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Evidence-Based Treatments for Conduct Disorders: A Systematic Review

A Capstone Project Presented to The Faculty of the Psychology Department Western Kentucky University Bowling Green, Kentucky

In Partial Fulfillment Of the Requirements for the Degree Master of Arts

> By Brianna Ward

August 2021

EVIDENCE-BASED TREATMENTS FOR CONDUCT DISORDERS: A SYSTEMATIC REVIEW

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EVIDENCE-BASED TREATMENTS FOR CONDUCT DISORDERS: A SYSTEMATIC REVIEW

Brianna WardAugust 202139 PagesDirected by: Dr. Frederick Grieve, Ph.D. and Dr. Thomas Gross, Ph.D.Department of PsychologyWestern Kentucky University

Conduct disorders are one of the most prevalent youth diagnoses, with potentially long-lasting effects. Oppositional Defiant Disorder (ODD) is characterized by defiance and negative emotionality, whereas Conduct Disorder (CD) is characterized by aggression, rule breaking, and confrontational and illegal behaviors, among others. Two identified types of CD are child-onset or adolescent-onset, with child-onset type having the more chronic prognosis due to a higher likelihood of committing violent crimes later in life. While prevention is one of the best methods against ODD and CD, treatment options are available. This review examines four evidence-based treatments: Parent-Child Interaction Therapy (PCIT), Multisystemic Therapy (MST), Problem-Solving Skills Training (PSST), and Parent Management Training (PMT). Articles included in this analysis were literature review articles and randomized control trials. Research has shown that all four interventions are efficacious in the treatment of ODD and CD, with PCIT being more effective for ODD than MST, PSST, and PMT. While each method was found to be effective, more research is needed to measure long-term treatment outcomes, cost-effectiveness, and overall treatment efficacy.

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Introduction

In the past, persons with conduct disorders in adolescence were labelled as "bad" or "unruly" children, and they often did not receive treatment. Research did not focus on the mental health of youth until the early 20th century, roughly in the first decade (The National Academies Press, 2001). Early treatments typically focused on reducing risk, rather than assessing symptoms of varying disorders and determining plans for addressing existing disorders (Eyberg et al., 2008). There is evidence for multisystemic therapy, parent management training, problem-solving skills training, and parent-child interaction therapy being effective in treating symptoms of oppositional defiant disorder (ODD) and conduct disorder (CD; Burke et al., 2002; Eyberg et al., 2008; Kazdin, 1997). Some research suggests parent-child interaction therapy may work better for ODD. This review aims to research evidence-based treatment options for oppositional defiant disorder (ODD) and conduct disorder (CD).

Oppositional Defiant Disorder and Conduct Disorder

Conduct disorders are characterized by aggressive behavior, being cruel to humans and animals, being confrontational, destroying property, criminal activity, disrespect, breaking rules, and illegal behaviors (American Psychiatric Association, 2013). They are understood in the context of interpersonal relationships and home, educational, and social environments (American Psychiatric Association, 2013). Not all children and adolescents who engage in these behaviors necessarily have a conduct disorder, as some symptomatic behaviors are developmentally appropriate, but it may be helpful to seek assessment for potential diagnoses. Because behavioral problems can begin in early childhood, it is important to begin interventions as early as feasible.

Unfortunately, if the behaviors go untreated, adolescent conduct disorders can worsen and potentially develop and transition into antisocial personality disorder, which does not currently have any evidence-based treatment methods (American Psychiatric Association, 2013).

Often considered a milder form of CD, ODD is one of the most common disorders in clinical children populations (Loeber et al., 2009). The core features of ODD are oppositional behavior and negative emotionality (Loeber et al., 2009). Onset is typically before the age of eight. Studies show that emotional dysregulation may be the driving force behind temperament in disruptive behavior in children with ODD (Loeber et al., 2009). ODD is relatively stable over time, but behavioral problems observed in preschool are often predictors of later psychopathology (Loeber et al., 2009). While ODD is a significant risk factor for CD, only some children with ODD develop CD. Physical fighting in boys with ODD is a strong indicator for later development of CD (Loeber et al., 2009). ODD covers a variety of behaviors and patterns, including negative, hostile, angry, vindictive, or defiant behavior; problems controlling temper; problems with authority; and, occasionally, aggression and lying (Steiner & Remsing, 2007). A diagnosis is usually applied to late preschool to early school-age children. Unfortunately, some believe ODD criteria do not sufficiently reflect gender differences since criteria focus more on behaviors and symptoms presented in males, rather than both males and females (Steiner & Remsing, 2007). Psychologists differ in opinion as to whether ODD is an easily treatable diagnosis or hierarchically connected to CD (Burke et al., 2002). Often times, children with a prior diagnosis of ODD are more likely to develop CD than children without an ODD diagnosis.

