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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.

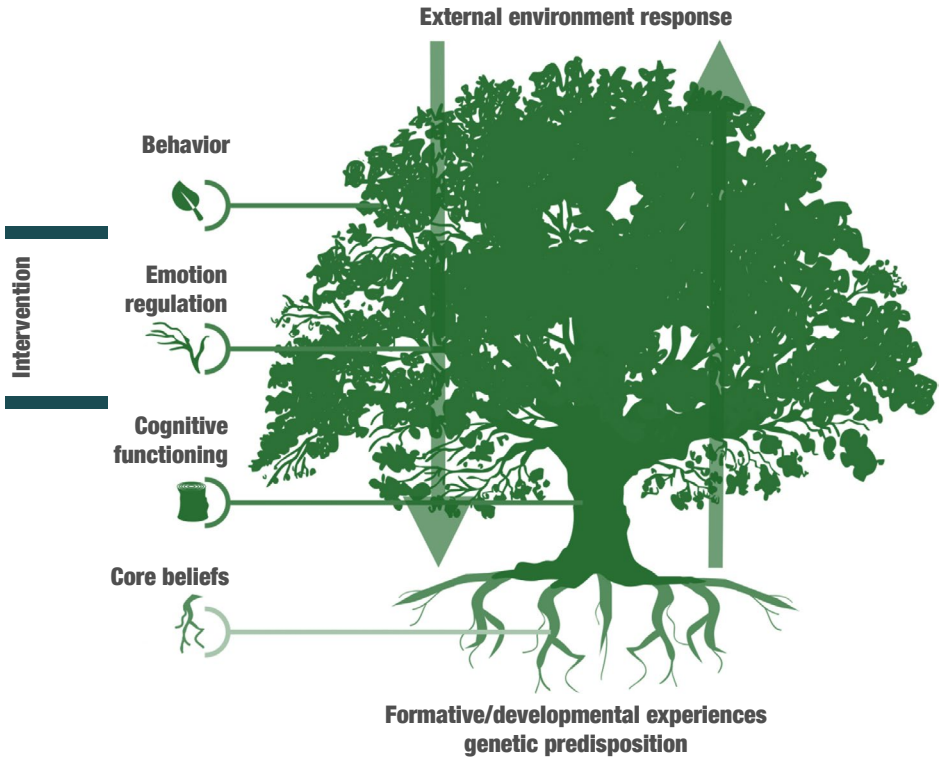

Figure 1. MDT dynamic process

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

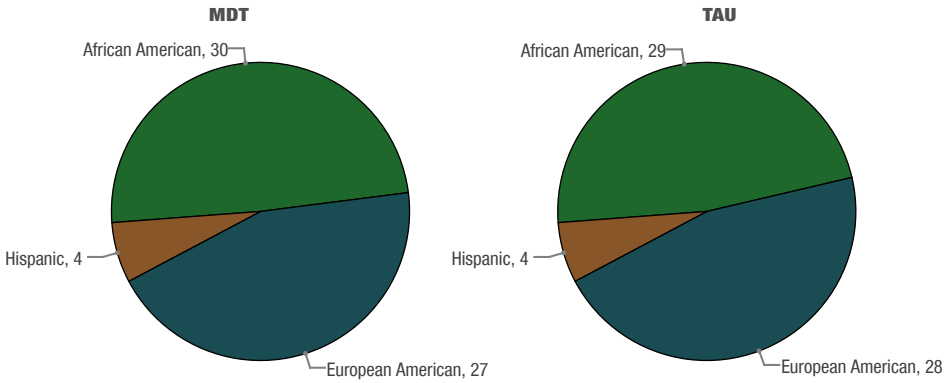

Figure 2. MDT and TAU groups racial composition

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

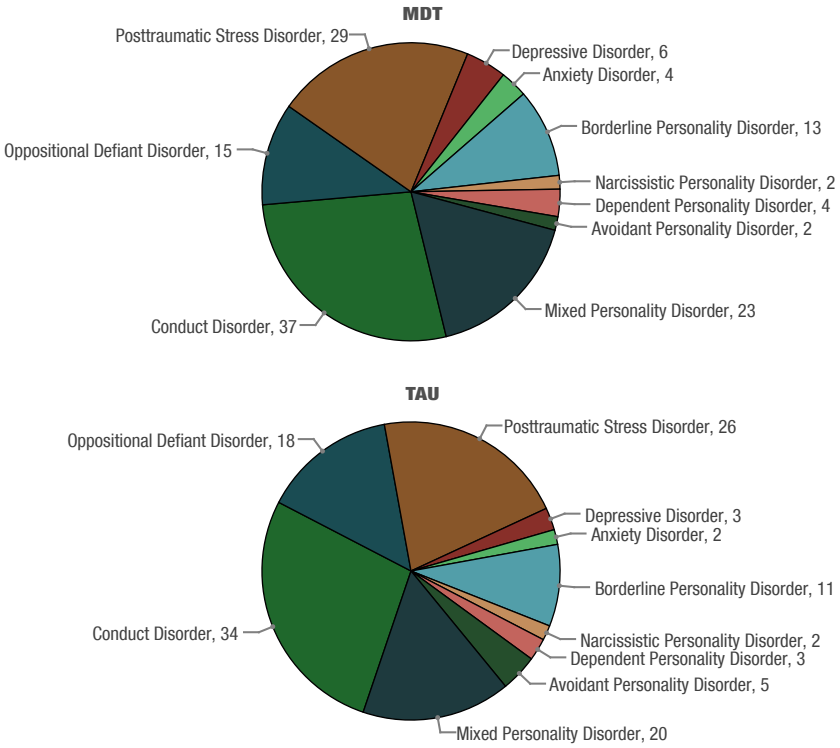

Figure 3. MDT and TAU groups diagnostic information

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

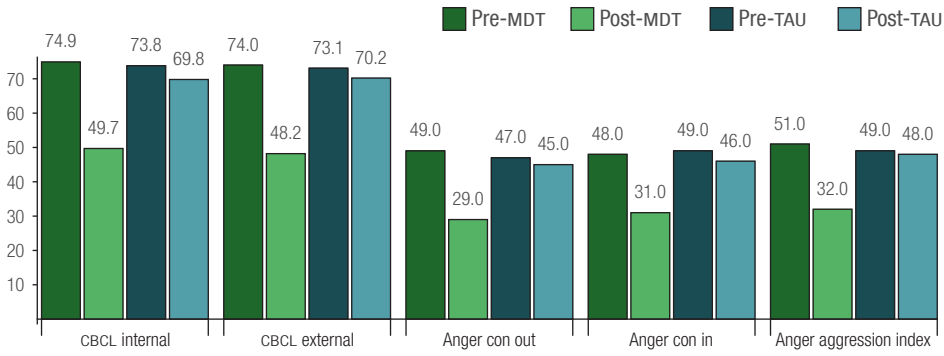

Figure 4. CBCL and STAXI results for MDT and TAU groups

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

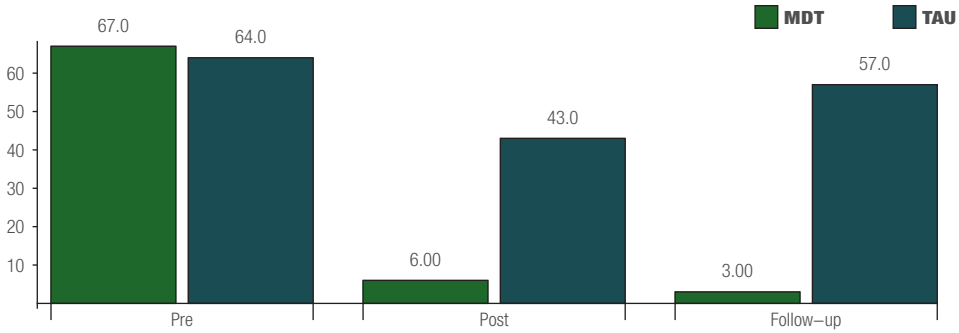

Figure 5. Incidents of physical aggression reported for MDT and TAU groups

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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