



# Evidence-based psychosocial treatments of conduct problems in children and adolescents: an overview

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The aims of the present study were to identify empirically supported psychosocial intervention programs for young people with conduct problems and to evaluate the underpinnings, techniques and outcomes of these treatments. We analyzed reviews and meta-analyses published between 1982 and 2016 concerning psychosocial intervention programs for children aged 3 to 12 years with conduct problems. Parent training should be considered the first-line approach to dealing with young children, whereas cognitive-behavioral approaches have a greater effect on older youths. Family interventions have shown greater efficacy in older youths, whereas multi-component and multimodal treatment approaches have yielded moderate effects in both childhood and adolescence.

Some limitations were found, especially regarding the evaluation of effects. To date, no single program has emerged as the best. However, it emerges that the choice of intervention should be age-specific and should take into account developmental differences in cognitive, behavioral, affective and communicative abilities.

**Keywords:** Conduct problems; disruptive disorders; psychosocial treatment; evidence-based intervention programs; effectiveness.

#### Introduction

Behavioral problems in young people are common and costly, being the most frequent cause of referral of children and adolescents to mental health services (Rutter et al., 2008). This is not surprising, as antisocial behaviors in childhood and adolescence elicit significant social reactions and are closely associated with delinquency and mental health problems in adulthood (Loeber & Farrington, 2001; Moffitt, 1993; Reef, van Meurs, Verhulst, & van der Ende, 2010).

In Western countries, it has been reported that the prevalence of conduct problems in subjects between 5 and 15 years of age is 5–10% (Loeber & Farrington, 2001) and is steadily increasing, though it is not clear

whether this rise is due to a real increase in the phenomenon or to better detection. The economic consequences are considerable: it is estimated that the costs incurred for youths with conduct problems are at least 10 times higher than in non-antisocial individuals by the time they reach 28 years of age (Scott, Knapp, Henderson, & Maughan, 2001).

Conduct problems cover a broad spectrum of behaviors and typically include trouble-some, disruptive and aggressive behavior; an unwillingness or inability to perform school work; few positive interactions with adults; poor social skills; low self-esteem; non-compliance with instructions and emotional volatility (Furlong et al., 2012).

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Extensive research in the fields of psychiatry, developmental psychopathology and criminology has furthered our understanding of the many factors that may be involved in the development of juveniles' conduct problems. Each of these disciplines has its own tradition of assessment, which yields different outcomes (Loeber, Burke & Pardini, 2009).

Psychiatry adopts a mainly medical approach, classifying children with disruptive behaviors in clinical categories according to symptom-based criteria. Clearly, children with these diagnoses constitute only a subset of those with conduct problems, since different forms of aggressive and antisocial behavior become clinically relevant only when aggregated.

Developmental psychopathology does not focus on classification, but on the developmental mechanisms that can lead to conduct problems. It therefore analyzes individual differences in the qualitative and quantitative aspects of antisocial behaviors. Such analyses reveal, for instance, that the incidence of stealing and truancy increases with age, whereas the frequency of physical fighting tends to decrease (Barker et al., 2007).

By contrast, criminology does not adopt a medical approach, preferring to refer to the more specific notion of 'behaviors that violate criminal laws' and focusing mainly on sociological explanations of antisocial behaviors.

Research from each of these disciplines provides a unique perspective for understanding the course, causes and possible treatment of antisocial behaviors in young people, and the results obtained have had a significant impact on assessment and the design of more effective and specific interventions to prevent and treat this phenomenon.

In this manuscript, we focus on the psychosocial treatment of conduct problems in youth. Despite the widespread publication of lists of evidence-based interventions (Eyberg, Nelson, & Boggs, 2008), a large gap remains between the knowledge gained through empirical research and clinical practice (Garland, Hawley, Brookman-Frazee, & Hurlburt, 2008). Several programs have been proposed and

evaluated (Substance Abuse and Mental Health Services Administration, 2011), but much remains to be learned about their implementation and about how to support their effective ongoing delivery in community-based settings.

In the first part of the manuscript, we focus on psychosocial interventions, reviewing the scientific literature on evidence-based treatments (EBTs) and evaluating the underpinnings, techniques and outcomes of these treatments. Some examples of the most widespread programs are also provided. We then conclude by discussing the critical issues raised and proposing some recommendations for future work to overcome these problems.

## Conduct problems in youth: a brief overview

Before discussing treatment, it is important to delineate the clinical extent of the phenomenon.

Indeed, conduct problems cover a broad spectrum of acting-out behaviors, ranging from relatively minor oppositional behaviors, such as yelling and temper tantrums, to more serious forms of antisocial behavior, such as physical destructiveness, stealing and physical violence. Moreover, it should be remembered that aggressive and defiant behavior is an important part of normal child and adolescent development, which ensures physical and social survival.