CD can have an onset as early as age five or six, but rarely occurs after age 16. Childhood onset is typically associated with a more persistent and severe course of CD than adolescent onset (Loeber et al., 2009). Childhood onset predictors include parental antisocial behavior, poor supervision, low education, low socioeconomic status, and parental substance abuse (Loeber et al., 2009). CD, while relatively stable, is less stable than ODD, as those diagnosed with CD are more likely to engage in violent behavior or develop antisocial personality disorder later in life (Loeber et al., 2009). Boys with CD are at a higher risk of developing antisocial personality disorder than girls. Since late onset CD is more common in girls, it is believed that girls are less likely to have a prior ODD diagnosis (Burke et al., 2002). Externalizing problems can be exhibited through poor social skills and are often paired with rejection by peers. External disruptive behavior and internalizing symptoms can co-occur throughout childhood (Pardini & Fite, 2010). This is especially true due to ODD and CD's high comorbidity with depressive and anxiety disorders (Pardini & Fite, 2010). Studies show that callous-unemotional traits are often negatively related to anxiety and fearfulness, hence the prevalence of externalizing symptoms (Pardini & Fite, 2010). Those with callous-unemotional traits, when compared to those without, show a lack of guilt, shallow affect, and limited empathy, and they are often aggressive and intimidating towards others (Pardini & Fite, 2010). While some functional deficits, such as those in reading, intelligence quotients (IQ), and academic performance, are linked to both CDs and comorbid Attention-Deficit/Hyperactivity Disorder (ADHD), other factors, such as behavioral impulsivity, inhibition, and social cognition, are tied to CDs alone (Burke et al., 2002).

Biopsychosocial Factors

There are biological, psychological, and social risk factors for the development of ODD and CD. Much of research on child biological factors for ODD and CD mainly focus on aggression and violence. Biological factors can be found genetically, intergenerationally, neuroanatomically, neurochemically, prenatally and perinatally, and from an under-arousal of the autonomic nervous system (Burke et al., 2002). Research has found that pathways to ODD and CD may be recognizable through early childhood behaviors as shown through different elements of functioning, such as temperament and attachment (Burke et al., 2002). The possibility of developing disruptive behavior is often influenced by temperamental elements. Theories of attachment have shown there are similarities between behaviors in ODD and insecure attachment (Steiner & Remsing, 2007). Social learning and attachment models also show that patterns of comorbid ADHD, ODD, and CD may be attributed to intraindividual and contextual risk factors beginning in early childhood or infancy (Steiner & Remsing, 2007). Social factors (i.e., poverty, lack of structure, community violence) likely increase the probability for an ODD diagnosis. Poor parental factors, such as lack of supervision, lack of positive parental involvement, inconsistent discipline, or abuse, further influence ODD diagnosis likelihood (Steiner & Remsing, 2007).

Changes in the DSM and ICD

When the *Diagnostic and Statistical Manual for Mental Disorders* (DSM) updated from the fourth edition-text revision (DSM-IV-TR) to the fifth edition (DSM-5), the sections containing ODD and CD changed as well. The DSM-5 combined the DSM-IV-TR sections titled "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" and "Impulse-Control Disorders Not Otherwise Specified" into a comprehensive chapter on disruptive, impulse-control, and conduct disorders (American Psychiatric Association, 2013). Antisocial personality disorder is listed in both this section and a separate chapter in the DSM-5 discussing personality disorders. The DSM-5 changed four main aspects of diagnostic criteria for ODD. First, it grouped symptoms into either the angry/irritable mood, argumentative/defiant behavior, or vindictiveness group. This revision showed ODD has both emotional and behavioral components (American Psychiatric Association, 2013). Second, there is no longer an exclusion criterion for CD. Third, a note was made that the frequency of behaviors symptomatic of ODD should be considered, especially since many of the criteria are associated with typical behaviors in developing children (American Psychiatric Association, 2013). Last, the DSM-5 added a severity rating for ODD. In terms of CD, most of the diagnostic criteria were not changed from the DSM-IV-TR to the DSM-5.

The DSM-IV-TR outlined that CD would be defined by the presence of 3 of 15 criteria that have been present in the last 12 months, one of which must have been present in the past six months. These 15 criteria are separated into four categories: (1) aggression to people and animals, (2) destruction of property, (3) deceitfulness or theft, and (4) serious violations of rules. New to the DSM-5 was the addition of a callous-unemotional specifier. Children qualify for this specifier if they have two of the four required symptoms over the last 12 months. These symptoms are: (1) lack of remorse or guilt, (2) callous-lack of empathy, (3) unconcerned about performance, and (4) shallow or deficient affect. Typically, these symptoms should be assessed from multiple reports, not only the child (Buitelaar et al., 2013).

Recently, the International Classification of Diseases (ICD) was updated from the 10th to the 11th version. Some changes were made to the sections concerning conduct disorders. The ICD-11 relabeled the ICD-10's conduct disorders section as disruptive behavior and dissocial disorders, allowing a comprehensive range of severity and phenomenology to be observed in ODD and conduct-dissocial disorder (CDD; Reed et al., 2019). The ICD-11 allows both ODD and CDD to be diagnosed at any age, compared to the ICD-10's childhood requirement (Reed et al., 2019). Qualifiers for specific disruptive behavior subtypes were added as well. For ODD specifically, a "with chronic irritability and anger" qualifier was added to the ICD-11 (Reed et al., 2019, p.13). This conceptualization differs from the DSM-5's introduction of disruptive mood dysregulation disorder (Reed et al., 2019). For CD, the ICD-11 consolidated the three separate diagnoses from the ICD-10: unsocialized (failure to establish attachments), and socialized (attachments to others), and confined to the family context (behaviors present only with family; Reed et al., 2019). There are qualifiers that allow distinction between childhood and adolescent onset of CD, as an earlier onset is typically associated with a more severe presentation of the disorder.

When youths have positive social interactions, supportive parent-child relationships, encouragement from teachers, and positive reinforcement, the course of CD and ODD is more favorable. Certain therapies, such as Cognitive Behavioral Therapy, Family Therapy, Dialectical Behavior Therapy, Interpersonal Psychotherapy, and Skills Trainings help build these positive environments, relationships, and behaviors. Within these overarching therapies are PCIT, MST, PMT, and PSST, which strengthen some

combination of parent-child relationships, parenting techniques, child problem solving skills, peer relationships, and self-awareness.

Problem-Solving Skills Training (PSST)

Heatley and Lee (2018) note that past studies have shown adolescents with CD have difficulties with problem-solving and struggle to apply these skills to resolve problems. PSST works on developing interpersonal problem-solving skills to accurately appraise situations before acting, thus emphasizing how children approach and handle different situations (Kazdin, 1997). This teaches them steps to solve their problems, rather than reacting before thinking. PSST also selects specific behaviors to develop, grow, or change, which are taught through modeling and direct reinforcement.

PSST involves teaching children five steps to use when faced with challenges. These involve encouraging them to specifically state the problem, brainstorm solutions without delving into their feasibility, determine pros and cons of each solution, choose one solution to try, and, last, discuss whether the option worked (Heatly & Lee, 2018). Some strategies employed are modeling behaviors, games, activities, role-playing, and using a token economy (Renk et al., 2017). As treatment progresses, problem-solving skills are applied to real-life situations (Kazdin, 1997). Studies of PSST have shown this strategy is effective in reducing aggressive and antisocial behavior at home, at school, and in the community (Kazdin, 1997).

Parent Management Training (PMT)

Unlike PSST's child-focus, PMT focuses more on parents. PMT employs operant conditioning to change parent behavior, child functioning, and parent-child interactions (Renk et al., 2017). This treatment posits that conduct problems are a result of

maladaptive parent-child interactions (Heatly & Lee, 2018). PMT is taught to parents, with little therapist-child interaction, so they can implement strategies at home, and it aims to teach parents strategies, behaviors, and procedures that will, in turn, change children's behavior. These techniques are meant to alter parent-child interactions in a way that increases prosocial behavior while decreasing deviant or defiant behavior (Kazdin, 1997). PMT also instructs parents on how to identify problem behaviors so they can better deliver reinforcements or punishments. This treatment relies heavily on social learning theory, including aspects such as positive reinforcement, mild punishment, negotiation, and contingency contracting (Kazdin, 1997). PMT is considered a "well-established" strategy, being one of the most effective in treating CD and ODD. One study found that combining parent and child training was superior to either training alone (Burke et al., 2002).

Parent-Child Interaction Therapy (PCIT)

PCIT, as compared to PSST and PMT, employs a balance of child- and parentfocus. PCIT uses therapist observations of parent-child relationships with real-time feedback provided to parents, and it is identified as a probably efficacious intervention with a focus on parenting skills and parent-child interactions (Renk et al., 2017). This method works with parents to teach them responsive parenting skills while they simultaneously care for and meet the needs of their children, as well as providing positive attention for appropriate behaviors and ignoring negative behaviors (Renk et al., 2017).

PCIT is a dual-phased treatment, using a child-directed interaction phase and a parent-directed interaction phase. The child-directed interaction phase involves training parents to apply nondirective play skills, which aim to alter the nature of parent-child

interactions, as well as coaching parents how to remain attentive while interacting with their children, much like play therapy; this, in turn, creates a more nurturing parent-child relationship (Burke et al., 2002; Renk et al., 2017). The second interaction phase, parent-directed, aims to improve parenting skills by teaching parents to give children clear instructions, praise for child compliance, and time-outs for child noncompliance with a goal of increasing child prosocial behaviors while also decreasing problematic behaviors (Burke et al., 2002; Renk et al., 2017). Typically, PCIT uses a "bug-in-the-ear" receiver so therapists can give parents real-time feedback and instruction. Randomized controlled studies have shown that PCIT results in clinically significant improvement in children (i.e., improved parent-child relationships, less disruptive or antisocial behaviors) with ODD (Burke et al., 2002).

