Disruptive behavior disorders in children and adolescents: diagnosis and treatment

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INTRODUCTION

Disruptive behavior disorders (DBD) among children and adolescents constitute one of the most frequent reasons for seeking psychological, neurological and psychiatric help.¹ DBDs have also been referred to as «externalized disorders» or problems.²³ This «dimension» has included behavioral problems as well as those caused by the consumption of drugs and alcohol. The Diagnostic and Statistical Manual for Mental Disorders (DSM), in its fourth edition,⁴ includes

SUMMARY

Disruptive behavior disorders (DBD) in children and adolescents are among the most frequent reasons for consultation and counseling. For oppositional defiant disorder (ODD), psychosocial management is the therapeutic intervention of choice. Training parents and caregivers on the behavioral management of the child or early adolescent (12 to 15 years) is the best intervention approach. Behavioral perspective must cover all contexts: family, school, and the child him/herself. The clinician must develop an individualized treatment plan. Interventions should be based on the methods with the greatest amount of empirical evidence. The use of medication may be helpful as a supplement to psychosocial interventions to treat symptoms and comorbid conditions. Severe and persistent ODD may require prolonged and intensive treatment. Brief interventions are usually ineffective.

Conduct disorder (CD) is a mixed manifestation that requires biological, psychological and social therapeutic intervention. Psychopharmacological treatment alone is never enough. Studies of medications for the treatment of CD may be grouped according to the type of drug used: mood stabilizers, antipsychotics and stimulants. The overall effect size of psychotropic agents in the treatment of aggression is 0.56. Currently only three psychosocial treatments have been adequately evaluated: a) Training for parents, b) Cognitive training on problem-solving skills and c) Multisystemic therapy.

Conclusions

ODD and CD are among the most common and severe mental disorders among children and adolescents. Treatment of these conditions must be multimodal or multisystemic, including pharmacological, psychoeducational and psychotherapeutic approaches.

Key words: Disruptive behavior, diagnosis, treatment, children, adolescent.

RESUMEN

Los Trastornos de la Conducta Disruptiva (TCD) en la infancia y la adolescencia constituyen uno de los motivos más frecuentes de consulta.

En el Trastorno Negativista y Desafiante (TND) el tratamiento psicosocial es la intervención terapéutica de primera elección. Los programas de intervención desde una perspectiva conductual abarcan todos los contextos: familiar, escolar y del propio niño o adolescente. El clínico debe considerar importante cualquier información obtenida de otros informantes, vgr. maestros, para realizar un plan de tratamiento individualizado. Las intervenciones sugeridas a los padres deben basarse en las de mayor evidencia científica. El uso de medicamentos puede ser útil como tratamiento adjunto a las intervenciones psicosociales, para el tratamiento sintomático y el de la comorbilidades. Cuando el TND es intenso y persistente se pueden requerir tratamientos prolongados e intensivos. Las intervenciones cortas usualmente son inefectivas.

El Trastorno Disocial (TD) es un fenómeno que por su naturaleza mixta, biológica, psicológica y social, requiere de una intervención terapéutica integral. La magnitud del efecto global de los fármacos en el tratamiento de la agresión es de 0.56. Actualmente sólo tres tratamientos psicosociales han sido adecuadamente evaluados: a) El entrenamiento para padres, b) el entrenamiento cognitivo en habilidades para resolver problemas y c) la terapia multisistémica.

Conclusiones

Los padecimientos externalizados como el TND y el TD; constituyen algunos de los problemas más frecuentes y graves dentro de los trastornos mentales de inicio en la infancia y la adolescencia. El tratamiento de estos padecimientos debe tener un enfoque multimodal o multisistémico que incorpore las aproximaciones farmacológicas, psicoeducativas y psicoterapéuticas necesarias.

Palabras clave: Conducta disruptiva, diagnóstico, tratamiento, niños y adolescentes.

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attention deficit hyperactivity disorders (ADHD), ODD, dyssocial disorder, as well as substance use disorders (SUDs) and intermittent explosive disorder (IED). IED forms part of the impulse control disorders, which is frequently comorbid with externalized disorders. Considering that ODD and dyssocial disorder constitute the key conditions of DBDs within the DSM-IV, while corresponding to the categories of behavioral disorders (F.90) of the WHO International Classification of Diseases (ICD), in its tenth edition, in particular to sets F91.0, F91.1 and F91.2 of behavioral disorders and F91.3 corresponding to oppositional defiant disorder, clinical and therapeutic descriptions will focus on these two disorders.