As noted by Scott (2007), empirical studies do not suggest a level at which behaviors become qualitatively different, nor is there a single cut-off point at which they become impairing for the child or a clear problem for others.

One relevant question that is often raised in clinical and research practice is whether or not patterns of antisocial behavior should or should not be considered a psychopathological condition (Wakefield, Pottick, & Kirk, 2002). The answer is largely dependent on how one defines 'mental disorder' (First, Wakefield, et al., 2010). Indeed, picking a particular level of antisocial behavior that is classifiable as a

'disorder' is therefore necessarily arbitrary (Moffitt et al., 2007).

Although disruptive behaviors are seen to varying degrees during the development of most young people, they become clinically relevant when they are frequent, severe, persistent, not just isolated acts, and lead to distress and functional impairment (American Academy of Child & Adolescent Psychiatry, 1997).

The term 'disruptive behavior disorders' (DBDs) is an overarching expression used in psychiatric nosology to describe these conditions, in which conduct problems (e.g. breaking rules, disrupting the lives of caregivers, defying authority, etc.) are clinically significant and clearly beyond the realm of 'normal' functioning.

According to the psychiatric nosography (American Psychiatric Association, 2013), children with these patterns of disruptive behaviors may be diagnosed with Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD), when behavior involves significant violations of the rights of others and/or major societal norms.

Indeed it is important to bear in mind the different conception of the term 'juvenile delinquency', a socio-legal category that refers to children and adolescents who have been convicted of an offence that would be deemed a crime if committed by an adult. Most, but not all, recurrent juvenile offenders can be regarded as suffering from conduct disorder (Woolfenden, Williams, & Peat, 2001).

A comprehensive review of the literature (Boylan, Vaillancourt, Boyle, & Szatmari, 2007) found that the prevalence of ODD reported in community samples ranged from 2.6% to 15.6%, and in clinical samples from 28% to 65%. Moreover, although boys show higher prevalence rates than girls prior to adolescence, during adolescence boys and girls display equal rates of ODD.

There is evidence that ODD can be clearly distinguished from common problem behaviors among preschool children in both clinical (Keenan & Wakschlag, 2004) and community

(Lavigne et al., 2001) samples. Although most empirical evidence supports a distinction between ODD and CD within a DBD spectrum, other evidence appears to support a distinction between ODD and aggressive CD and non-aggressive CD behaviors (Loeber, Burke, Lahey, Winters, & Zera, 2000).

The diagnosis of ODD is relatively stable over time, in that diagnostic criteria are reported to be met in two successive years in 36% of cases (Burke, Pardini, & Loeber, 2008). Moreover, ODD is a significant risk factor for CD, children with earlier-onset ODD displaying a three-fold higher incidence of CD (Burke, Loeber, Lahey, & Rathouz, 2005). In addition, youths with ODD appear to have significantly higher rates of co-morbid psychiatric disorders, such as ADHD, anxiety disorders, depressive disorders and substance use disorders, and ODD is associated with subsequent impairments in school and social functioning, even when other forms psychopathology are taken into account (Greene et al., 2002).

CD is divided into childhood-onset and adolescent-onset subtypes, according whether the first CD symptom emerges before or after the age of 10 years. Evidence suggests that childhood-onset CD is particularly associated with a more persistent and severe course than adolescent-onset CD, and is associated with a greater risk of antisocial behavior, violence and criminality in adulthood (Odgers et al., 2008). In addition, CD tends to progress from less to more severe problem behaviors, with a more rapid increase in this progression being observed in childhood-onset CD (Frick & Viding, 2009). Furthermore, there are developmental differences in the manifestation of CD symptoms; for example, the incidence of stealing and truancy increases with age, as does the total number of CD symptoms, whereas the initiation of physical fights tends to decrease (Barker et al., 2007).

Prevalence rates of CD in community samples have been found to range from 1.8% to 16.0% for boys, and 0.8% to 9.2% for girls

(Loeber et al., 2000). In contrast to ODD, gender differences appear to remain consistent throughout development.

The stability of CD diagnoses is moderate to high, ranging from 44% to 88% (Loeber, Burke & Pardini, 2009), the course being strongly influenced by the age of onset. Indeed, in about half of those with early-onset CD, serious problems persist into adulthood, while the great majority (over 85%) of those with adolescent-onset CD discontinue their antisocial behavior by their early twenties (Moffitt & Scott, 2008). Moreover, childhoodonset CD is a strong predictor of antisocial personality disorder (APD), especially among subjects from families of low socio-economic status. On the other hand, the majority of children with CD will not progress to APD (Kim-Cohen et al., 2005). Other negative outcomes include substance-related disorders, internalizing psychopathology and all personality disorders (Morcillo et al., 2012).

