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Original Paper

The Development and Treatment of Conduct Disorder: A Hypothetical Applied Behavior Analytic Perspective

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Abstract

This paper discusses conduct disorder-312.8x (F91.x) as a Diagnostic and Statistical Manual of Mental Disorders (DSM-5) Axis 1 condition from an applied behavior analytic perspective. It explores the definition, development, causes, consequences, and coexisting conditions of conduct disorder. The paper also reviews a theoretical intervention treatment approach that utilizes parent management training (PMT) to support the view that if conduct disorder is diagnosed early, the child can live a "normal" life, especially with appropriate parental training and support. This intervention utilizes an applied behavior analytic perspective to provide training that targets socially unacceptable behavior, parent buy-in, and parental willingness to learn and use parent management training.

Keywords

conduct disorder, behavior analysis, parent management training

1. Introduction

The American Academy of Child and Adolescent Psychiatry (AACAP, 2018) describes conduct disorder (CD) as a group of behavioral and emotional problems in children and adolescents that cause them great difficulty in following rules and behaving in a socially acceptable way. Conduct disorder is one of the oldest diagnostic classifications utilized in child psychiatry (Hill & Maughan, 2001). The National Collaborating Centre for Mental Health (2013) describes conduct disorder as a persistent pattern of antisocial behaviors. Individuals persistently break social rules and engage in activities that annoy other people. Baker and Scarth (2002) have defined CD as an unrelenting pattern of antisocial behavior in which the rights of others are violated or in which significant social rules are broken, and it has an early onset of 5 to 6 years of age. CD can result from brain damage, child abuse, genetic vulnerability, failure in school, and other traumatic life experiences (AACAP, 2018). CD was once thought to be more prevalent amongst boys than girls, but research indicates that differences concerning delinquency have

narrowed considerably (Keenan et al., 1999). CD for girls is mainly associated with antisocial personality disorder, early pregnancy, and increased mortality. However, the nosology and development of CD have been explored more for boys, with little systematic research conducted for girls (Keenan et al., 1999). Keenan et al. (1999) suggested that these differences may be due to sociocultural experiences and biogenetic developments that differ between girls and boys.

It is believed that children with CD are diagnosed after a series of ongoing behavioral problems for more than six months. Baker and Scarth (2002) have considered several contributing factors, including socioeconomic aspects such as poverty and peer pressure. CD is deemed disruptive because of its impact on the child, the child's family, and others in the community in which the affected lives. With their behavior being out of scope for what many consider "normal," many children with CD do not show any form of remorse, guilt, or understanding of the damage, pain, or discomfort that can arise from their actions (Baker & Scarth, 2002). Conduct problems amongst youths are predictive of an increased risk of substance abuse, criminal behavior, and educational disruption and constitute a considerable social burden, involving interpersonal suffering and financial cost (Blair, Leibenluft, & Pine, 2014).

1.1 Signs of Conduct Disorder

Children with CD often exhibit a continuum of indicators, according to Baker and Scarth (2002).

- Behavior that is aggressive not only towards people but also towards animals. This can be characterized by bullying, threatening, intimidating, fighting, or cruelty to people and animals, utilization of a weapon, or stealing while confronting a victim
- Destruction of property through behavior such as setting fires or consciously destroying property that does not belong to them
- Dishonesty and theft
- Severe infringement of rules, such as running away or truancy sooner than the age of thirteen and flouting curfew
- Precocious sexual activity

1.2 Causes and Consequences

The AACAP (2018) has hypothesized that children diagnosed with CD are more liable to many potential criminal behaviors. Although not yet substantiated, some of the most likely causes of CD might be connected to biological, psychiatric, and social problems. The underlying issues can therefore be varied. However, from a behavioral perspective, environmental variables are considered significant in contributing to this disorder, even though contributing factors related to biological and genetic vulnerabilities cannot be excluded. For example, it is believed that neurobiological issues, such as motor delays, memory problems, and language difficulties, may relate to judgment, problems with modulating and expressing feelings, increased anger and frustration, low self-esteem, and a sense of abandonment (Baker & Scarth, 2002). In addition, studies have found that problems such as physical and sexual abuse, emotional abuse, parental separation or divorce, maternal rejection, institutionalization, peer influence, and social disorganization can also contribute to this disorder (Farrington, 2009).