Oppositional defiant disorder is characterized by the manifestation of a pattern of hostile behavior (argumentative, disobedient, etc.), primarily against authority figures. It begins during childhood and results in deterioration of functioning in at least two of these three areas: school, home, and friends.4

Dyssocial disorder is characterized by a persistent and repetitive pattern of violating rules and norms established for respective age groups (lying, stealing, hurting, etc.). It begins during childhood and results in deterioration of functioning in at least two of these three areas: school, home, and friends.4

In 2007, the American Academy of Child and Adolescent Psychiatry (AACAP) released the practical parameters for diagnosis and treatment of ADD.6 Likewise, in Mexico, the Juan N. Navarro Children’s Psychiatric Hospital published its Clinical Guidelines in 2010. The Second Clinical Guidelines correspond to behavioral disorders.7 The RFM National Institute of Psychiatry, through its Adolescent Clinic, published Clinical Guidelines for ODD8 and for DD.9 These publications constitute an important element for the preparation of this article, and we recommend they be used as a reference when seeking more extensive parameters and guidelines. The main objective of this review is to present the most important information for diagnosis and treatment of DBD.

**OPPOSITIONAL DEFIANT DISORDER**

**Clinical Definition and Characteristics**

ODD is defined by a recurrent pattern, which causes clinically significant deterioration, of oppositional, defiant, disobedient and hostile behavior directed toward authority figures, which must present more or less constantly, and which include some of the following behaviors: shouting and temper tantrums, arguing with adults, actively defying adults or refusing to meet their demands, deliberately annoying others, accusing others for one’s own mistakes or bad behavior, being easily bothered by others, anger and resentment, spiteful and vindictive actions. While ODD is of significant clinical relevance, relatively little is known about it, possibly due to the false belief that this disorder is a variation or manifestation of DD.4 Diagnosis of ODD is clinical, and no laboratory or desk studies are required.

**Etiology**

It has been difficult to differentiate between the etiological factors of ODD, given that research is generally geared towards DD. However, we can identify at least three types of factors: biological, psychological, and social.

**Biological Factors:** There are associated family patterns of psychopathology such as ADHD, SUD and affective disorders.10 In addition, factors have been identified relating to bad temper in children that later develop ODD.11

**Psychological Factors:** ODD has been associated with insecure attachment as well as deficient parental care.12 In addition, aggressive children demonstrate a failure to recognize certain social cues, wrongly attribute the behavior of peers as being aggressive, resulting in few solutions for problems, and the expectation of being rewarded for their aggressive responses.13

**Social Factors:** Poverty, lack of social structure, and violence in the community contribute to diagnosis of ODD.14 It must be taken into account that there is a high level of comorbidity between ODD, ADHD and DD, and as such, these children and adolescents experience multiple intra-individual and contextual risk factors, beginning in childhood, which can result in adverse formation of personality as the last manifestation of the overall risk of externalized psychopathology.15

**Epidemiology**

In the general population, ODD is estimated to occur in approximately 1 to 16% of individuals.16 Around 75% of subjects with ADHD present at least one comorbid disorder, and ODD is the most common such disorder. ODD increases the risk of suffering from DD during adolescence and an antisocial personality disorder (APD) during adulthood. The co-occurrence of ODD and DD with ADHD occurs in a bidirectional way, that is, in children and adolescents with ADHD, presence of ODD or DD has been estimated at between 15 and 60%. Likewise, between 70 to 80% of children and adolescents with BD or ODD meet the criteria for ADHD.6

**Treatment**

The eleven general principles recommended by the practical parameters of the AACAP6 for ODD are included in Table 1. Once diagnosis is confirmed of ODD, psychosocial management is the therapeutic option of choice. A recommendation that will help in considering psychosocial
**Table 1. Practice Parameters for Oppositional Defiant Disorder from the American Academy of Child and Adolescent Psychiatry**

1. Optimal evaluation and treatment of ODD require a sufficient therapeutic partnership with the child or adolescent and his/her parents.
2. Cultural aspects must be taken into consideration in diagnosis and treatment.
3. Evaluation of ODD must include information obtained directly from the child or adolescent as well as his/her parents in the areas of basic symptoms, age of onset, duration of symptoms and level of functional deterioration.
4. Psychiatric comorbidity must be considered.
5. The clinician must give importance to any other information obtained from other informants, such as teachers.
6. The use of instruments or interviews in the evaluation and follow-up is recommended.
7. The clinician must perform an individualized treatment plan.
8. Interventions suggested for parents must be based on the interventions with the most empirical evidence.
9. The use of medications may be useful as an adjunct to psychosocial interventions, for symptomatic treatment and for comorbid conditions.
10. When ODD is severe and persistent, prolonged and intensive treatments may be required.
11. Interventions in which the child or adolescent is exposed to frightening scenarios or situations meant to induce him/her to desist from his/her behaviors should be avoided. Shorter interventions are typically ineffective.

intervention and for the specific treatment indications for children and early adolescents is to consider the presence of ODD with or without the presence of a DD. Among the interventions with greatest evidence is the training of parents and caregivers on behavioral management of the child or early adolescent (12 to 15 years of age).15 These interventions are based on the supposition that bad behavior is the result of inadequate, inconsistent and non-contingent parenting. For this reason, the child has learned that oppositional behavior is an effective way to manipulate adults so that they bend to his/her will. Intervention programs from a behavioral perspective cover all contexts: family, school, and that of the child him/herself. Most behavioral intervention models are based on behavioral analysis through an approach called ABC (antecedents, behavior, consequences).

One of the most widely used programs for ODD treatment is the Russell Barkley Program. The Barkley program consists of eight steps which seek to improve behavior, social relationships and general adaptation at home of the child or early adolescent. These steps are: learn to provide the child with positive attention, use the power of their attention to make him/her behave, give effective orders, teach him/her not to interrupt activities, establish a reward system at home, learn to punish bad behavior in a constructive way, spend more time out of the house, and learn to control the child in public places.18 A study comparing training of parents provided by nurses and psychologists and self-instruction using bibliographic materials indicated that both instruction by a professional and self-instruction were effective in reducing oppositional and defiant behaviors in children.19 Interventions in older adolescents (16 to 17 years of age) must include family psychoeducational interventions or family therapy.

Pharmacological treatment of ODD is aimed primarily at comorbidly with ADHD, DD, or the suspicion of an affective disorder and/or sub-syndromic anxiety disorder, and must be conducted by a physician specialized in mental health.

**DYSSOCIAL DISORDER**

**Clinical Definition and Characteristics**

DD is the most serious of externalized disorders, and is characterized by a repetitive and persistent pattern of behavior that includes the violation of the basic rights of others, social norms, or laws. DD is one of the psychiatric disorders most common in clinical and community samples of the adolescent population.9

DD is characterized by four areas of manifestation: aggression toward people and animals, destruction of property, fraudulence/theft, and serious violation of social norms. This category includes a series of very heterogeneous manifestations that have been described as including: bragging; threats or intimidation toward others; physical fights; use of weapons that can cause serious physical harm to others (sticks, bottles, knives, guns); manifestation of physical cruelty toward people or animals; theft; forcing someone to perform a sexual act; deliberately causing fires with the intention of causing serious damage; deliberate destruction of other people’s property; forced entry into other people’s homes or cars; lying to obtain benefits, favors, or avoid obligations; theft of items of nontrivial value without confronting the victim; staying out at night despite parental demands; beginning these behaviors before 13 years of age; sneaking out of the house at night on at least two occasions; and «cutting class.»4 The DSM specifies the type, be it childhood- or adolescence-onset, and intensity, as light, moderate, or serious, based on the number of symptoms present. Diagnosis of DD is clinical and does not require laboratory tests or desk studies.

In terms of the development of DD, it can have four trajectories: the first includes the group of individuals with light but sustained behavioral manifestations through development; the second concerns subjects that experience onset during childhood and whose behavioral problems are limited to this life stage; a third group includes subjects that experience onset during childhood and whose behavioral problems persist throughout development.20 The trajectory...
of the DD presented by each patient must be considered in order to adjust and customize treatment options.

Individual differences in aggressiveness (predatory vs. non-predatory, open vs. concealed) are as stable as the individual differences in intelligence, and several studies have shown that the presence of youth aggression and violence are predictors of future delinquency. The best predictor of the continuity of aggressive behaviors is whether such behaviors began prior to 10 years of age.21

A review was recently published on the proposed modifications for DD in the DSM-5, indicating that diagnostic protocol for this disorder include: evaluation of a subtype restricted to childhood, family psychiatric history, characteristics of «emotional callus,» specific criteria for females and pre-school age children, early use of substances, and psychological, genetic and brain imaging biomarkers.22

**Epidemiology**

The reported prevalence of this disorder in community samples varies from 1.5 to 3.4%. This disorder is four times more common in males than in females. Clinical samples show high comorbidity with both externalized and internalized disorders.21

**Treatment**

DD is a phenomenon that due to its biological, psychological and social nature, requires comprehensive therapeutic intervention, referred to as multimodal treatment.23