Recent research has suggested that a minority of youths with CD display traits similar to those of adult psychopathy (Kahn, Frick, Youngstrom, Findling, & Youngstrom, 2012). For this reason in the DSM-5 it has been suggested a subtype "With a Callous-Unemotional Presentation" (American Psychiatric Association, 2013). To meet this specification, the young person must fulfill the criteria for CD and display two or more callous-unemotional (CU) characteristics. These include: lack of remorse or feelings of guilt, lack of empathy, unconcern over performance in important activities, and/or shallow affection, persistently for at least 12 months across multiple settings and relationships (Scheepers, Buitelaar, & Matthys, 2011). Youths with CU traits show more severe and stable conduct problems (Frick & Dickens, 2006), are more difficult to treat and often do not respond to typical treatments in mental health or juvenile justice settings (Stellwagen & Kerig, 2010).

While no single cause of ODD and CD has been identified, a number of risk factors have been found. These include biological

(e.g. genes and neurotransmitters), perinatal (e.g. minor physical anomalies and low birth weight), cognitive (e.g. deficits in executive functioning), emotional (e.g. poor emotional regulation), personality (e.g. impulsivity), familial (e.g. ineffective discipline), peer (e.g. association with deviant peers) and neighborhood (e.g. high levels of exposure to violence) risk factors (for a review, see Murray & Farrington, 2010).

The bulk of the research has made it clear that causal models cannot focus on single risk factors or single domains of risk factors, since DBDs are the result of a complex interaction of multiple causal factors (Lahey & Waldman, 2012). From a diagnostic point of view, it should be highlighted that the diagnosis of DBDs is – and remains – mainly clinical, despite the availability of a wide range of instruments for measuring the symptoms of ODD and CD and for assisting the assessment process ( for a review, see Frick & Nigg, 2012 and Barry, Golmaryami, Rivera-Hudson, & Frick et al., 2013).

## Identification of evidence-based treatments

To identify empirically supported psychosocial intervention programs for the young with conduct problems, we searched for and analyzed reviews and meta-analyses published between 1982 and 2016 concerning treatments for children and adolescents with disruptive behaviors.

Disruptive behaviors were broadly defined on the basis of the symptoms described in the psychiatric classification systems (DSM and ICD). Treatment was defined as any psychosocial intervention aimed at reducing aggressive, oppositional and disruptive behaviors or enhancing prosocial behavior.

Preventive interventions were included only if they involved children with early signs of disruptive behaviors (indicated prevention). Interventions designed with the primary goal of preventing conduct problems (universal and selected) were not included.

We considered as evidence-based the interventions that were recognized in most of the reviews and meta-analyses as well-established or probably efficacious according to the American Psychological Association's criteria (Chambless & Hollon, 1998; Task Force APA, 1995) and/or which were identified as superior to the comparison on at least 50% of the disruptive behavior measures.

Two methods were used to identify the database: an internet-based search and a manual search. First, four internet-based databases (Cochrane Reviews, MEDLINE, PsycINFO and Scopus) were searched for articles published between January 1982 and December 2011. All the necessary terms referring to the treatment (psychosocial interventions; individual, family, multi-systemic, parent, school programs; etc.) and the participant groups (age 3-18 years, conduct disorder, oppositional defiant disorder, maladaptive aggression, disruptive behavior, juvenile delinquency) were used. Search terms were modified to meet the requirements of each database. Second, further articles were identified by means of a manual search of reference lists from papers retrieved.

The reviews and meta-analyses examined are included in the reference section; Table 1 summarizes a few characteristics of the most relevant interventions. It is important to bear in mind that the inventory of studies analyzed is a 'working list'; indeed, although we attempted to make an exhaustive review of the literature on the outcome of psychosocial treatment, our search may have missed some important treatments.

# Empirically supported intervention programs for youths with conduct problems

Psychosocial interventions for youths with conduct problems have been developed across a wide spectrum (from the individual level to the family and community levels) and over a range of theoretical frameworks (e.g. social learning theory, cognitive-behavioral therapy, systemic and psychodynamic approaches). On the whole, the range of treatments for child conduct problems that have been evaluated empirically may be broadly classified according to the key focus of delivery, in terms of whether they are child-focused, parent-focused, family-focused, multi-modal or multi-component.

With regard to interventions for the individual child, the most carefully evaluated methods are based on cognitive-behavioral principles (Furlong et al., 2012). More traditional forms of psychotherapy, such as psychodynamic therapy, have also been used, but some studies have stressed that these approaches have not been evaluated rigorously and are less supported by the existing evidence (Weiss, Catron, Harris, & Phung, 1999).