1.3 Coexisting Conditions

CD is often linked with other disorders, such as attention-deficit hyperactivity disorder (ADHD), depression, bipolar disorder, anxiety, posttraumatic stress disorder, and substance abuse (Baker & Scarth, 2002). For example, in a study conducted by Monuteaux, Faraone, Gross, and Biederman (2007), baseline ADHD was a significant risk factor for lifetime CD for girls during childhood and adolescence.

1.4 Treatment

The most effective approach to treating CD must consider any biological, psychological, and social vulnerabilities. Therefore, according to Farrington (2009), a treatment that combines methods that target these areas will be most effective. Moreover, the association posits that early recognition and intervention are incredibly beneficial. Therefore, a comprehensive evaluation approach includes an individual interview with the child and their family, family profile, and psychological testing such as a psychoeducational evaluation that may uncover intellectual or learning disabilities contributing to the child's disruptive behavior (Farrington, 2009).

CD treatments include psychotherapies, such as parent management training (PMT), individual therapy, family therapy, and social skills training. In some circumstances, residential therapy programs may be helpful. Medication has been prescribed in medical situations involving ADHD, depression, bipolar disorder, and anxiety (AACAP, 2018). In a study conducted by Murphy and Siv (2011), mode deactivation therapy, an evidence-based psychotherapeutic technique developed by Dr. Apsche, proved highly successful in treating CDs. Other approaches include person-centered analytic treatment, community-based interventions of multisystemic therapy, and cognitive behavioral therapy (Nelson et al., 2006). Both multisystemic therapy and coping power programs have considerable empirical support, and although not always considered effective, residential treatment for CD is common (Nelson et al., 2006).

An approach to treating CD that considers the applied behavior analytic perspective is PMT (Feldman & Kazdin, 1995). PMT refers to programs that train parents to manage their child's behavioral problems in the home using strategies that can also be used in school. The approach is based on the premise that maladaptive parent-child interactions, predominantly associated with discipline practices, have been shown to cultivate and sustain conduct problems in children (Baker & Scarth, 2002). Therefore, the approach attempts to employ social learning techniques that rely on principles of operant conditioning to alter Parent and child behavior in ways that promote prosocial child behavior and reduce antisocial or oppositional behavior typical of CD and involve interacting with children with multiple problems in real-world situations.

Treatment involves instruction in social learning principles and techniques; the therapist teaches parents the underlying concepts, models the methods, and implements the plan procedures (Feldman & Kazdin, 1995). Parents are taught how to observe and define problem behavior, record treatment outcomes, use reinforcement for appropriate behavior, and implement punishment techniques. Parents apply new skills and practice solving simple problem behavior before addressing more severe issues. According to

research findings, PMT can often address other areas not targeted in therapy (Feldman & Kazdin, 1995). However, there must be a therapeutic relationship between the individual with CD and their parents as a fundamental approach to treating this disorder (Nelson et al., 2006). PMT seems to fulfill this requirement. PMT has been shown to result in marked improvement in children's behavior, documented in reports by parents and teachers and school and police records by independent observers (Kazdin, 2002). Research has shown that effective treatment of CD should involve the child's concern and their networks of influence, such as family, school, and peer groups (Baker & Scarth, 2002). Therefore, an effective PMT program should consider these.