The guidelines for evaluation and treatment of severe DD and indications for pharmacological treatment are shown in Table 2.23

| Pharmacological Treatment |

Pharmacological treatment alone will never suffice and must be combined with management of aggressive behaviors and comorbid conditions. Studies on medications for treatment of DD can be categorized according to the type of drug used: mood stabilizers, antipsychotics, and stimulants. Lithium is the medication with most documentation of successful treatment in controlled studies (range of dosage from 0.5 to 2.1 g/day). There are three controlled studies with typical antipsychotic drugs (haloperidol at 1 to 6 mg/day) and two with atypical antipsychotic drugs in which symptoms were decreased. The use of atypical antipsychotic drugs is recommended, such as risperidone (1.5 to 40 mg/day) or aripiprazole (5 to 15 mg/day). The side effects of lithium and antipsychotic drugs (both typical and atypical) must be taken into account. In particular, the metabolic changes associated with prolonged use of atypical antipsychotic drugs must be considered. In the case of stimulants, methylphenidate (0.6 to 1 mg/kg/day) has been seen to decrease symptoms of DD even without diagnosis of ADHD. Some other pharmacological agents such as antidepressants (bupropion) or alpha-adrenergic agonists (clonidine) have been used to decrease aggressive symptoms.24

Very recently, an open study was published of pre-school age children with no intellectual disability but with behavioral problems. The study included 10 subjects, 8 boys and two girls. Average daily dosage of risperidone during a period of eight weeks was 0.78 mg/day, with a maximum of 1.5 mg/day. The clinical global impression scale was used (CGI) to assess improvements. Risperidone was associated with a reduction of 78% in the severity score of the CGI. Tolerability was good and no serious side effects were observed. Statistically significant increases were detected in levels of prolactin (p<0.05), but there was no manifestation of clinical symptoms associated with prolactinemia.25

Prior to writing a prescription, it is recommended that the clinician review the «practical parameters» for use of psychotropic medications in pediatric populations, published by the American Academy of Child and Adolescent Psychiatry.26

In recent years a review was published on the efficacy and effect size (ES) of different medications on aggressive behavior. The overall ES of the psychotropic agents studied on treatment for aggression was 0.56. Despite the variability in the psychiatric diagnoses, the different selected agents showed a moderate to large ES for aggression. Most of the studies focused on younger children (average age = 10.4 years).

**Table 2. Guidelines for evaluation and treatment of severe behavioral disorder and indications for pharmacological treatment**

1. Crisis Management, as needed
   - Hospitalization and crisis therapy.
   - Antipsychotics, if aggressive behavior persists.

2. Evaluate the psychopathology of the adolescent and his/her context
   - Psychiatric vulnerabilities.
   - Family environment and social context.
   - Academic performance.
   - Cognitive abnormalities.
   - History of prior treatments.

3. Choose the appropriate interventions for each individual case according to prior evaluation
   - Family therapy, cognitive behavioral therapy, multisystemic therapy, etc.

4. Consider pharmacotherapy when:
   - The behavioral disorder persists.
   - Associated psychiatric morbidity exists.

5. After prescription, evaluate:
   - Acceptance of treatment by the adolescent and his/her family.
   - Quantify and monitor symptoms.

6. Select the medication according to points 4 and 5
   - ADHD: stimulants.
   - Emotional lability: mood stabilizers.
   - Aggressiveness: mood stabilizers or antipsychotics.
   - Anxiety: antidepressants.

7. Always use psychosocial intervention and family support.
years), and were of shorter duration (7 to 70 days). Greater effects were found with methylphenidate for the treatment of aggression when comorbid with ADHD (average ES = 0.9) and for risperidone in young people with disruptive behavior disorder and intellectual quotient below average (average ES = 0.9).27

**Psychosocial Treatment**

Currently, only three psychosocial treatments have been properly assessed: 1. training of parents, which is aimed at changing the parent-child relational pattern at home; 2. training of the child or adolescent on problem-solving skills, which focuses on the cognitive processes associated with social behaviors and acknowledging the consequences of their behaviors; 3. MST, which focuses on the individual-family-environmental systems as a means to reduce symptoms and encourage socially adapted behaviors.23

Parent training has been described as part of ODD treatment. Training on problem-solving skills and acknowledging the consequences of behaviors offers the opportunity to modify aggressive behaviors.