## Child-focused programs

Broadly speaking, the child-focused cognitivebehavioral approach emphasizes helping the child to identify stimuli linked to aggressive and antisocial behaviors, to face cognitive distortions, to develop problem-solving skills and to cope with anger and frustration. Thus, the proposed mechanisms of therapeutic change are modifications of the child's abilities in each of these skill areas (Nock, 2003).

Two of the best evaluated treatment models are Problem-Solving Skills Training (PSST) and the Anger Coping Program.

The PSST program was originally drawn up by Alan Kazdin for children aged 5–12 years who were referred for oppositional, aggressive and antisocial behaviors and who were hospitalized in the Child Psychiatric Intensive Care Service facility of the University of Pittsburg (Kazdin, Esveldt-Dawson, French, & Unis, 1987). In its most recent version, which was created at the Yale Parenting Center and Child Conduct Clinic, the age of the patients was raised to 14 years, though in exceptional cases older subjects are

Table 1. Evidence-based psychosocial treatments of conduct problems in children and adolescents: selected study characteristics.

Follow-up time	1-year	1-year	9-years	2-months	6-months	l-year	12 months	4	3-years	15-years (Continued)	(Communea)
Outcome measures and main findings	nti- /ior n roup	•	Significantly reductions in teacher- reported delinquency and police arrests for focal boys	Significant improvements were observed 2-in the behaviours of the children receiving NCCP in comparison to control group	ehavior in parent-reported behavior in children, and and discipline practices ol group	oorted disrup- ver levels of ,, greater paren-	Significant reduction in Serious crimes 12	Significantly greater pre- to post-inter- NA vention improvement in parent reports of adolescent conduct problems and delinquency	Reduction of CD symptoms, both in the 3-short term and longer term	Significantly more boys in the intervention group completed high-school	
Age and gender	7-13 yrs; male and female	Boys and girls during the 5th- and 6th- grade years	Mothers and elementary school-aged boys	Boys and girls from 3 to 8 years	Boys and girls from 3 to 5 years	305 families with a 3- year-old child	917 families with juve- niles from 13 to 17 years	126 families with juveniles from 12 to 18 years	Families with children aged 3-5 years	Boys aged 7-9 years	
Design and sample	112 children ran- domly assigned	245 children randomly assigned	at-risk sample of 238 single mothers and their sons	Twenty-four children with a diagnosed oppositional disorder randomly assigned	Families of 54 behaviorally disturbed preschool-aged children randomly assigned	Families of preschoolers at high risk of devel- oping conduct prob- lems ran- domly assigned	Youth who are at risk for or are involved in delinquency and or disruptive behavior disorder and their families	Hispanic adolescents with parental or school complaints of externalizing behavior problems and their families	133 families that had been previously randomized with chil- dren wuth con- duct disorder	Disruptive-aggressive boys considered to be	
Study authors	Kazdin et al., 1989	Lochman & Wells, 2002	Forgatch, Patterson, DeGarmo & Beldavs, 2009	Wells & Egan, 1988	Nixon, Sweeney, Erickson & Touyz, 2003	Sanders, Markie-Dadds, Tully & Bor, 2000	Sexton & Turner, 2010	Santisteban et al., 2003	Jones et al., 2007		
Intervention	Problem-Solving Skills Training (PSST)	Coping Power Program (CPP)	Parent Management Training (PMT)	Helping the Non- Compliant Child Program (NCCP)	Parent-Child Interaction Therapy (PCIT)	Triple P -Positive Parenting Program	Functional Family Therapy (FFT)	Brief Strategic Family Therapy (BSFT)	Incredible Years (IY)		
Type	Child- focused programs		Parents- focused programs				Family- focused programs		Multimodal and multi-compo- nent programs		

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Follow-up Outcome measures and main findings time	graduation and generally fewer had a criminal record compared with those allocated to the control group	nificant reduction in rearrest and 18-months improvement in 4 areas of functioning	der girls exhibited less delinquency 2-years over time relative to younger girls in both conditions
Outcome measure	graduation and generally fewe criminal record compared with allocated to the control group	Significant reduction in rearrest and improvement in 4 areas of functi	Olo
Age and gender		Juveniles aged 13- 15 years	103 13-17 years old girls
Design and sample	at risk of later criminality and low school achievement ( $n = 250$ ), identified from a community sample ( $n = 895$ ), and ran-	domly allocated 93 youth with conduct problems ran- domly assigned	Girls with serious and chronic delinquency
Study authors	Boisjoli, Vitaro, Lacourse, