to develop child and adolescent onset disorders, which typically persist and develop further into adulthood. According to Kierkus and Baer (2002), the strength of parental attachments even overshadow structural and other problems, which implies that any early intervention has to address interpersonal relationships in the family as well as the particular presenting problems of the adolescent. According to Huey, Henggeler, Brondino, and Pickrel (2000), positive changes in family interpersonal relationships tend to reduce delinquent peer affiliation and delinquent behavior in general.

Family Mode Deactivation Therapy (FMDT) has proven to be an effective integrated approach in decreasing aberrant behavior of the adolescent by addressing his and his family's dysfunctional and unsuitable core beliefs. Positive alternative beliefs are explored on a continuum, which, when activation of a negative belief is anticipated, enable the adolescent to consciously select appropriate behavior. Despite the range of evidence presented here to support the efficacy of FMDT for an adolescent population with persistent and severe conduct and behavioral problems, the depth of evidence-based research and practice can still be considered as novel and limited. In terms of empirical support, the key term "Cognitive Behavioral Therapy" lists 137,000 research links on Google Scholar compared to the 130 for "Mode Deactivation Therapy". Therefore, MDT in the various settings, including FMDT, requires a larger pool of independent research to establish the content, construct, and predictive validity, internal consistency, and inter-rater reliability of the MDT treatment outcomes and methodology. Nevertheless, the positive results achieved to this time with an inarguably challenging population show great promise in continuing to test and improve MDT practices, including psychopathologies and settings yet partially or unexplored such as families affected by the trauma of armed conflict and incarcerated juveniles.

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Effectiveness of self-efficacy group therapy on problem solving skill and sexual self-efficacy in addicted women

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Abstract

Objective: This study investigated the impact of self-efficacy group therapy on problem solving skill and sexual self-efficacy in addicted women of Qazvin city (one of Iran's cities).

Methods: This study examined two groups of 15 addicted women during the same treatment period in Qazvin city. The women were selected by sequential sampling. To collect data, we used a problem solving skill scale (D'zurilla & Nezu, 1990), and Reynolds' sexual self-efficacy scale. 8 sessions of group therapy were performed by experts. In the control group, no therapy was applied. After intervention, both groups were tested. Descriptive and inferential statistics were used to analyze the data.

Results: The results showed that training significantly improved sexual self-efficacy and problem solving skill in addicted women of Qazvin city. Scores in the experimental and control groups were significant ($p < 0.05$).

Conclusion: Self-efficacy group therapy empowers people to actualize their knowledge, attitudes and values and enables motivation for healthy behavior which will have a significant impact on their sexual function and problem solving skill.

Keywords

self-efficacy group therapy, sexual self-efficacy, problem solving skill

Addiction is a chronic and relapsing disease with several genetic, mental, social and environmental factors that interact to initiate and continue it. Like other mental illnesses, addiction is rooted in several factors. Each person may have a special group of confounding factors, and if only one of these factors is considered in addiction treatment and other factors are not, assuming positive effects of that factor, other parameters can reduce the effect of the chosen factor.

Therefore, current methods of treatment do not have adequate efficacy and, even in the best treatments, success rates have only been 30-50% even after yearlong treatment (Brien & McLellan, 2006), in treatment considering all factors is essential.

Problem solving skill is one of the factors which is very important in etiology and treatment of addiction (Wig et al, 2006) but is often forgotten in the treatment process. Addicted people, as part of a vulnerable community, face psychological emotional, social and economic problems which have negative impacts on their sexual self-efficacy and problem solving skill and keep them from daily activities (Chen, Yeh & Lee, 2009; Elliot et al, 2006).

Carmack (2000) offers a simple explanation of problem solving skill as an oriented cognitive process to reach a goal that seemed have no solution. Problem solving skill consistently affects compatibility with others in emotional and mental health issues (D'zurilla & Nezu, 2007). Thus, problem solving skill is an important factor to influence and control stressful situations (Heppner & Witty, 2004). Determined individuals have a positive attitude toward solving problems, and often negative individuals have a negative attitude towards problems (Maddux, 2002). *Is this a direct quote from the source as the sentence needs clarification but I don't want to do so without your permission*? This attitude can lead him/her to an unsuitable solution, such as addiction, which in turn can have damaging effects on his/her life and interferea in sexual performance (Duits et al, 2009).

The National Institutes of Health has defined erection malfunctions as the inability to make or maintain an erection sufficient penis {as satisfactory sexual activity}; this disorder can be progressive (National Institute of Health, 1993). This is the most common sexual dysfunction among couples and can result in a traumatic relationship.

Poor erection function can also affect an individual's self-image, both emotionally and physically, and his/her relationship with their partner. This can be associated with some social-psychological issues, such as depression, anxiety about sexual performance, denial of sign, refusing sex, relationship distress, and disruption in problem solving skill (Feldman, Goldstein and Hatzichristou,2005).

In recent years, treatment and prevention of addiction has been attempted through understanding the factors of it and the use of the scientific method has expanded. The best method of prevention does not consist of one but several strategies that must be used at the same time. Three strategies that often can be used in the world include: legal and protection strategies, training-educational strategies, and therapy. In the field of educational strategies, under which this research falls, knowledge can be given to individuals about their ability to quit addiction. On the other hand, Bolton (2004) believes that a high percentage of addict therapies have been focused on drugs with only a small percentage of them focused on the mental health aspect. Research about addicted people shows that according to physical, psychological and social conditions, they will need specialized training treatments. Researches such as Carroll et al. (2009) and Mandel, et al. (2008) showed that training strategies are effective in improving physical and mental health of addicts. Research also shows that training interventions can be effective in addicted people to enhance sexual performance, increase the performance of their immune system, and increase hopefulness (De Leon, 2006).

Self-efficacy group therapy is one of the appropriate interventions. Albert Bandura (1997) stated that self-efficacy beliefs affect people's sexual and emotional reactions. Bandura's cognitive-behavioral approach for increasing self efficacy is based on four principles (Sholts and Sholts, 2002):

1. Face people with successful experiences by arranging an achievable goal which will increase success performance.
2. Face people with good models that have been successful in a particular field, which improves the succession of successful experiences.
3. Verbal Persuasion, which leads people to believe they are capable of successful operation.
4. Create physical arousal through diet, stress reduction, and exercise programs that increase ability to cope with problems.

Bandura (1977) notes that successful performance increases self-efficacy. Sexual self-efficacy and problem-solving skill are essential for social and marital adjustment in addicts. This study is trying to answer this question; is self-efficacy group therapy effective on problem solving skills and sexual self-efficacy in addicted women?

■ Method

This research utilized a mixed methods experimental design and was conducted in 2012.

Participants

The study sample included two groups, one experimental and one control, each of 15 addicted women in Qazvin City (one of Iran's cities). ($N = 30$)

All participants (in control and experiment group) were aged between 22 to 55 years. The control group did not receive any intervention and data were taken pre-test and post-test.

Inclusion criteria: satisfaction of person to participate in intervention, at least third grade secondary education, married.

Exclusion criteria: illiteracy, physical and psychological disorders

Measures

1. ***Family problem solving skill questionnaire (D'zurilla & Nezu, 1990):*** The responses to this questionnaire used the 5-level Likert scale: 1 = never, 2 = seldom, 3 = sometimes, 4 = very often, 5 = always. Ahmadi et al (2010) calculated its reliability 0.91 and validity 0.81 in Iran.
2. ***Sexual self-efficacy scale-erectile functioning:*** This scale is based on reviews of the Bandura, Adams and Beyer (1977) sexual treatment questionnaire (Lobitz and Baker, 1979) and Erectile Difficulty Questionnaire (Reynolds, 1978).