The principles of multisystemic therapy (MST) are based on the general systems theory and Bronfenbrenner’s socio-ecological theory. This type of therapy considers the individual and the environment that surrounds him/her as systems in permanent connection with reciprocal and dynamic influences. The objective is to identify the current problems of the adolescent and his/her family within the community environment, to analyze the problems identified based on the dynamic interaction of the subsystems involved, and lastly, to design interventions according to each particular case. These interventions must be conducted within the natural environment in which the child/adolescent lives. The principles upon which MST is based include: 1. understanding the way in which the problems identified interact; 2. the therapist favors positive aspects of intervention in order to motivate parents and the child/adolescent to participate; 3. interventions are designed to promote responsible behaviors among family members; 4. interventions are focused on the present and aimed at taking action for specific and well-defined problems; 5. interventions are aimed sequentially toward different systems that maintain the problem; 6. interventions are designed taking into consideration the developmental level of the child/adolescent; 7. interventions require active and permanent participation on the part of the family; 8. permanent evaluations are conducted on the effectiveness of the interventions; 9. interventions are planned to promote the generalization of the treatment and to maintain changes over the long term. MST has a duration of between three and five months, with the possibility of increasing said period depending on the results obtained.23

MST has proven its efficacy in young people with sexually aggressive behaviors, reducing the problems caused by their sexual behaviors, delinquency, the use of substances, externalized symptoms, and problems outside of their home.28 It has also demonstrated greater cost effectiveness as compared to individual therapy in young people with violent/aggressive behavior.29

**«EMOTIONAL CALLUS» AND PSYCHOPATHY**

**«Emotional Callus»**

In current literature, there is increasing evidence with regard to the presence of so-called «emotional callus» (EC) as a distinctive element for DD subtypes. This characteristic involves the lack of guilt or remorse, absence of empathy for others, lack of concern for poor personal performance at work or in school, and a deficient expression of affectation or kindness.30 This characteristic has been identified as a violent, stable and serious form of aggressive and antisocial behavior. In addition, different cognitive patterns have been identified in children with EC, including lack of sensitivity to punishment, expectations of a favorable outcome from aggressive behavior, and lack of empathy.31

Etiological factors have been identified related to EC, as shown in family studies. Hereditability of APD has been estimated at 81% when there is also a significant manifestation of EC. In contrast, the hereditability of APD alone has been reported at 30% when few signs of EC are present. Studies with twins have shown that there is a hereditability shared between EC and DD.32 The association between EC and DD has been studied in community samples of children and adolescents; 46.1% of subjects with DD showed significant signs of EC and 2.5% of subjects without DD showed significant signs of EC; children and adolescents with DD and significant signs of EC showed more intense symptoms of DBD and a higher risk of continuing with DD in a three-year follow-up evaluation.33 The DSM-III included the signs of EC in the low-socialization subtype of DD, including among others, changes in interpersonal relations as a result of a lack of empathy and guilt. It is likely that the DSM-5 and the ICD-11 will contain descriptors for identification of EC.22

**Psychopathy**

The construct of psychopathy associated with personality has been a focus of clinical research in recent decades. It is one of the most studied dimensions, given its relevance as a predictor of severity and recurrence of dyssocial behavior. Studies that evaluate psychopathy have reported three fundamental factors that make up this construct: EC, narcissism, and impulsivity. Most of these studies have focused on the adult population, or on small samples of the pediatric population (predominantly males) referred
to clinical treatment, which limits the generalization of findings. The evaluation of psychopathic behavior has been studied using the Psychopathy Screening Device (PSD), which has been adapted for the pediatric population. It consists of 20 items with a parent/guardian version and a teacher version. Factor analysis of this instrument in the overall population has identified two factors: Narcissistic traits/impulsivity and «callus»/emotional numbness.

There is no rational therapeutic option designed specifically to treat specifiers of EC and psychopathy. Current options focus on the DD and APD without detailing concrete actions for these specifiers.

CONCLUSIONS

Externalized disorders include ODD and DD as primary categories. They correspond to the most common and severe problems within mental disorders with childhood- and adolescence-onset. Manifestations with which DD is currently diagnosed are very heterogeneous, given that they include extremely aggressive behaviors (for example, assault with a firearm, physical and sexual violence) and other less aggressive behaviors (for example, lying, or «cutting class»). There is significant continuity with subjects with DD who experience early onset toward manifestations of APD in adult life. The etiology of DBDs incorporates both biological and psychosocial components. Treatment of these disorders must implement a multimodal or multisystemic approach that incorporates the necessary pharmacological, psychoeducational and psycho-therapeutic approaches. Despite all the aforementioned therapeutic options, there is little specificity due to the variability of behavioral manifestations. Some subjects with DD and «emotional callus» develop a psychopathy, which constitutes a specifier related to more intense and severe disruptive behaviors of DBDs.

REFERENCES