1.5 Case Study

1.5.1 Summary Statement and Background of Problem Behavior

DJ is a 10-year-old grade 4 student diagnosed with CD and ADHD. DJ has been documented over the past year as being involved in vandalism, cruelty to peers and other people, bullying, lying, stealing, and truancy. His father, who has recently been united with his son, is concerned that these behaviors negatively affect their quality of life. He is worried that his son may encounter serious problems that could send him to a juvenile detention center if something is not done. Before uniting with his father, DJ lived with his mother, an alcoholic and abusive, in a treatment rehabilitation center for substance abuse. DJ's effective treatment needed to involve PMT, as outlined above.

The PMT program was designed to enable the father to consider the child's environment contributing to CD. For example, the father was taught that stress might lead to low mood and drinking in parents or caregivers, increasing demands on the child and eventually contributing to the disorder. Therefore, it was indispensable that the father enforces a harmonized parental approach among himself and other caregivers to avoid undermining rules or consequences. The parent was also encouraged to collaborate with his son in everyday activities, use social praise and rewards for specific, agreed desired behaviors, learn to ignore unwanted behaviors to avoid negatively reinforcing them, and focus on primary socially significant behaviors. It should, however, be noted that children sometimes often find ways to sidetrack rules. Sometimes, the plan to ignore may not be effective, but punishment (e.g., response cost, lost privileges, extra school time) has been proven to reduce conduct problems (Nelson et al., 2006).

As much as possible, it is necessary to reorganize the child's environment to prevent behavior triggers that may lead to problems. Therefore, it was also essential for the parent to monitor DJ's whereabouts, actively engage in his education, and assist in school homework, daily. Finally, it was necessary to be calm and consistent, set house rules, emphasize desired behavior and not undesired behavior, and ensure that consequences for inappropriate behavior were consistent.

1.6 Target Behaviors

The target behaviors that DJ was noted to be engaged in were as follows.

i. Vandalism was defined as the deliberate and malicious destruction of property.
ii. Cruelty to people was defined as physical fights and the use of weapons to cause harm.

iii. Bullying was defined as the employment of superior strength or influence to intimidate and force someone to do what they did not want to do.

iv. Stealing was defined as breaking into someone's house or car to take what did not belong to him.

v. Rule violations were defined as being away from home at night despite parental objections, running away from home, and being truant from school.

1.7 Functional Assessment

A functional assessment of this disorder was conducted to identify variables contributing to and maintaining problem behaviors in DJ. Therefore, both indirect and direct methodology approaches were utilized. For the first approach, interviews were conducted with DJ, his father, his caregiver, and his neighbors to determine the underlying reasons for the CD. Individuals related to him at home and in school were provided with motivation assessment scales to collect baseline data. Direct observation using an Antecedent Behavior Consequence data collection approach allowed for examining antecedents, behavior, and consequences of behaviors. DJ's behaviors were understood to function as means of escape, attention-seeking, and, in some instances, served a sensory function, but hypothesized due to trauma and the absence of a needed relationship with a parent. An abusive mother and an absent father have resulted in an ineffective parental relationship. Therefore, DJ had difficulties managing frustration, disappointment, emotion, unmet needs, and self-management.

2. Method

2.1 Data Collection and Procedures

To obtain data on DJ's behavior, interviews were conducted. In addition, a behavior checklist completed by DJ's father provided the following data on the CD of concern.

Table 1. Antisocial Behavior Before Treatment

Behavior	Months						Total
	January	February	March	April	May	June	
Vandalism	2	1	0	2	3	0	8
Cruelty	20	8	6	8	10	12	64
Bullying	30	10	12	6	8	6	72
Stealing	10	4	6	2	4	10	36
Rules violation	20	10	16	12	8	14	80
Total antisocial behavior	82	33	40	30	33	42	260

Over six months, DJ was involved in 260 antisocial behavior incidents across the areas of vandalism, cruelty, bullying, stealing, and rules infringement. From the data collected, it was clear that DJ was in perpetual violation of set rules, indicating that he might have opposition defiant disorder much earlier than is usual for children who later develop CD.

Data collection procedures included a checklist, ABC data charts, time-out logs, and frequency data sheets during treatment.