Libman, Rothenberg, Fichten and Amsel (1985) showed by split-half reliability for sexual efficacy scale in men and women respectively (0.88, 0.94). In Iran, Rajabi et al, (2012) with the use of factor analysis obtained Cronbach's Alpha in total 0.95 and for five factors was in range (0.91–0.82). Subscales include: pleasurable sexual intercourse without fear or anxiety, maintaining of erection during sexual intercourse, get a sexual encounter, to reach orgasm, re-sexual desire.

Table 1. Content of sessions and homework related to self-efficacy group therapy

Session	Content of sessions	Homework
1	• To introduce rules of participation in meetings and conditions for achieving awards to encourage better performance in meetings. • To define self-efficacy and to describe some of the characteristics of individuals with high and low self-efficacy.	1. Write individual understands of the self-efficacy concept. 2. Describe some of the characteristics of individuals with high and low self-efficacy based on the discussion in class.
2	• To review assignments from the previous meeting and provide feedback • To describe other characteristics of individuals with high and low self-efficacy, discuss them, and give feedback. • To give feedback about goals which members want to achieve but feel that they cannot, the reasons for this perception, and feedback from other members about the accuracy of this perception. • To give detailed explanation of the logic of applied relaxation, to associate it with self-efficacy, and to explain the requirements for its effectiveness.	1. Answer this question: have you ever thought you could not achieve something, only to find out you could? If so, have you thought that you knew what to do before you did it? 2. Describe two or three distressful situations in this week, drastically scaled from zero to 100; describe the symptoms of physical, cognitive and emotional impact.
3	• To review reports from individual members about homework and discuss them in detail. • To implement Verbal Persuasion • To allow members to report on homework of detecting early signs of anxiety and progressive relaxation training	1. Ask about a statement that the person feels unable to reach and interview a person who has achieved it 2. Ask another member about doing homework 1. 3. Progressive relaxation exercises, twice a day, and record the results.
4	• To review reports by members about homework and discuss them in detail • To suggest diet, stress reduction, and exercise programs for physical arousal and explain its association with self-efficacy • To present the report about progressive relaxation methods, discuss it, and to train and practice relaxation techniques without stress	1. Ask about a statement that a person feels unable to reach and interview a person who has achieved it 2. To ask another member about doing homework 1. 3. Progressive relaxation exercises, twice a day, and record the results.
5	• To review reports by members about homework, discuss them in detail, and give feedback. • To explain how to recognize feelings of self-efficacy and performance in various aspects of life. • To review reports about relaxation techniques without stress homework; training and practice of relaxation techniques to control the symptoms	1. Detailed report on the first steps to take in order to achieve the goal 2. Practice relaxation of control signals twice a day and record the results.
6	• To review reports by members about homework, discuss them in detail, and give feedback. • To define self-regulation and explain its connection to self-efficacy; to suggest conditions of maximum effectiveness of alternative observation on individuals' self-efficacy.	1. Ask about a statement that the person feels unable to reach and interview a person who has achieved it 2. Answer this question: when you have taken the first step toward achieving the goal, what obstacles have arisen and, for each of them, what kinds of solutions were found?
7	• To review reports by individual members about homework and discuss them in detail. • To lecture about a successful person's life, the obstacles and problems they faced when trying to achieve their goals, and the ways to solve each of these problems and obstacles • Reports on relaxation homework, training and practice of the fast relaxation method	1. Answer this question: does the person in the past week trying to reach a goal feel doubt or despair, and have they decided to give up? If they are, what caused it, and if she is determined to reach her goal, what is the cause? 2. Collect all the certificates, awards, medals, look at them, and describe how they make you feel. 3. Do quick relaxation practice about 15 minutes per day and record the result.
8	• To review reports on homework, expression of feelings, and the decision of the person regarding continuing efforts to achieve the goal and discuss • To lecture about a successful person's life, the obstacles and problems they faced when trying to achieve their goals, and the ways to solve each of these problems and obstacles • To review reports of application of specific relaxation homework, short assignments and discussions over whole session	1. The one-year program is designed to achieve its objective; provide detailed description of the program and the five required steps for it. 2. Express obstacles and problems to describe each step and explain ways to overcome these obstacles and solve problems. 3. Do specific relaxation practice twice a day and record the results.

Table 2. Results of Shapiro–Wilk test for evaluation of normality of data

		Shapiro–Wilk test		
Variable	Group	sig	*df*	*F*
Pleasurable sexual intercourse without fear or anxiety	Test group	0.175	15	0.917
	Control group	0.385	15	0.940
Maintaining of erection during sexual intercourse	Test group	0.086	15	0.897
	Control group	0.067	15	0.884
Get a sexual encounter	Test group	0.069	15	0.889
	Control group	0.065	15	0.893
To reach orgasm	Test group	0.335	15	0.885
	Control group	0.073	15	0.896
Re-sexual desire	Test group	0.076	15	0.881
	Control group	0.082	15	0.959
Problem solving skill	Test group	0.673	15	0.961
	Control group	0.702	15	0.963

Table 3. Result of Levene's test for homogeneity of intergroup variance of data

Variable	Levene's test			
	F	df_1	df_2	sig.
Pleasurable sexual intercourse without fear or anxiety	2.279	1	28	0.106
Maintaining of erection during sexual intercourse	0.495	1	28	0.488
Get a sexual encounter	1.001	1	28	0.326
To reach orgasm	0.269	1	28	0.608
Re-sexual desire.	0.063	1	28	0.804
Problem solving skill	0.088	1	28	0.769

Table 4. Results of covariance analysis in evaluation of self-efficacy group therapy on sexual self-efficacy and problem solving skill in addicted women

Index sources variation		Type III sum of squares	*df*	Mean square	*F*	sig.	Partial eta squared
Group effect	Pleasurable sexual intercourse without fear or anxiety	907.500	1-28	907.500	530.850	0.021	0.873
	Maintaining of erection during sexual intercourse	208.033	1-28	208.033	301.290	0.031	0.819
	Get a sexual encounter	213.323	1-28	213.323	228.571	0.001	0.734
	To reach orgasm	288.033	1-28	288.033	356.135	0.001	0.846
	Re-sexual desire.	381.633	1-28	381.633	316.771	0.010	0.704
	Problem solving skill	328.533	1-28	328.533	44.956	0.001	0.616

Procedure

After final sample selection, women who were in the same treatment period in health centers of Qazvin city were divided into an experimental group and a control group. The experimental group was asked to participate in self-efficacy group therapy that was held in the health center of Qazvin City and were promised that, by regular and active participation in this group, their health care costs would be discounted. Participants were required to attend at least 8 sessions of 120 minutes. Two months after the training, the questionnaires were carried out again. Data were analyzed by using SPSS software, version 18 and the Covariance test, Shapiro Wilk test, and Levene test.

Note: In order to comply with the ethical principles, upon the completion of the study a self-efficacy group therapy session was conducted for the control group.

Table 1 shows the content of the sessions and the homework related to the self-efficacy group therapy program.

■ Results

Covariance analysis was used to evaluate data normality and covariance, and homogeneity of pretest scores between the two groups. In order to examine the normality data, the Shapiro Wilk test was used. The Levine test was used to evaluate homogeneity of variance within groups. According to the data in Table 2 and Table 3, the findings were not significant (α = .05 level). Assumptions were inferred about normality and homogeneity of data covariance and regression slope, and the use of covariance was permitted for evaluation of assumptions with homogeneity of covariance.