Multisystemic Therapy (MST)

Of the four therapies discussed, MST encapsulates the most areas, including individual, parent, family, peer, and school foci. MST is a family-based treatment approach using several family therapy techniques, such as joining, reframing, enactment, paradox, and assigning specific tasks (Kazdin, 1997). MST addresses multiple risk factors in a comprehensive manner at the individual, family, school, peer, and neighborhood levels. Treatment aims to assist parents in developing adolescent behaviors, overcoming marital difficulties that are hindering parents in raising their child, eliminating negative parent-child interactions, and developing family cohesion and warmth (Kazdin, 1997). Occasionally, MST uses Parent Management Training strategies to strengthen positive home interactions, school interventions, and Problem-Solving

Skills Training techniques to address individual, family, and extra-family problems. This approach also draws from social supports to promote healthier peer interactions.

MST is consistently labeled as probably efficacious (Renk et al., 2017). While intensive, MST is also quite flexible, utilizing multiple interventions. While this approach includes techniques from multiple approaches, it is not a simple combination of them; rather, MST uses these interrelated systems and how they affect each other to better help the child and family (Kazdin, 1997). Having a basis in ecological and family systems theories allows therapists to incorporate the child's interconnected systems (i.e., family, peers, neighborhood, school; Renk et al., 2017). This method is both effective in the reduction of antisocial behavior and highly cost-effective (Burke et al., 2002).

The purpose of this literature review is to examine four evidence-based treatments for ODD and CD: PCIT, MST, PSST, and PMT. In order to do so, this review explores an array of randomized control trials and literature reviews studying one or more of the EBTs of interest. Findings were first organized by type of article (i.e., literature review or randomized control trial). Literature reviews were then organized chronologically, and RCTs were organized by the treatment examined.

Method

Search Terms

The current project performed a comprehensive literature review from the year 1997 to 2020 because the majority of research was done during this time. Studies were identified by searching the MYWKU Libraries databases. Search results initially yielded over 162,000 results. Search terms included conduct disorder, oppositional defiant disorder, evidence-based treatment, psychotherapy treatment, history, and treatment.

Procedures

Terms were entered into the search engines in the following combinations: conduct disorder and evidence-based treatment; oppositional defiant disorder and evidence-based treatment; treatment of conduct disorder; history of conduct disorder; psychotherapy treatment of conduct disorder. Search results were decreased by also searching the following combinations: parent-child interaction therapy for conduct disorder; parent-child interaction therapy for oppositional defiant disorder; multisystemic therapy for conduct disorder; parent management training for conduct disorder; problemsolving skills training for conduct disorder. Given that randomized control trials (RCTs) are effective for determining treatment efficacy, this method of study was included, along with literature reviews. Duplicate articles, non-English language articles, studies not peer-reviewed or available online, and studies irrelevant to the research were eliminated. **Analyses**

This procedure resulted in a total of 14 studies (7 RCTs and 7 literature reviews) included in the review. Three of the RCTs examined PCIT, three RCTs examined PMT, one RCT examined MST, and all seven literature reviews examined PCIT, PMT, MST,

and PSST either in combination or alone. The seven literature reviews examined more

than 50 studies total related to the current review.

Figure 1

Flowchart of included studies (n = number of articles)



Results

The following section addresses literature reviews and randomized control trials that study Problem-Solving Skills Training (PSST), Parent Management Training (PMT), Parent-Child Interaction Therapy (PCIT), and/or Multisystemic Therapy (MST). Other treatment options, if included in the following articles, are not taken into consideration for this review.

Literature Reviews

Kazdin (1997) reviewed PSST, PMT, and MST, along with their conceptual foundations, characteristics, evidence, and limitations. Studies using PSST resulted in reduced aggressive and antisocial behavior in multiple environments, and these effects were present a year later (Kazdin, 1997). However, evidence shows that older children typically benefit more from this treatment than younger children, possibly due to their differing levels of development (Kazdin, 1997). Studies of PSST show that it leads to therapeutic change and often associate this success with PSST being a cognitively-based treatment (Kazdin, 1997). PMT is a heavily researched technique for CD and ODD. Improvements in child behavior are present in multiple measures, including parent and teacher reports, direct home observation, at school, and in institutional records (Kazdin, 1997). PMT results in a broad impact on family life, including improvements in behavior of siblings of referred children (Kazdin, 1997). MST studies have typically evaluated adolescents with violent crime arrests and incarceration histories. Results of such studies show MST is effective in reducing delinquency and emotional and behavioral problems (Kazdin, 1997). With all three strategies – PSST, PMT, and MST – changes and treatment outcomes are sustained.

Burke et al. (2002) reviewed findings for treatment of ODD and CD. They found that many interventions are successful when using some form of parenting factors. Among treatments they discussed were PSST, PMT, PCIT, and MST. PSST, in this review, is viewed as a prevention method, rather than treatment. It was found to be successful when combined with other interventions. According to the authors, PMT is a "well-established" strategy that yields improvements across both settings and time (Burke et al., 2002). One referenced study (i.e., Webster-Stratton & Hammond, 1997) found that combining parent training with child training is more efficient, and therefore superior to either training component alone (Burke et al., 2002). PCIT has shown to result in significant improvements in children diagnosed with ODD in random controlled studies (Burke et al., 2002). Burke et al. (2002) found that MST shows some of the greatest success in treating ODD and CD since it addresses multiple risk factors in a comprehensive manner. MST was found to be both an effective method for reducing antisocial behavior and cost-effective.

Steiner and Remsing (2007) aimed to use existing research on ODD and CD to formulate recommendations for diagnosing and treating ODD. They found the main two evidence-based treatments for children with ODD are PSST and PMT, both of which are individual approaches. These strategies are tailored to specific problems each child deals with, as well as specific behaviors. PMT, a family intervention, involves disciplining and age-appropriate supervision (Steiner & Remsing, 2007). As age changes, so does the combination of treatment strategies, typically with adolescents receiving more individual techniques (Steiner & Remsing, 2007).

Eyberg et al. (2008) reviewed 16 evidence-based treatments, four of which will be discussed here: MST, PCIT, PMT, and PSST. MST aims to treat antisocial and delinquent behavior using cognitive-behavioral strategies, behavior therapies, parent training, family therapies, and pharmacological interventions (Eyberg et al., 2008). This treatment is provided within the family's natural environment and focused on adherence to a list of core principles. PCIT focuses on the parent-child interactions to combat the child's disruptive behavior using a two-phased treatment plan. In examined studies, PCIT was found to be superior to controls in reducing disruptive behaviors (Eyberg et al., 2008). PMT focuses more on the parent than the child, teaching them skills to help modify child behaviors. As with PCIT, PMT was superior to other treatments in reducing disruptive behaviors (Eyberg et al., 2008). PSST, on the other hand, works with the child more than the parent by teaching them problem-solving strategies to later use in real-life problems. This method works well with school-age children with disruptive behavior and was found to be a "probably efficacious treatment" (Eyberg et al., 2008, p.229).

Loeber et al. (2009) presented perspectives on ODD and CD, along with an examination of effective interventions. The authors concluded that the most efficacious treatments use cognitive behavioral strategies at multiple levels, including parents, children, families, peers, and schools (Loeber et al., 2009). PMT is useful for children and adolescents, so it can be applied to both ODD and CD. PCIT is another examined treatment strategy. The authors discussed programs that employed either or both PMT and PCIT. These included Webster-Stratton's Incredible Years treatment program, Greenberg's PATHS program, and the SNAP Program. Such programs use PMT and PCIT strategies to target behavioral problems in young children.

Zisser-Natherson and colleagues (2017) discussed PCIT for children with ODD and CD. They stress that poor long-term prognosis is almost inevitable if children are not treated for their disruptive behavior (Zisser-Nathenson et al., 2017). Early studies of PCIT showed improved parental mental health, improved behaviors in non-treated siblings, improved classroom behavior, and decreased off-task and inappropriate behaviors (Zisser-Nathenson et al., 2017). For treatment to be successful, the authors believe there needs to be a combination of parent and child co-involvement in treatment, assessments that guide progress, active coaching of parents, and treatment continuation until "parents have mastered skills and their child's behavior is within the normal range" (Zisser-Nathenson et al., 2017, p.116). These elements help improve the parent-child relationship and produce reductions in the child's disruptive behavior (Zisser-Nathenson et al., 2017).

Renk et al. (2017) delved into PCIT, PSST, PMT, and MST in this book chapter. They state that research suggests PCIT is an effective treatment in improving parent-child interactions while decreasing problem behavior in children (Renk et al., 2017). It is also shown that PCIT decreases conduct problems across settings, formats, and time. PSST, both alone and when combined with an in vivo component, is labeled as being probably efficacious (Renk et al., 2017). RCTs studying PMT, a variation of PSST, have shown statistically significant changes after intervention, with 79% of children making changes labeled as important by their parents (Renk et al., 2017). Combining PSST and PMT both decreases antisocial behavior and increases prosocial behavior. This combination of treatments was found to be superior to either program alone. Controlled studies have shown that MST is more effective than individual therapy in regard to reducing behavior

problems, increasing family relationships, and preventing criminal behavior (Renk et al., 2017).