2.2 Replacement Behavior

For DJ to effectively function in a socially acceptable way, he was taught the following replacement behaviors:

- Problem-solving skills
- Self-management
- Relaxation techniques
- Social and peer interaction skills
- Response to choices

2.3 Instructional Interventions for the Teaching Replacement Behavior

To teach socially acceptable behavior, the following skills will be introduced to DJ, his parent, caregivers, and the schoolteacher to help DJ deal with issues that trigger or maintain the CD.

2.3.1 Skills for DJ

i. Relaxation and tension-releasing skills through relaxation techniques, games, puzzles, and other activities of choice
ii. Communication and social skills
iii. Anger management skills

2.3.2 Skills for the parent

i. Behavior management skills, such as the use of reinforcement to reward appropriate behavior, response cost for inappropriate behavior, and punishment
ii. Data collection skills via a basic behavior intervention plan and monitoring skills
iii. The use of seclusive time-out
iv. Positive support skills, such as plan consistency, verbal praise, modeling, conducting a daily checklist with a reward menu, and redirection
v. Increased monitoring and supervision skills

2.4 Treatment Plan

Proposed Behavior Objective

i. The reduction of antisocial behavior in DJ by 50% after six months and the eventual elimination of antisocial behavior one-year post-treatment as means of helping him deal with issues of conduct
ii. The provision of parenting skills for DJ's father through PMT for him to effectively deal with DJ's conduct problems and establish a parent-son relationship, which a functional assessment

indicates is missing, and facilitate the generalization of new behavior management skills to other areas

iii. The maintaining of DJ's replacement behavior amongst his network of contacts involved in the treatment plan

To implement PMT, an agreement was made between the Parent of DJ and the therapist to execute a set of treatment recommendations relevant to CD. DJ's father was to identify, define, and observe behavior problems and establish ways to target specific behaviors for change. In addition, he was taught how to use social learning principles to teach appropriate behaviors and provide contingent consequences for inappropriate behaviors. The PMT has been considered adequate, supported by most vigorous studies, and has incorporated parent training to modify the child's behavior at home (Kazdin, 2002). It has essentially indicated that CD results from unintentional reinforcement of inappropriate behaviors and that maladaptive parenting are the primary cause. Based on the parent and therapist agreement, several strategies were included in Table 2.

Table 2. Strategies and Implementation

Behavior	Strategy	Implementation	Considerations	Data collection
Vandalism	Response cost, which entails withdrawing reinforcement for appropriate behavior	The parent had to agree with DJ's method of providing reinforcers, selecting behavior to be fined, setting up a response cost system and implementing as necessary, and monitoring performance	Response cost should be less than total reinforcers to avoid the loss of motivation to act appropriately	Each incident should be recorded in frequency data sheets and graphed
Cruelty	Response cost as above, self-management strategies	For self-management, teach self-monitoring and target social skills concurrently and conduct periodic checks on the accuracy The therapist provided the parent with the skills to achieve this	Desired behavior should be taught using an appropriate method	Record data for the frequency of the behavior in an ABC chart
Bullying	Time-out	Reinforcing activity should be removed for a certain period	Desired behavior should be taught using an	Collect data on the ABC chart

			appropriate method	
Stealing	Response cost	As above	As above	ABC data chart
Rules violation	• Prompting/cueing • Redirection	Determine the amount of prompting—least to most or most to most minor—and use the wait time to see if instructions are complied with, and move up the hierarchy as necessary to reach the desired response In redirection, redirect when problem behavior occurs, from negative conversations to positive conversations	Fade prompts over time to avoid prompt dependency Provide positive reinforcement for redirection	Record frequency of redirection on a frequency chart

3. Results

PMT treatment was implemented for six months from July to December 2011, with the parent fully participating and DJ being taught socially acceptable skills throughout the said period. The results obtained were recorded as per figure 1 below.