According to Table 3, the results show significance (α = 0.05), and therefore it can be concluded that group therapy based on self-efficacy was effective in sexual self-efficacy and problem solving skill in addicted women.

■ Conclusion

Addicted people, as a vulnerable community, face psychological emotional, social and economic problems in addition to physical consequences of addiction, all of which will have a negative impact on their marital satisfaction and sexual self-efficacy and keep them from their daily activities. Research suggests that mental health care is one of the most basic needs of addicts and can reduce their relapsing (Young, 2005).

The most important source of judgment about efficacy is success function. Previous successful experiences which provide direct indication about the level of an individual's competency reinforce their self-efficacy by demonstrating their abilities (Sholts & Sholts, 2002). Experiences and research in clinical psychology and positive psychology suggest that creating a path of success is the most effective way to increase self-efficacy and self-esteem (Schunk & Gun, 2006).

Moving in a path of success helps a person to overcome any sense of defeat or weak morale by gaining competence in important aspects of life and the ability to plan for failure in these aspects by practicing tasks which are related to life (Frank and Frank, 1993; Kaley & Cloutier, 2004).

Looking closely at their feelings awards and describing how the awards make them feel; providing a report about the first steps towards achieving a goal; and finally designing an annual program for attracting the attention of participants to previous successes helps them plan for success in important aspects of life.

Implementing strategies such as lecturing participants about successful peoples' lives, the obstacles and problems that are faced when trying to achieve goals, and the ways which were used to solve each of these problems and obstacles; interviewing people who have had similar experiences and overcome addiction despite their initial impression about it and who have now reached their own desires; exploring thinking processes and strategies that have led to their success; and group discussion about these strategies and practices, have a positive relationship with increasing participants' sense of competence and the appropriate strategies and ways to deal with difficult situations.

According to Bandura's beliefs, Verbal Persuasion can increase self-efficacy. Verbal Persuasion in a group meeting comes from comments made by the facilitator and group members about negative thoughts to the individual in case of failure to fulfill this purpose.

In fact, past research suggests that training interventions such as self-efficacy group therapy can improve problem-solving skill in patients, and enhance their immune function and life expectancy (De Leon,2006). This method (self-efficacy group therapy) provides a space for the group to feel safe and overcome their fears and also facilitates individual awareness. In addition to relaxation practices (Dean, 2000), exercise (Stringer, 2006) and proper nutrition (Keller, 2004), positive measures to promote physical and mental health in women addicts are included.

Although the impact of these factors can be identified long-term, the results of this study demonstrate the effectiveness of these agents as a whole. On the other hand, according to results, the intervention program could improve problem solving skills in women addicts and also had positive effects on sexual function and sexual self-efficacy, resulting in increased life expectancy and tolerance to harsh issues of life which can prevent the occurrence of risky behavior among them. This program provides required knowledge in the field of addiction and also teaches proper practices for individual sexual self-efficacy among the sample group. Although sampling of the population is one of the limitations of this study, due to the effectiveness of the treatment program, promotion and development of this intervention is recommended to other therapists and researchers. Finally, it is proposed to evaluate the impact of this intervention on a group of men.

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Update and review of mode deactivation therapy family and individual meta-analysis

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Abstract

The following is a review and reanalysis of both Family and Individual Mode Deactivation Therapy articles. New data were infused and added to the purported results of this study and the composite of the analysis of these results suggest that there is a large effect size of both family and individual mode deactivation therapy

Keywords

Mode Deactivation Therapy (MDT), Family MDT, Individual MDT, Mindfulness, Meditation

In 2012, Apsche, Bass and Backlund conducted a rigorous meta-analysis on the efficacy of Mode Deactivation Therapy (MDT). The findings were substantial in that MDT was shown to be an effective approach to working with many disorders and socially unacceptable behaviors (Apsche, Bass and Backlund, 2012). It has been 2 years since that analysis. This study revisited the work by adding additional data from recent articles related MDT's effectiveness within the family dynamic and reexamined all of the data to assess the consistency of the approach. As was the case in the first analysis, MDT is described as a derivative of Cognitive Behavior Therapy, Acceptance and Commitment Therapy, Dialectical Behavior Therapy, Functional Analytic Psychotherapy and Mindfulness and Meditation from ancient Buddhist practices. This was the third large scale assessment of MDT with the first being conducted by Apsche and Dimeo (2010).

Apsche & DiMeo (2010) completed a meta -analysis including thirty-eight published and unpublished studies on MDT. They included any MDT article with reported data and then examined data from unpublished MDT studies. As mentioned in the Apsche, Bass and Backlund article, the results were promising, yet incomplete. That meta-analysis examined all related articles and was, at the time of writing, current and updated. Since those publications, Apsche and associates have completed further studies that could potentially add to the body of research related to efficacious treatments for Adolescent sexual and aggressive offenders.

In this meta-analysis only 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. This meta-analysis includes twenty six published and one unpublished MDT studies. The unpublished study includes data for both meta and mediation analysis. Similar to the 2012 meta analysis, the purpose of this study is to examine the overall effectiveness and consistency of MDT individual and family groups with a diverse group of male adolescents.

Methods

All published and unpublished MDT studies were evaluated for inclusion. Only studies implementing MDT, in residential and outpatients units, were selected resulting in a total of 24 studies included in the meta-analysis. All the studies included in the meta-analysis are listed in Table 1.

Once again, the selected studies were divided into three categories. This time we used Mediation, Individual, and Family studies. A separate meta-analysis was conducted for each category. All data was extracted by the second author and an associate. The data was entered and calculated using the Cohen's d and Effect Size *r* methodologies (Cohen, 1988). The present meta-analysis used the DSTAT statistical package for the computation of effect sizes (Johnson, 1993).

Participants

The 24 studies yielded a sample population of 734 male adolescents between the ages of 14 through 17. Study Participant demographics included Axes I and II diagnoses, many with comorbid 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. General participant recidivism was less than 7%, and sexual offense recidivism less than 4% after two years post MDT treatment.

Procedure

Similar to the 2012 meta-analysis, this meta-analysis measured the effectiveness of MDT on two separate, although similar, adolescent populations—adolescent sexual abusers and adolescents with conduct disorder. In the individual studies the data was gathered and the effect size and Cohen's *d* were calculated using the standard Cohen (1988) methodology:

$$d = \frac{M_1 - M_2}{\sigma_{\text{pooled}}},$$

where

$$\sigma_{\text{pooled}} = \sqrt{\frac{\sigma_1^2 + \sigma_2^2}{2}}.$$

The effect size *r* was calculated by the following:

$$r_{Y\lambda} = \frac{d}{\sqrt{d^2 + 4}}.$$

The means and standard deviations were computed using the Lipsey & Wilson (1993) calculation methodology. Cohen (1998) defined effect size as small: $d = .2$, medium: $d = .5$ and large: $d = .8$

Adopting procedures recommended by Rosenthal (1991), each effect size was weighted by sample size, and averaged to yield a grand weighted mean *d* based on 20 studies. Weighting effect sizes by sample size is an unbiased and objective procedure for assigning different weights to studies that vary in statistical power. The grand weighted mean *d* was tested for significance (*d* compared to zero) using a one sample *t*-test, and 95% confidence intervals were calculated. A chi square was also calculated to test for heterogeneity of variance within the set of effect sizes. The heterogeneity test is the basis for a decision on whether or not to search for moderator variables; in case of significant heterogeneity, it would be necessary to disaggregate the effect sizes according to the variables influencing effect size. Finally, to address the file-drawer problem, a failsafe *N*, as recommended by Rosenthal (1991), was calculated to test for robustness. A robust finding indicates that the probability of a Type I error arising from unpublished, non significant results is negligible.

Results

The results will be separated into 3 categories; Individual studies, Family Studies and Mediation effects. We chose to separate the section because of the three separate meta analysis conducted on the selected articles.

Individual studies

Table 3 shows the results of the meta analysis on the individual studies. Cohen's *d* show large effect sizes with SO-Physical Aggression (1.81) and CD-Physical Aggression (1.85). Total Physical Aggression and Sexual Aggression were also large at 1.86 and 1.94 respectively. Child Behavior Check List (CBCL) scores were also large, yet were smaller than the aggression numbers. CBCL scores measuring internal states were 1.10 and External was 1.25. The total CBCL effect size was 1.78. The State-Trait Anger Expression Inventory (STAXI) scores showed internal expressions of anger were not as controlled as external expressions of anger. With subjects who had the Conduct disordered (CD) diagnosed delegation; STAXI scores for inner control was 1.4. Conversely, the control for outward expression was 1.51. The total Anger effect size expressed by

Table 1. List of studies

Study	Sample	DV	Design	*N*	*d*
Apsche (unpublished) (2006)	Juvenile sex offenders	Outcomes	PP	143	128
Apsche & Bass (2006)	Adolescent males with CD/PD	Outcomes	PP	40	1.24
Apsche & Bass (2006)	Outpatient	Outcomes	PP	30	.92
Apsche & Bass (2006)	Family	Outcomes	PP	13	.8
Apsche & Ward Bailey (2004)	Children/adolescent with reactive CD or PD who sexually abuse	Outcomes	PP	20	1.16
Apsche & Ward (2002)	Adolescents with personality beliefs, sexual offending and aggression	Outcomes	PP	14	1.05
Apsche, Bass & Houston (2006)	Adolescent males with aggression	Outcomes	PP	20	1.29
Apsche , Bass & Houston (2007)	Family	Outcomes	PP	20	1
Apsche, Bass & Murphy (2004)	Adolescent male sex offenders with reactive disorder	Outcomes	PP	20	.24
Apsche, Bass & Murphy (2004)	Adolescent males with CD and sexually reactive bxs	Outcomes	PP	30	.92
Apsche, Bass & Siv (2006)	Outpatient	Outcomes	PP	20	1.31
Apsche, Bass & Siv (2005)	Adolescent males with CD/PD	Outcomes	PP	21	1.51
Apsche, Bass & Siv (2006)	Suicidal adolescents with PD/traits	Outcomes	PP	20	.97
Apsche, Bass & Siv (2006)	MDT, SST & CBT- two year post tx	Outcomes	PP	21	1.17
Apsche, Bass, Jennings & Siv (2005)	Adolescent males with CD/PD	Outcomes	PP	40	1.20
Apsche, Bass, Jennings, Murphy, Hunter & Siv (2005)	Adolescent males with physical/ sexual aggression	Outcomes	PP	21	1.13
Apsche, Bass, Siv & Matteson (2005)	Aggressive adolescent males	Outcomes	PP	20	1.22
Apsche, Bass, Zeiter & Houston (2009)	FMDT, residential, adolescents with CD/multi axial	Outcomes	PP	20	.89
Apsche, Siv & Bass (2005)	Adolescents with CD and fire setting bxs	Outcomes	PP	20	.29
Swart, J. & Apsche, J. A. (in press).	Family	Outcomes	PP	20	.89
Swart, J., & Apsche, J. A. (in press).	Family	Outcomes	PP	20	1.22
Swart, J., & Apsche, J. A. (in press).	Family	Outcomes	PP	61	1.4
Apsche, J.A. & Blossom, P. (2013).	Family	Outcomes	PP	41	1.31
Blossom, P. & Apsche, J.A. (2013)	Family	Outcomes	PP	20	.91
TOTAL				**734**	

Table 2. Participant demographic characteristics

Characteristics	%
Axis I	
Conduct disorder	53%
ODD	42%
PTSD	54%
Other secondary	28%
Axis II beliefs	
Mixed	58%
BPD	38%
NPP	28%
HPD	2%
DPD	30%
APD	20%
Ethnicity/Race	
African-American	53%
Caucasian	42%
Latin	4%
Other	1%
Ages	
14.5	10%
15	18%
16	42%
17	30%
Background	
Experienced 4 types of abuse[1]	90%
Witnessed violence	58%
Parasuicidal	24%
Recidivism (two years post-treatment)	
General recidivism	< 7%
SO recidivism	< 4%

N = 734, [1]Sexual, physical, verbal, neglect

this group was 1.82. STAXI effect size scores for Subjects who had offended sexually (SO) were similar to aggressive CD population. Inner control was 1.0. Outward expression of anger control was 1.10. External aggression was among the largest of all groups at 1.9.

Family studies

Table 4 shows the effect sizes of the studies which looked at the family in treatment using Mode Deactivation Therapy. Of the studies chosen Cohen's d produced large effect sizes on most of the categories. The CBCL effect size for internalization was 1.4 whereas, the externalization size was 1.6. The total effect size for CBCL was 1.5. STAXI scores showed 1.3 effect sizes for internal anger control and its expression. Outward anger control was 1.2. The total effect size for anger and its expression was 1.6. Physical expression of anger was large at 1.4 but, the verbal expression of anger showed a medium effect size (.7). Finally, related to physical aggression; Property aggression also showed a large effect size (1.1).

Mediation effects

An analysis of the varying mediation effects showed significant improvement in all of the scales utilized. There was significant reduction of all negative behaviors from intake to post treatment utilizing the STAXI-II and the CBCL. Table 5 shows the results of the analysis. CBCL effect sizes for internalization was .850 and .895 for externalizing behaviors. Total effect size for the CBCL was .9357. The STAXI-II showed effect sizes for Anger Con In of .7311 and .8433 for Anger Con out with total anger expression of .7132.

■ Conclusion

There have been numerous articles to support the effectiveness of the Mode Deactivation framework. The findings of this study show unequivocally that MDT is an effective-evidenced based methodology with the specific target population of male adolescents. Also, the study further validates the MDT hypothesis that adolescent externalizing disorders are the function of adolescent internalizing disorders.