Randomized Control Trials

Parent-Child Interaction Therapy

Nixon and colleagues (2003) compared the effects of standard PCIT (STD), abbreviated PCIT (ABB), and a waitlist control group (WL). The modified PCIT treatment included didactic videotapes, telephone consultations, and face-to-face sessions. Treatment groups were as follows: 17 families (14 boys, 3 girls) completed STD, 5 dropped out; 20 families (13 boys, 7 girls) completed ABB, 3 dropped out; 18 families in WL, (11 boys, 6 girls), 1 dropped out. There was a group of 21 preschoolers used as a comparison condition. Inclusion criteria included: score of 132 or higher on the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999), child meets DSM-IV diagnostic criteria for ODD, and the primary problem was disruptive behavior lasting at least six months (Nixon et al., 2003). Measures include the ECBI, Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000), and Home Situations Questionnaire-Modified (HSQ-M; Matthey & Barnett, 1999) for parent report of child behavior; the Parenting Stress Index (PSI; Abidin, 1995), Parent Sense of Competence Scale (PSOC; Gibaud-Wallston & Wandersman, 1978), Parent Locus of Control Scale (PLOC; Campis et al., 1986), and Parenting Scale (PS; Arnold et al., 1993) for parenting attitudes and discipline methods; and the Dyadic Parent-Interaction Coding Systems-II (DPICS-II; Eyberg et al., 1994) for assessment of child and parent behavior. Posttreatment measures showed significant differences in externalizing behavior, parent stress, and discipline practices, as reported by parents (Nixon et al., 2003). The STD intervention effect was

superior immediately after treatment, but the STD and ABB groups were comparable at the six-month follow-up session. Authors concluded that abbreviated PCIT may benefit families and children with conduct problems.

This next study was a continuation of the previous article and further compared the effects of STD, ABB, and WL groups at a one- and two-year follow up. There were 54 families participating in this study, with 18 boys and 4 girls in the STD group and 18 boys and 9 girls in the ABB group. Data were collected on 97% (STD) and 94% (ABB) of families at the one- and two-year follow-up sessions. These follow-up assessments revealed that treatment effects were, for the most part, maintained for both the standard and abbreviated conditions, with little difference between the two, making this study comparable to results reported by previous research (Nixon et al., 2004).

The study by Bjørseth & Wichstrøm (2016) compared PCIT with treatment as usual (TAU) in children with behavior problems. There were 81 Norwegian families with children (52 boys), who scored 120 or higher on the ECBI, assigned to either PCIT or TAU. The Dyadic Parent-Child Interaction Coding System measured parenting skills, and the ECBI and CBCL measured child behavior problems. Analyses showed behavior problems improved more in children receiving PCIT than those receiving TAU according to the mother's, but not the father's, reports (Bjørseth & Wichstrøm, 2016). Parents improved in taught skills as well. The six-month assessment revealed lower father-rated ECBI and mother-rated CBCL scores in children who received PCIT compared to those in the TAU condition. Children who received PCIT had fewer behavior problems, according to both parents on the ECBI and the mother on the CBCL, than TAU at the 18month follow-up session. The authors concluded that PCIT results in a greater reduction

in behavior problems when compared to TAU, and they also stated parenting skills improved more with PCIT than TAU (Bjørseth & Wichstrøm, 2016).

Multisystemic Therapy

Weiss et al. (2013) recognized that many studies of MST have been carried out by the developers of this treatment, so their goal was to conduct an independent evaluation of MST and its effects on adolescents with conduct problems. Participants included 164 adolescents ages 11 to 18 years assigned to MST or services as usual. The study spanned 18 months after baseline, and arrest data was collected for 2.5 years (Weiss et al., 2013). Measures were as follows: CBCL for primary intervention outcomes; Self-Report Delinquency Scale (SRD; Elliott et al., 1985) for secondary intervention outcomes; Family Adaptability and Cohesion Evaluation Scales-III (FACES-III; Olson et al., 1985), Parental Authority Questionnaire (PAQ; Buri, 1991), and Personality Assessment Inventory (PAI; Morey, 1991) for intervention targets. Results of the RCT indicated that scores on the CBCL improved with treatment. In addition, MST also improved family functioning and parent psychopathology (Weiss et al., 2013). The authors concluded that results of this study provide further support for effectiveness of MST.

