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# Multidimensional Family Therapy as a community-based alternative to residential treatment for adolescents with substance use and co-occurring mental health disorders $^{,, \star, \star}$



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#### ABSTRACT

This randomized clinical trial (RCT) compared Multidimensional Family Therapy (MDFT) with residential treatment (RT) for adolescents with co-occurring substance use and mental health disorders on substance use, delinquency, and mental health symptoms. Using an intent-to-treat design, 113 adolescents who had been referred for residential treatment were randomly assigned to either RT or MDFT in the home/community. The sample was primarily male (75%) and Hispanic (68%) with an average age of 15.4 years. Seventy-one percent of youth had at least one previous residential treatment placement. Participants were assessed at baseline and at 2, 4, 12 and 18 months post-baseline. During the early phase of treatment (baseline to 2 months), youth in both treatments showed significant reductions in substance use [substance use problems (d = 1.10), frequency of use (d = 1.36)], delinquent behaviors (d = 0.18) and externalizing symptoms (d = 0.77), and youth receiving MDFT reported significantly greater reductions in internalizing symptoms than youth receiving RT (d = 0.42). In phase 2, from 2 to 18 months after baseline, youth in MDFT maintained their early treatment decreases in substance use problems (d = 0.51), frequency of use (d = 0.24), and delinquent behaviors (d = 0.42) more effectively than youth in RT. During this period, there were no significant treatment differences in maintenance of gains for externalizing and internalizing symptoms. Results suggest that Multidimensional Family Therapy is a promising alternative to residential treatment for youth with substance use and co-occurring disorders. The results, if supported through replication, are important because they challenge the prevailing assumption that adolescents who meet criteria for residential treatment cannot be adequately managed in a non-residential setting.

### 1. Introduction

Residential treatment has typically been the recommended intervention for youth with substance use and mental health disorders who have not responded to less restrictive treatments, require stabilization, present a danger to themselves or their families, or demonstrate a public safety risk (Drake, O'Neal, & Wallach, 2008; Winters, Tanner-Smith, Bresani, & Meyers, 2014). Most youth referred to residential treatment present with a spectrum of substance use, mental health, and delinquency problems (Riggs, 2003; Rowe, Liddle, Greenbaum, & Henderson, 2004; Weiner, Abraham, & Lyons, 2001). Either as an antecedent or consequence of significant substance use and mental

health challenges, youth referred to residential substance abuse treatment evidence impairment in many areas of life, including educational/vocational, family, social, and legal (Deas & Brown, 2006; Subramaniam, Stitzer, Clemmey, Kolodner, & Fishman, 2007; Toumbourou et al., 2007; Wise, Cuffe, & Fischer, 2001).

Present evidence does not permit firm conclusions about the effectiveness of residential treatment or the treatment of adolescents with substance use and co-occurring mental health disorders. There are relatively few rigorous studies on the effectiveness of residential treatment for adolescents. Existing studies are often hampered by weak designs, and there are few randomized clinical trials comparing residential treatment to alternative treatments (Edelen, Slaughter,

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McCaffrey, Becker, & Morral, 2010; Toumbourou et al., 2007; Tripodi, 2009). Nevertheless, important indications of evidence for the effectiveness of residential treatment can be gleaned from evaluations and quasi-experimental designs. For example, studies suggest that residential treatment reduces adolescent symptoms and improves their psychosocial functioning (Bean, White, Neagle, & Lake, 2005; Black & Chung, 2014; Caldwell & Van Rybroek, 2005; Fishman, Clemmey, & Adger, 2003; Grella, Hser, Joshi, & Rounds-Bryant, 2001; Hair, 2005; Morral, McCaffrey, & Ridgeway, 2004; Winters, Stinchfield, Opland, Weller, & Latimer, 2000). This appears especially true for youth who complete treatment (Jainchill, Hawke, DeLeon, & Yagelka, 2000) and participate in aftercare (Godley, Godley, Dennis, Funk, & Passetti, 2006). Recent research suggests exemplary outcomes among youth who spend sufficient (i.e., 1-6 months), but not too much, time (10 months or more) in a residential program (Strickler, Mihalo, Bundick, & Trunzo, 2016). Nevertheless, residential treatment gains appear to diminish after discharge (Brown, D'Amico, McCarthy, & Tapert, 2001; Hser et al., 2001; Morral et al., 2004). Finally, studies comparing residential to non-residential alternative treatments are uncommon. However, when they have been done, they typically reveal no treatment differences among modalities (Barth et al., 2007; Henggeler et al., 1999; Kwok, Yuan, & Ougrin, 2016; Mattejat, Hirt, Wilkin, Schmidt, & Remschmidt, 2001; Weisz et al., 2013).

The high costs of residential treatment, findings suggesting diminishing effects following discharge, no significant treatment modality differences, and the disruption to youth and families created by out-of-home placements are all cause for concern. For these reasons, many policymakers in both the United States and Europe have turned to intensive outpatient and in-home treatments as alternatives to residential care (Heggeness & Davis, 2010). However, policy makers are turning to community-based treatments without the benefit of rigorous research to support this policy change. To our knowledge, there are no randomized clinical trials comparing non-residential to residential substance use treatment for adolescents.