The meta-analysis data demonstrated the effectiveness of MDT with adolescent males, ages 14 through 18. The effect size for the target behaviors, physical aggression for both the conduct groups and the sexual abusing groups, showed significant effect sizes. While the differences in aggressive behavior were statistically the same for sexually offending juveniles and those who have had histories of conduct disorder, sexual aggression was statistically significant in both populations. This suggests that some aggressive adolescents, like those who have histories of sexual offense may begin to use sex as outward expressions of internal anger states. This study illustrated that both the conduct disordered and sexual abusing groups had large effect sizes for their sexual behaviors while in treatment and for two years post-treatment. This finding suggests that Mode Deactivation therapy is a superior form of cognitive behavioral therapy that addresses not just the acting out behavior, but internal states as well. In this study as well as its predecessors; MDT had a

Table 3. Individual studies

Category	Cohen's standard	*d*	*r*	% of non-overlap
SO-physical aggression	Large	1.81	.710	75.3
CD-physical aggression	Large	1.85	.679	51.6
Total-physical aggression	Large	1.86	.674	48.4
Sexual aggression	Large	1.94	.774	72.9
CBCL-INT	Large	1.10	.450	70.2
CBCL-EXT	Large	1.25	.551	74.1
CBCL total	Large	1.78	.581	72.7
CD-STAXI anger con in	Large	1.40	.521	66.7
CD-anger con out	Large	1.51	.612	63.2
CD-anger ex	Large	1.82	.710	75.1
SO-STAXI anger con in	Large	1.00	.428	75.4
SO-anger con out	Large	1.10	.410	50.1
SO-anger ex	Large	1.90	.670	79.5
J-SOAP total	Large	1.89	.721	79.4

N = 17

large effect size in all areas of the CBCL and STAXI. As symptoms of externalizing disorders are addressed, internalizing disorders can be treated. The results of this reevaluation of data show that MDT reduces internalizing disorders. It further supports the idea that these internalizing disorders are the behavioral function of the reduced externalizing disorders. Thus, as symptoms of externalizing disorders decrease, internalizing disorders may appear as comorbid behavioral issues.

This study included several new articles looking at the effectiveness of MDT within the family milieu. For this population, verbal expressions of feeling and internal state maybe met with inconsistent family support. MDT addresses this support issue and operates within the family dynamic to increase needed support by the family unit. Working with families can insure that adolescents receive the wrap around support needed for socially acceptable behaviors. This approach to service is done by teaching family members and youngsters effective ways to engage in dialogue. Its important to note that the entire family is identified client, not just the youngster. Follow-up studies have consistently shown that families who have undergone MDT show less aggression, property destruction and increase in family synchronization. Limitations of this study include the fact that it was conducted with the founder of MDT and his research team. Secondly, the mediators were measured only at intake and post treatment, simultaneous to measurements of anger and aggression outcome. A final known limitation was the sample population. Our population was one of convenience as all were mandated to a treatment condition. Despite these limitations, all methods used were conducted with the utmost professionalism and ethical standard.

Table 4. Family studies

Category	Cohen's standard	*d*	*r*	% of non-overlap
CBCL-INT	Large	1.5	.570	52.3
CBCL-EXT	Large	1.6	.625	56.2
CBCL total	Large	1.5	.600	55.5
STAXI-anger con in	Large	1.3	.545	58.9
STAXI-anger con out	Large	1.4	.554	70.5
STAXI-anger ex	Large	1.6	.625	77.4
Behaviors-physical aggression	Large	1.4	.513	63.1
Behaviors-verbal aggression	Medium	0.7	.330	46.0
Property destruction	Large	1.4	.188	58.9

N = 15

Table 5. Mediation effects

Category	Cohen's standard	*d*	*r*
Anger con-in (STAXII)	Medium	1.81	.731
Anger con-out (STAXI)	Large	3.14	.843
STAXII total	Medium	1.54	.713
CBCL-INT	Large	3.24	.850
CBCL-EXT	Large	3.95	.895
CBCL-Total	Large	5.76	.935

N = 734

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Effectiveness of quality of life therapy on sexual self-efficacy and quality of life in addicted couples

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Abstract

Introduction and Aim: Addicted people as vulnerable communities face to psychological emotional, social and economic problems which have negative impacts on their quality of life and sexual self-efficacy that keeps them from participating in daily activities. This study investigated quality of life therapy on addicted couples' sexual self-efficacy and quality of life in treatment period in Qazvin city.

Methods: This study examined two groups of 10 people of addicted couples' of treatment period in Qazvin city (one of Iran's Cities) who were selected by sequential sampling ($N = 40$). World Health Organization QOL (short form) and Reynolds' sexual self-efficacy scale were used to collect data. Experts performed nine sessions of training in the form of therapy. No variables were applied in the control group as they were waiting for training. After intervention both groups were tested. Descriptive and inferential statistics were used to analyze data.

Results: The results showed that training significantly improved quality of life and sexual self-efficacy of addicted couples' in treatment period of Qazvin city. Scores which obtained in experiment and control groups were significant ($p < 0.05$).

Conclusion: Quality of life therapy empowers people to actualize their knowledge, attitudes and values. Quality of life therapy will also enable them to have motivation of healthy behavior which this will have significant impact on their quality of life and sexual function.

Keywords

quality of life, sexual self-efficacy, addict

Addiction is a chronic and relapsing disease that several genetic, mental, social and environmental factors in interaction with each other lead to the initiation and continuation of it. Like other mental illnesses, addiction is rooted in several factors that each person may have special group of confounding factors and if only one of those factors considered in addiction treatment and other factors were not be not focused assuming the positive effects of that factor, other parameters can reduce effect of that factor (Whashton, 2007). Therefore, current methods of treatment don't have adequate efficacy and even in the best treatments success rates in yearlong have been reported 30-50% (Brien & McLellan, 2006). All factors are considered essential in treatment.

Addicted people as vulnerable communities face to psychological emotional, social and economic problems that have negative impacts on their quality of life and sexual self-efficacy that keeps out them from daily activities (Chen, Yeh & Lee, 2009; Elliot et al, 2006).

National Institutes of Health has defined erection malfunctions as inability to make or maintain an erection sufficient penis (as satisfactory sexual activity) and this disorder can be progressive (National Institute of Health, 1993). This is the most common sexual dysfunction among men. More than 30 million men in North America and more than 150 million men worldwide have been reported some form of this disorder (Aytac, MacKinlay and Krane, 2003).

The main cause of undersexed in men was not enough pressure in sexual organs system, physical factors and psychological factors. The physical factors include cardiovascular disease, diabetes, nervous system disorders, hormonal problems, surgeries, strokes, chronic medical conditions, lifestyle inactive and excessive consumption of alcohol and smoking. Psychological factors include low self-esteem, stress, depression and communication problems (Miller, 2000; Lue, 2004; Melman and Gingell, 1999; National Institute of health, 1993).

Dysfunctional erections can emotionally and physically affect the self-image of a man's self-image and his relationship with partner. Dysfunctional erections can be associated with some social -psychological issues, such as depression, anxiety about sexual performance, denial of sign, refusing sex, relationship distress and disruption in life (Feldman, Goldstein and Hatzichristou, 2005). Similarly, quality of life is related to health and its individuals' subjective assessment about their current health status, medical care (Liu, 2006).

Regarding the importance of family and avoidance of splintering it, understanding factors associated with sexual self-efficacy are essential for stability of family life. It is expected by increasing sexual self-efficacy in couples, especially addicts, mental, emotional and social problems would be reduced. Also, by upgrading level of sexual self-efficacy and satisfaction of life, people will pay to the social, cultural and economic progress with more peace of mind (Sanaii, Alaghband and Hooman, 2000).

Researchers such as Carroll, Ebener &Gawin (2009), Mandel, Edelen,Wenze, Dahl & Rounsaville (2008) know training strategies are effective to improve physical and mental health of addicts. However, researchers show that training interventions can be effective in addicted people to enhance quality of life and increase their performance of immune system and hopefulness in them (De Leon, 2006).

One appropriate method of intervention groups is based on quality of life. Quality of life therapy is based on a new approach that was founded by Frisch (2006) and includes integration of positive psychology and cognitive therapy. It is associated with the latest Beck's conformation of cognitive therapy, cognitive theory of depression and mental pathology. Quality of life therapy involves an approach to increase satisfaction of life. Satisfaction of life can be described as individual assessment of various aspects (Frisch, 2005). Quality of life therapy tries to integrate and use latest researches and theories related to happiness, positive psychology and management of emotions with insight arising from clinical work and positive psychology in effective form.