Parent Management Training

Booker et al. (2016) aimed to examine how the quality of parent-child relationships affects connections between conduct problems and treatment responses in children with ODD. This study included 123 children who met DSM-IV criteria for ODD. Age ranges for the children were between 7 and 14 years, with 61.8% of the participants being male and 81.7% being Caucasian. Participants received either PMT or Collaborative and Proactive Solutions (CPS). Authors noted earlier studies found both

treatments to be effective. There were two pre-treatment assessment sessions before families were assigned to one of the two treatment groups with an almost even distribution (63 in PMT vs. 60 in CPS). Measures assessed child conduct problems (Behavior Assessment System for Children-2nd Edition; BASC-2; Reynolds & Kamphaus, 2000), child disruptive behaviors (Disruptive Behavior Disorders Rating Scale; DBDRS; Pelham et al., 1992), child perceived relationship quality with parents (child BASC), and child ODD severity (Anxiety Disorders Interview Schedule, Child and Parent Versions; ADIS-C/P; Silverman & Albano, 1996). It was found that perceived relationship quality did in fact influence conduct problems and ODD severity, but not symptom number (Booker et al., 2016). However, both ODD symptom count and ODD severity significantly decreased following both treatments. When children viewed the parent-child relationship as poorer, and mothers reported elevated conduct problems, treatment response was predicted to be weak, whereas with children viewing the parentchild relationship as better or higher, there was no weakened response (Booker et al., 2016).

Miller-Slough et al. (2016) examined parent-child synchrony and its effect on children's emotional lability, aggression, and functioning after treatment. There were 75 families with children diagnosed with ODD (46 boys, 7 to 12 years old) who received either PMT or CPS. Exclusion criteria included meeting diagnostic criteria for CD, Autism Spectrum Disorder, or psychosis, having a Full-Scale Intelligence Quotient (IQ) below 80, or current suicidal or homicidal ideation (Miller-Slough et al., 2016). Measures used are as follows: Anxiety Disorder Interview Schedule, Fourth Edition (ADIS-IV; Silverman & Albano, 1996) to measure ODD symptoms and behavior problems before

and after treatment; emotion talk task to observe parent-child synchrony and facilitate discussion of emotions; BASC-2 to measure child internalizing and externalizing symptoms before and after treatment. Findings showed that parent-child synchrony before treatment was linked to decreased emotional lability and aggression after both treatments and improvement in functioning (Miller-Slough et al., 2016). The authors stress that, given the results, parent-child relationships are important at the onset of treatment, as they greatly affect treatment response and potential treatment targets (Miller-Slough et al., 2016).

Booker et al. (2020) studied how, and to what degree, the parent-child relationship predicts clinical outcomes in adaptive skills externalizing problems in children meeting ODD diagnostic criteria. Participants included 134 children and their parents (38.06% female; ages 7 to 14; 83.58% Caucasian) assigned to either PMT or CPS. Measures used were as follows: Tangram Puzzle Task (Hudson & Rapee, 2001), Alabama Parenting Questionnaire (APQ; Frick, 1991), and BASC-2. Four principal components – parental warmth, parental monitoring, family hostility, and family permissiveness – were measured and supported. Results indicated that higher parental monitoring predicted fewer externalizing problems, compared to higher family permissiveness, which predicted more externalizing problems (Booker et al., 2020). Parental warmth led to the largest improvements in adaptive skills for children receiving PMT, whereas family hostility led to poorer adaptive skills and more externalizing problems (Booker et al., 2020). The authors concluded that parent-child relationships can influence posttreatment outcomes after treatment for ODD.

Discussion

This analysis successfully examined four evidence-based treatments – PCIT, PSST, MST, and PMT – and found each one to be efficacious in the treatment of ODD and CD; however, some information should be considered. Interventions often work best when tailored to specific people and populations. Furthermore, adolescents benefit more from direct treatments, rather than parenting programs (Renk et al., 2017). Fortunately, PCIT, PSST, PMT, and MST are all capable of being manipulated and changed to better serve individuals. However, intensive programs, such as MST, prove to be more necessary for older adolescents who have long histories of conduct problems that resulted in poor parent-child relationships, requiring a parent-focused component (Renk et al., 2017). Practitioners should consider the onset (childhood vs. adolescent) to better predict treatment outcomes and prognosis and to better select and tailor techniques for individual children. Therapists should also examine different age-related factors. Child-onset type of CD is often more chronic, and it is linked with more disruptive and antisocial behaviors as well as poorer parent-child relationships and parenting strategies, than the adolescentonset type (Renk et al., 2017). Adolescent-onset type, while less chronic, is still concerning, especially due to adolescents' desire for autonomy and influences from peer groups that can worsen symptoms and influence treatment and prognosis (Renk et al., 2017). With different ages of onset, youths also have different developmental needs that should be addressed. For example, children have higher levels of dependence and lower levels of independence, whereas adolescents are typically the opposite. More parentheavy treatments (i.e., PCIT, PMT) are appropriate for children, while individually focused treatments (i.e., PSST, MST) are better for adolescents. PCIT, given its

effectiveness with ODD, may also be efficacious for child-onset CD, given the similar age of children with the two disorders.

Youth with CD and ODD vary in their presentations and often have comorbid disorders with overlapping symptoms (i.e., impulsivity, inattention, poor interpersonal relationships), furthering complicating treatment. Therefore, interventions should focus not only on symptoms of CD and ODD, but the child's entire array of symptoms specific to their presentation of behavior. Unfortunately, environmental variables may negatively affect adolescents' abilities to maintain therapeutic changes (i.e., parental substance abuse, parental psychological symptoms, parental marital issues, harsh parenting; Renk et al., 2017). Some parenting factors (i.e., harsh parenting) are addressed in treatment, as techniques focus on shaping parenting styles and parent behavior. Other factors (i.e., parental substance abuse, parental psychological symptoms) are outside of the scope of possible treatment effects, so change is dependent on parents' willingness to receive extra outside treatment or guidance.

Limitations

These studies and reviews have some limitations. Family dropout during treatment, before posttreatment assessment, or before follow-up negatively affects data generalizability and applicability. Participant groups that come from single or similar search pools and areas (i.e., middle-class, Caucasian) lessen generalizability as well. Many studies of conduct disorders and their associated treatments focus on boys, making results less generalizable to adolescent girls. Age groups also tend to be restricted in some studies. For example, some researchers decide to only include youths ages 7 to 14 years, instead of ages 6 to 17 years, which would cover the range of both ODD and CD.

Studies have shown that interventions only addressing one part of an adolescent's system (i.e., only individual therapy with the adolescent) are unlikely to result in changed behaviors (Heatly & Lee, 2018). Even though treatment effects can be statistically significant, they may still not have a positive life impact. A way to evaluate this is to consider the degree to which adolescents have normative functioning levels posttreatment (Kazdin, 1997). Due to CD's poor long-term prognosis, more follow-up assessments are needed. Some studies (Bjørseth & Wichstrøm, 2016; Nixon et al., 2004) have conducted one- or two-year follow-ups, but data is needed to predict outcomes through adulthood.

Adolescents are dependent on parents to complete treatment; if a caregiver does not continue bringing their child to sessions, they do not get the help they need, which can lead to poorer long-term outcomes. Other factors can increase the dropout rate from treatment, including high criticism from parents during parent-child interactions, low socioeconomic status, and higher levels of barriers to treatment (Zisser-Nathenson et al., 2017). These drop-out rates affect both initial trial results, as well as follow-up data. However, when adolescents or parents are highly motivated to continue attending treatment, they are less likely to dropout than less motivated participants, therefore creating a confounding variable.

Literature reviews, including the current analysis, provide a unique set of limitations. Often times, reviews do not always provide details of the overall research strategy. There are limitations of the search method that affect search quality, especially due to specifications in search parameters. Compared to RCTs, literature reviews are not typically replicable studies. Exclusion criteria differ with every analysis, so this further complicates replicability. Unfortunately, these reviews are open to selection bias, in that

researchers choose articles that support their hypotheses or their area of focus; this, in turn, negatively affects the comprehensiveness of the search for articles and studies.

The current review is limited as well. Exclusion and inclusion criteria were not chosen by a specific method, and therefore may differ across analyses. Selection bias is another factor to consider, as this review did not examine literature excluding the EBTs of interest. Furthermore, sections of included studies that referred to other EBTs (i.e., CBT) were not considered.

Future Research

Since replication of treatment studies in youth treatment literature are rare, more evidence is needed to further establish interventions. Future research should also focus on comparisons of treatments to alternative treatments instead of only controls or waitlists. More evidence is needed to further understand why these evidence-based treatments create change for youth with disruptive behavior (Eyberg et al., 2008). Additional research should also be conducted for each intervention on the cost-effectiveness of treatment and training and the maintenance of treatment effects.

Children diagnosed with ODD who have co-occurring conduct problems may require modified treatment that addresses these additional features (Booker et al., 2016). The high comorbidity of CD and ODD with other disorders, such as ADHD, make it likely that study results can be applied to "real-world" situations, as few youths have noncomorbid ODD or CD diagnosis (Booker et al., 2016). Future research should examine the effects of treatment on comorbid symptoms and disorders (i.e., acting out with both ODD and ADHD) due to high ODD and CD comorbidity rates with other diagnoses.

Summary

Research suggests that Parent-Child Interaction Therapy, Multisystemic Therapy, Problem-Solving Skills Training, and Parent Management Training are effective treatment methods for reducing disruptive and antisocial behaviors in children and adolescents. PCIT has a strong backing of research and is a strongly efficacious method due to intensive training, low participant drop-out rates, and reduction in conduct problems. In comparison to the other three treatments, PCIT was regarded as more effective in the treatment of ODD. MST is strengthened by its inclusion of multiple systems and methods, so as to assess all areas of the child's life and choose the best approach. PSST and PMT are both effective treatments on their own, but also work well combined or as elements of MST. While benefits for each intervention strategy are present, more research is needed to further determine treatment efficacy and costeffectiveness. More importantly, more studies must be conducted to determine the longterm effects on CD and ODD prognosis and treatment outcomes. Practitioners agree that prevention is key with conduct problems, and they stress that parental behaviors are strong influences reducing CD and ODD symptoms and related behaviors.

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* Articles included in results section