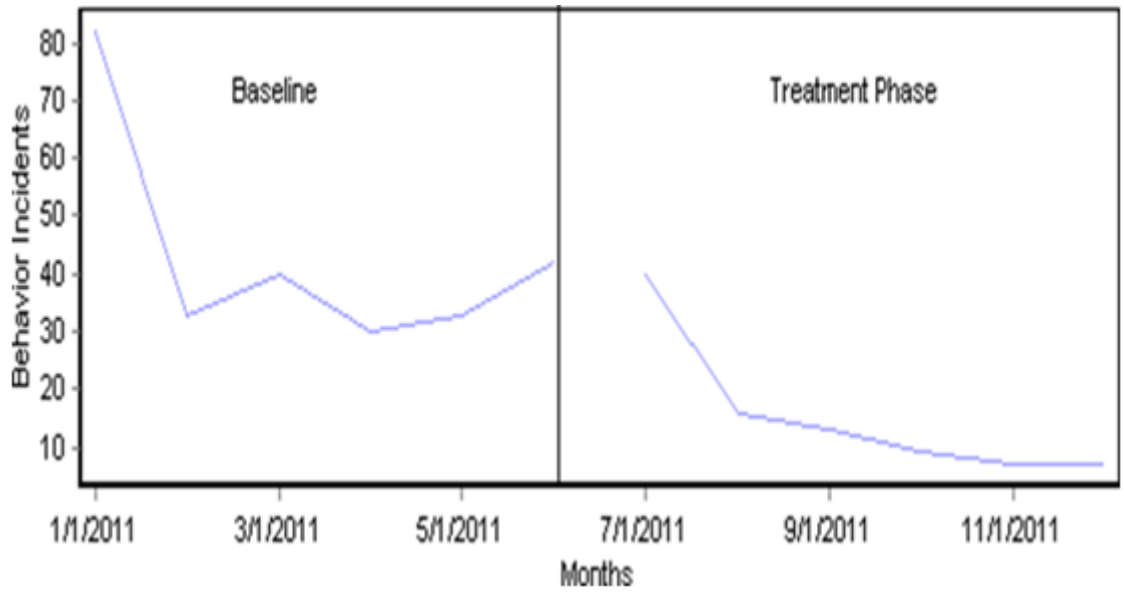

Figure 1. Conduct Disorder Chart for DJ

The graph indicates the success of PMT as it shows a decline in total antisocial behaviors immediately after parenting skills and behavior management techniques were performed. In addition, the results for the first six months of nontreatment indicate high incidences of problem behaviors. The trend observed, however, declines markedly during the treatment phase.

Table 3. Antisocial Behavior During Treatment

Behavior	Months						Total
	July	August	September	October	November	December	
Vandalism	0	1	0	0	0	0	1
Cruelty	10	2	3	1	3	4	23
Bullying	20	6	4	4	2	2	38
Stealing	2	1	0	0	1	0	4
Rules violation	8	6	6	4	2	1	27
Total antisocial behavior	40	16	13	9	7	7	92

4. Discussion

The results obtained were compared to baseline data to determine the impact on behavior modification after implementing the treatment program. Based on the objective of reducing DJ's behavioral issues by 50% within six months, the data collected indicate that the aim was realized (65%), an affirmation that the treatment plan of utilizing PMT was adequate and exceeded the set objective. CD behavioral incidents for all categories drastically reduced in number, justifying the premise that CD is a result of an absence of appropriate parenting skills and that with proper identification and treatment, behaviors associated with this disorder can be reduced to normal levels in children of a similar developmental level—while always considering that treatment must be individualized. It is hoped that the results obtained from treatment will be generalized to other non-targeted behaviors. With the skills learned by DJ and his parent and with appropriate environment variables appropriately positioned, the newly modified behavior will be maintained over time.

Treating conduct disorder has significant potential when a child's family is actively involved in the treatment process. When families are provided the necessary tools and with an appropriate support system, utilizing applied behavior analysis as a treatment approach can considerably improve behaviors for children diagnosed with conduct disorders.

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