Quality of life -as the main aim is to create welfare and satisfaction of life- is based on pattern of 5 methods, CASIO, which is abbreviated from these words: Circumstance, Attitude, Standards of fulfillment, Importance, and Overall satisfaction. It includes 1) Conditions or objective features, 2) Attitude or how perception and interpretation of conditions by person, 3) personal assessment based on standards of fulfillment or success, 4) values that people have in relation to their overall health or happiness about a field and 5) These four (CASI) combined with a fifth concerned with Overall satisfaction life that are not of immediate concern (Leplège et al., 1997; Furuseth, 1990).

This research is based on quality of life therapy by working on various fields and enables all aspects of life in addicted couples who are in treatment. This method is trying to provide a positive psychology and cognitive strategies to increase quality of life and sexual self efficacy. The present study uses a Frisch model (quality of life therapy) based on cognitive therapy and positive psychology to intervene in quality of life and sexual self-efficacy.

Method

This research is a quasi experimental study that was conducted in 2011. The study sample included two experimental and control groups of 10 addicted couples in Qazvin city (one of Iran's Cities) ($N = 40$). All participants (in control and experiment group) were aged between 20 to 55 years. The control group did not receive any intervention and just were taken pre-test and post-test.

Inclusion criteria: satisfaction of couples to participate in intervention, at least third grade secondary education

Exclusion criteria: illiteracy, physical and psychological disorders

Measures

1-World Health Organization quality of life questionnaire (short form): This scale includes two parts. The first part is devoted to background information and demographic questions which including name, family name, age, sex, marital status, economic status, disease history, and so on. Second part consists of 26 questions that measures quality of life in four domains: physical health, psychological health, social relationships and social environment (World Health Organization, 1998). Since 1996, validity and reliability of the questionnaire has been done in

Table 1. Covariance analysis in evaluation of quality of life therapy on sexual self-efficacy and quality of life in addicted couples

Index sources variation		Type III sum of squares	*df*	Mean square	*F*	sig.	Partial eta squared
Group effect	Physical health	99.033	1-38	99.033	16.243	0.019	0.483
	psychological / physical Image	152.139	1-38	152.139	19.873	0.003	0.579
	Social relations	100.873	1-38	100.873	12.247	0.005	0.648
	Environmental health	235.281	1-38	235.281	9.241	0.045	0.372
	Pleasurable sexual intercourse without apprehension	235.245	1-38	235.245	68.364	0.000	0.643
	Maintaining of erection during sexual intercourse	148.728	1-38	148.728	134.910	0.001	0.780
	To ensure sexual confrontation	112.915	1-38	112.915	113.570	0.003	0.749
	To reach orgasm	62.500	1-38	62.500	46.447	0.000	0.550
	Sexual desire again	67.600	1-38	67.600	92.072	0.001	0.708

countries and different cultures by the World Health Organization. Bonomi et al, in the internal reliability of this test, reported coefficient 0.83 to 0.95. Also, Natalie in chronic group reported that reliability of this test is 0.90 and in group of normal individuals is 0.86 (Williams, 2000). In Iran, Rahimi (2002) estimated its reliability coefficient 0.89.

2-Sexual Self-Efficacy Scale-Erectile Functioning: This scale is based on reviews of Bandura, Adams and Beyer(1977) sexual treatment questionnaire (Lobitz and Baker, 1979) and Erectile Difficulty Questionnaire (Reynolds, 1978). Higher scores show more competence and qualifications of the erectile men in this scale. This scale consists of 26 questions and 4 subscales, which include pleasurable sexual intercourse without apprehension, maintaining of erection during sexual intercourse, to ensure sexual confrontation, to reach orgasm, and sexual desire again.

Libman, Rothenberg, Fichten and Amsel (1985) showed split-half reliability for sexual efficacy scale in men and their couple respectively 0.88, 0.94. In Iran, Rajabi et al, (2012) with the use of factor analysis, obtained Cronbach's Alpha in total 0.95 and for five factors was in range 0.91–0.82. Subscales include pleasurable sexual intercourse without apprehension, maintaining of erection during sexual intercourse, to ensure sexual confrontation, to reach orgasm, and sexual desire again.

Procedure

First session: introduction, declaring group's rules and objectives, introducing of CASIO model, discussing about quality of life, take pre- test and feedback.

Second Session: define therapy based on quality of life, introduce aspects of life, introduce tree of life to group members and discover roots of clients' problems.

Third session: present five-stage CASIO model for satisfaction in life, environment and family because of three-stage strategy "loving it "," renouncing it" or "repair it." Take tasks, checklists and related principles of neighborhood or community attitudes and greater satisfaction on neighborhood or community.

Fourth session: review previous sessions, start with one of the CASIO aspect, introduce the Circumstance and its usage in dimensions of quality of life.

Fifth session: review assignments, discuss and feedback about CASIO, introduction of SIO (Standards of fulfillment, Importance, Overall satisfaction) as other strategies to enhance satisfaction of life.

Sixth Session: review assignments, discuss principles about quality of life and explain application of these principles to increase quality of life.

Seventh session: reviewing assignments and continuing the discussion about important principles and application of them in couples' relationships with their partner and discuss about sexual relationship.

Eighth session: review assignments, design and practice a plan, in order to prevent of replacing and maintaining achievements of people about habits which are under control of them. To create plan in prevention of couples' replacing, discuss then give conclusions and feedback.

Ninth session: provide summary of all sessions, conclusion about CASIO in different life situations and apply principles in different aspects of life.

Two months after the training the questionnaires were carried out again. Post-intervention analysis was conducted then data were analyzed by using software SPSS version 19 and Covariance test.

Note: In order to comply with ethical principle of justice in study, after our research quality of life therapy was also held for control group.

Results

According to Table 1 and significant at level of $\alpha = 0.05$, and η, it can be concluded that therapy in quality of life's subscales, including physical health, psychological/physical image, social relations, environmental health has been effective. Therapy based on quality of life in sexual self-efficacy has been effective as well, including pleasurable sexual intercourse without apprehension, maintaining of erection during sexual intercourse, to ensure sexual confrontation, sexual desire again, to reach orgasm in addicted couples was significant ($p < 0.05$).

Conclusion

Addicted people as vulnerable communities, in addition to physical consequences of addiction, face psychological, emotional, social and economic problems that will have a negative impact on their quality of life and sexual self-efficacy that keeps them from participating in daily activities. The results of different research suggest that the need of mental health care is one of the most basic needs of addicts, which reduce their replacing (Young, 2005).

Practice on different priorities and increasing satisfaction of addicted couples can not cover important dimensions of life. This study was trying to change priorities and enhance satisfaction that were not paid attention to in the past, and provide strategies and principles of therapy to increase quality of life.

Quality of life therapy also changes the attitudes and emotions of couples, as well as increase their relationships. Considering the importance of sexual relationships is the most important issue in life and it has been considered a barometer of emotional relationships. It also reflects aspects of couples' satisfaction therefore and is good scale for overall health in couples' relationships (Olson, 2004). Use of this therapy can increase the sexual efficacy and quality of life between couples to improve their relations. The use of this therapy can increase quality of life and sexual self-efficacy between couples. It improves overall in couples.