Family-based treatments are utilized as an alternative to residential treatment because they have a strong evidence base supporting their effectiveness with adolescent problems (Tanner-Smith, Wilson, & Lipsey, 2012; Van der Pol, Machteld, et al., 2017). Intensive familybased treatments effectively reduce family and community environmental risk factors that contribute to adolescent problems and successfully keep teens from costly out-of-home placements (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Liddle et al., 2006). Multidimensional Family Therapy (MDFT), a family-based treatment, is an effective non-residential treatment for adolescent substance use, delinquency, and mental health disorders (Dakof et al., 2015; Greenbaum et al., 2015; Henderson, Dakof, Greenbaum, & Liddle, 2010; Liddle et al., 2001; Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008; Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009; Rigter et al., 2013; Rowe et al., 2016; Schaub et al., 2014; Van der Pol, Henderson, Hendriks, Schaub, & Rigter, 2017). Given MDFT's effectiveness in treating adolescent substance use and delinquency, it seems reasonable to suggest that MDFT might be a viable non-residential alternative for youths with co-occurring mental health disorders referred for residential substance use treatment.

In order to address the important empirical question of whether non-residential treatment may be equally or more effective then residential treatment, we report results from an intent-to-treat (ITT) randomized clinical trial (RCT) comparing residential treatment (RT) with a non-residential alternative, Multidimensional Family Therapy (MDFT), for the treatment of substance use, delinquency, and symptoms associated with mental health disorders. We hypothesized that: (1) in the early phase of treatment, RT youth (being in a controlled

environment) would show superior outcomes to youth in MDFT (being in the community); and (2) from 2 to 18 months, youth receiving MDFT would sustain treatment gains more significantly than youth who received RT.

#### 2. Materials and methods

## 2.1. Sample characteristics

Eligible participants were: (a) between the ages of 13 and 18, (b) diagnosed with a substance use disorder and at least one comorbid psychiatric disorder; (c) referred and approved by the State of Florida Department of Children and Families (DCF) for state-subsidized residential, dual diagnosis substance use treatment<sup>2</sup> (Florida Supplement to the ASAM http://sfbhn.org); (d) known to have failed a previous treatment for a substance use disorder, or presenting with severe symptoms warranting a higher level of care either because of safety reasons or because this treatment was ordered by a judge; (e) living in the custody of a parent/caregiver (i.e., not in DCF custody) at the time of referral to residential treatment; and (f) not currently suicidal, demonstrating psychotic symptoms, or diagnosed with autism spectrum or intellectual disability disorders. Referrals came from a substance use assessment and stabilization facility that received referrals primarily from the juvenile justice and child welfare systems (67%), or directly from juvenile justice (18%), child welfare (3%), educational institutions (2%), or the adolescent/family (10%).

# 2.2. Assessments and procedures

The University of Miami Institutional Review Board (IRB) approved and monitored the study. Youth were randomly assigned to MDFT (n=57) or RT (n=56) using an urn randomization procedure to ensure equivalence of intervention groups on the following variables: gender, age, ethnicity, number of previous treatment episodes, and number of psychiatric diagnoses. All participants who were randomized (N=113) were included in the intent-to-treat analyses. Youth were assessed at baseline and at 2, 4, 12, and 18 months after baseline. Youth and parents were compensated for their participation at the following rates: \$50 each for baseline, 2 and 4-month assessments, and \$100 for the 12 and 18-month assessments.

## 2.3. Treatments

MDFT and RT were administered by two separate DCF-licensed provider organizations. Both treatments were delivered over a 6- to 9-month period. In both treatments, primary therapists worked within a multidisciplinary team, assisted by a case manager (MDFT) and milieu staff (RT). MDFT was provided by the Adolescents and Families Clinic (AFC) at the University of Miami Miller School of Medicine. The Adolescent Treatment Program (ATP), the RT in this study, was provided by the Village South, Inc., a well-established and large community-based substance use treatment provider in Miami.

The same board-certified adolescent psychiatrist conducted an initial evaluation and diagnosis with all adolescents in both treatments according to DSM-V criteria. This same psychiatrist also saw all youth in the study on an as-needed basis for ongoing psychiatric care and

 $<sup>^{1}</sup>$  Early phase of treatment was defined as 2 months from baseline in order to maximize the chances that RT youth would still be in RT at the first post-baseline assessment.

<sup>(</sup>footnote continued)

Average retention for youth enrolled in RT ranges from only a few weeks to 3 months (e.g., Grella et al., 2001; Landrum, Knight, Becan, & Flynn, 2015).

 $<sup>^{\</sup>bar{2}}$  The residential treatment program (RT) was the first referral option for the most seriously impaired, dually diagnosed youth in Miami-Dade and Monroe Counties in South Florida, and thus youth with substance use disorder and only Oppositional Defiant Disorder or Mild to Moderate Conduct Disorder were not referred to this program. Youth with substance use disorder and severe conduct disorder were eligible. Youth with substance use disorder, mild CD and major depression were eligible, as were those with substance use and other co-occurring disorders other than ODD or mild to moderate CD.

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