This program will provide necessary knowledge in the field of having life styles with quality in addicted couples. Although the sampling method available from the community is a limitation of this research, therapeutic intervention and the developmental promotion of other therapists and researchers for this group of visitors is recommended because of the effectiveness of the treatment program. Also, the impact of this intervention on more cities and different cultures is suggested.

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A brief review and update of mode deactivation therapy

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Abstract

Mode Deactivation Therapy (MDT) is the most recent type of therapy among the new third wave therapies for the treatment of aggression, aggressive sexual disorders, conduct disorders, and oppositional conduct disorders among juvenile adolescent males. The goal of MDT is to alter specific behaviors that fall outside socially acceptable norms. The purpose of this article is to examine the effectiveness of third wave treatments across various adolescent populations. Multiple research studies have validated the overall reduction in recidivism and other criminal offenses as a result of receiving Mode Deactivation Therapy. Through the use of Mindfulness, Cognitive Behavioral Therapy, Dialectical Behavioral Therapy, and Functional Analytic Psychotherapy, Mode Deactivation Therapy has proven to be an effective treatment for multiple disorders in the adolescent male population.

Keywords

Mode deactivation therapy (MDT), third wave treatments, mindfulness, cognitive behavioral therapy (CBT), dialectical behavioral therapy (DBT), functional analytic psychotherapy

Adolescence is a difficult period for any individual. Hormones, peer relations and emotional development rarely mix smoothly. According to domestic violence statistics over 10 million children are witness or victims of abuse (Linehan, 1993) as cited by the website domesticviolencestatistics.org (2014). These individuals find adolescence explosive and volatile. As men, the boys are twice as likely to become the abuser. Anxiety, Posttraumatic Stress Disorder (PTSD), physical aggression and inappropriate sexual behavior would become the behavioral expression of their misaligned emotional states (Bass & Apsche, 2013). These adolescents enter the system with a diagnosis of Conduct Disorder or Oppositional Disorder (Hollman, 2010). Rarely has a youth entered the juvenile justice system or therapy voluntarily; it is usually court ordered. For many therapists the goal is to simply manage their anger and re-direct the behavior; the first of these treatments is behavioral based.

In 1996, Aaron Beck developed the concept of Modes or core beliefs that impacted psychological functioning (Hollman, 2010). Beck posited that people learned from unconscious experiential components and cognitive structural processing components. Unconsciously a belief would be held internally and could activate anger and aggression, especially during interpersonal situations. In a study of over 500 males diagnosed with Conduct Disorder or Oppositional Conduct Disorder, 90% had personal history of sexual, physical and emotional abuse. This victimization altered their "real world" response to interpersonal situations (Hollman, 2010). A touch can be interpreted as an attack sparking inappropriate responses. Deviant and sexual behaviors are dysfunctional due to dysfunctional modes or schemas and in order to change a person's behavior, the experiential components have to be restructured (Apsche & DiMeo, 2010). By ending the dysfunctional behaviors and habitual responses and replacing them with self-awareness, acceptance and regulatory skills, this violent adolescent male population can recover (Hollman, 2010). This article will examine the third wave treatments and their effectiveness across various populations. The third wave therapies are defined by their nonjudgmental approach to the thoughts, feelings and behaviors found in vulnerable population.

■ Third wave therapies

Treatments like Cognitive Behavior Therapy (CBT), Dialectical Behavior Therapy (DBT), Functional Analytic Psychotherapy (FAP), and Acceptance and Commitment Therapy (ACT) were the beginning of what is now termed the third generation of treatment (Hollman, 2010). Founded by Robert Kohlenberg and Mavis Tsai, Functional Analytic Psychotherapy (FAP) is a behavioral approach to therapy (Kohlenberg, 2012) and was based on B.F. Skinner's theories on human development (Bowen, Haworth, Grow, Tsai, & Kohlenberg, 2012). Its focus is on implementing a close and intense relationship between the therapist and the client. Its purpose is to treat the functional, contextual, analytical modes of human development while producing an intense personal therapeutic relationship (Bowen, et al, 2012). The core condition that FAP clients present are within the presence or lack of human relationships. In FAP, the therapeutic relationship is the healing vehicle for the patient. The therapeutic relationship consists of a sacred space, awareness, courage and love. The overall intent is to increase personal closeness with others through experiential skills teaching (Bowen, et al, 2012).

Since avoidance of openness and honesty in interactions with others is a major problem associated with interpersonal relationships, the client is encouraged to overcome the avoidance by taking a risk and being open and honest with others. Overcoming avoidance is accomplished through mindfulness training (Bowen, et al., 2012). By teaching the client to be aware of their thoughts and that they are only thoughts, the automatic maladaptive pattern can be shifted to a new perception and the client's behavior is decentered (Bowen, et al., 2012). This is also known as re-perceiving. A new behavior occurs in previous situations that elicits stimulus control (Bowen et al, 2012). Both FAP and Mode Deactivation Therapy (MDT) use meditation to produce this therapeutic safe zone. All of the therapies are unique in that they incorporate awareness, trust and acceptance. In terms of effectiveness, MDT has been empirically evidenced as a valuable treatment for adolescents diagnosed with Conduct Disorders, Oppositional Disorders, Proactive and Reactive Aggressive Disorders, PTSD, and more recently Sexual Behaviors (Apsche & DiMeo, 2010; Jennings, Apsche, Blossom, & Bayles, 2013).

Mode Deactivation Therapy (MDT) , introduced by Dr. Jack Apsche, incorporated a nonjudgmental concept and mindfulness to the programs previously used to treat adolescent males with Conduct Disorders and Oppositional Disorders compounded with Post Traumatic Stress Disorder, ages 14–17 (Bass & Apsche, 2013). Unlike Functional Analytic Psychotherapy (FAP), MDT uses the therapeutic relationship as a basic foundation while encompassing the family support system. The client is encouraged to continue their practicing of new skills outside the therapeutic office. For FAP clients, the client/therapist relationship is the central component of the treatment. The ancient practice of meditation usually consists of sitting or walking quietly while paying attention to one's interpersonal experience (Bowen, et al. 2012). This century old practice, mindfulness has become mainstream methodology in mental health treatment; it is a new development in the treatment of adolescents, especially adolescents displaying sexual behaviors related to their exposure to violent family life (Jennings, et al., 2013). When used in Mode Deactivation Therapy, the meditation is simply calming moment that allows the client to experience the moment, the thought and the stimuli without judgment. Mediation in Mode Deactivation Therapy consists of three deep breaths, body relaxation and then a moment to feel and experience. With MDT, the client is encouraged to use the new skill set in everyday situations. The skill of active mediation allows the client to feel in control of daily activities. This can be done during ordinary moments in life like walking in a park or riding on a bus (Jennings, et al. 2013). Meditation in Mode Deactivation Therapy is not clinical silence but awareness in ordinary moments and sensations. The process of meditation enhances the youth's level of awareness.

■ Why mindfulness?

Psychologist, Fritz Perls (1969), realized the core value of the client gaining immediate awareness of sensation, perception, emotion, thought, behavior, and bodily feelings. He understood the therapeutic effects of staying in the "here and now" (Jennings, et al, 2013). Mindfulness is achieved through a series of awareness and observation exercises, specifically designed for adolescents. This technique helps the youth develop trust, reduces anxiety, and increases commitment to treatment. Mindfulness allows the youth to know and accept exactly where and how he should be as a person given his history of abuse (Apsche & DiMeo, 2010).

Perls' first clinical trial using mindfulness was in 1969 as a stand-alone therapy. He attempted to unify the mind, body, and spirit of an individual in Gestalt Therapy. Defined as the "intentional process of observing, describing, and participating in reality, nonjudgmentally, in the moment", Greco and Hays (2008, p. 4), as cited by Jennings et al (2013), mindfulness has become a key factor in overcoming the traditional limitations of traditional CBT which challenged the youth's beliefs as dysfunctional. MDT uses direct training in mindfulness skills with

adolescents as a major intervention in the process of deactivating the youth's maladaptive mode responses (i.e. emotional dysregulation). Because of their emotional dysregulation, these adolescents were naturally resistant and reacted as severely dysfunctional. To relieve the appearance of the treatment being threatening, Drs. Jennings and Apsche (2013) developed a diverse toolkit of non-threatening ways of teaching mindfulness skills. Their methods toolkit included breathing exercises, guided imagery meditation, visual concentration tasks, nature walks, sensory explorations, and intentional, fun-packed activities such as sports and adventures that adolescents were willing to engage (Jennings, et al, 2013).

Mode Deactivation Therapy borrowed acceptance treatment from Marsha Linehan, who developed Dialectical Behavioral Therapy (DBT), when it was discovered that Cognitive Behavioral Therapy (CBT) was not able to help women with Borderline Personality Disorder (Linehan, 1993). Linehan's practice focused on women who self-harmed due to emotional dysregulation, dual diagnosis, mood disorder and eating disorder. Their lack of behavioral coping skills resulted in self-harm or self-mutilation such as cutting, eating disorders and suicide ideation. Linehan saw no progress in her clients until acceptance and change strategies were introduced. The main goal for Linehan was to keep the client alive, keep them in therapy and give them a quality of life (skills). By doing that, Linehan had to develop acceptance strategies that validated the client's feelings as perfectly normal while other behaviors could be produced without shame dominating the client (Linehan, 1993). The main goal of Mode Deactivation Therapy is to alter specific behaviors that fall outside socially acceptable norms. Through the use of Validation—Clarification—Redirection the therapist is able to transform detrimental, learned beliefs about the adolescent's environment into functional beliefs that are more balanced and lead to more compliant behaviors (Apsche, Bass & Backlund, 2012).

Mode Deactivation Therapy (MDT) incorporated the best of all these other treatments and rose above those beginnings with the addition of Validation, Clarification and Redirection (VCR). VCR is the core of the MDT effectiveness. While speaking through the mediation, thoughts and emotions are validated or considered to be the truth (Apsche & DiMeo, 2010). Unlike Cognitive Behavioral Therapy, the core beliefs (schemas) are not challenged by the therapist as dysfunctional but considered to hold a grain of truth (Apsche & DiMeo, 2010). Their sub-organization of personal modes was designed to combat specific demands of the problem. The modes, the focus of MDT, are labeled cognitive, affective, motivational and behavioral (Apsche, Bass & Backlund, 2012). Because MDT consistently validates the youth's life experiences as legitimate, the therapist clarifies the content of the beliefs and the re-directs the beliefs in order to create a balance in the youth's beliefs. This helps the youth identify the illogical and irrational beliefs that activated his emotional response that he unconsciously held. The clarification step of the MDT process is crucial to the therapist and the youth's understanding the belief system (Apsche, Bass, & Houston, 2008). The final step of the VCR process is the intervention or redirection phase. The therapist redirects the youth's views to alternative possibilities to the beliefs that he currently holds. The validation, clarification, and redirection technique uses unconditional acceptance and validation of the youth's unconscious learning experience according to Apsche and DiMeo (2010) as it measures his acceptance of a slightly difference belief (Houston, Apsche, & Bass, 2007).

In most recent developments with MDT, as a specialized form of treatment for adolescents, the therapy has advanced to an even more aggressive form of treatment for adolescents with oppositional dynamics. Drs. Jennings and Apsche adopted the principles of validation, radical acceptance, balancing, and mindfulness (Jennings, et al, 2013). These principles, borrowed from DBT, joined the youth in collaboratively discovering how the youth's belief system is a reflection of his own life experiences, relationships, sense of self, and world view. Just as with ACT, the youth learns how to accept without judgment; MDT helps the youth to radically accept his or her beliefs as truths no matter how irrational; there is always a grain of truth in their story. MDT continually validates perceptions of reality, accepting the youth for who he or she is based on his or her belief systems which builds trust and collaboration with the therapist. Through MDT the youth and the therapist, together, apply cognitive balancing to introduce increasingly flexibility into the rigid and maladaptive dichotomous beliefs of the adolescent by opening the youth to the possibilities of an alternate continuum of truths and/or possibilities (Jennings, et al. 2013).

As a treatment for sexually abusive male adolescents, Apsche and colleagues (2005) compared the effectiveness of MDT to CBT and Social Skills Training (SST) with adolescents in an average residential treatment program of 11 months with 60 adolescents with serious sexual and aggressive problems (Jennings, et al, 2013). All three therapies were successful in reducing rates of physical aggression, but only MDT, with its focus on mindfulness, demonstrated a significant reduction of reduction in sexual aggression (Jennings, et al.). In a two year follow up study, only those who received treatment with MDT could boast a 7% drop in recidivism with no serious sexual or physical offenses (Bass & Apsche, 2013; Hollman, 2010). Twenty percent of the CBT group resulted in chargeable offenses of sexual and aggressive offences, auto theft, and drug sales. Forty-nine and one half percent of the social skills training (SST) group committed offenses that included attempted murder, rape, aggravated assault, and other serious offenses (Jennings, et al., 2013).

In 2010, Apsche and DiMeo conducted a meta-analysis of the effectiveness of MDT over a ten year period. This analysis consisted of published and unpublished (at that time) data. A review of 458 cases of adolescent males revealed more than half (55.5% had sexual offenses. Fifty-two percent were diagnosed with Conduct Disorder, 45% with oppositional defiant disorder, and 51% were diagnosed with PTSD (Jennings, et al, 2013). Overall, 92% of the adolescents had experienced four types of abuse, 54% witnessed violence, and 28% of the adolescents presented with parasuicidal behaviors. Large effect sizes reported in the meta-analysis included Sex Offender/Physical Aggression (1.78), Conduct Disorder/Physical Aggression (1.85), Total Physical Aggression (1.82), and Sexual Aggression (1.80). Taking into consideration that effect size of 0.5 is medium and values of 0.8 are considered to be large effect sizes. This demonstration of such large effect sizes and reduced rates of recidivism strongly suggests that MDT (a mindfulness-based therapy) is an effective treatment in complex disorders and conditions, including sexually deviant behaviors (Jennings, et al, 2013).

As stated by Hollman (2010), MDT is one of the "Third Wave" treatments available today for vulnerable populations that display corruptive behaviors within personal interactions for multiple reasons. This type of treatment was founded out of necessity and has earned empirical evidence that it has been beneficial for adolescent males engaged in aggressive sexual deviance, conduct disorder, and oppositional conduct disorder (Bass & Apsche, 2013; Hollman, 2012; & Jennings, et al., 2013). Acceptance treatments are essential in healing those who have been victim or witness to abuse and neglect. MDT stands alone in its ability to treat all PTSD populations, regardless of sex or race or diagnosis. The use of active mediation allows the participants to feel centered in everyday activities not just in the therapeutic office. MDT gives the client power to choose adaptive behaviors and lose the knee jerk responses they previously used.

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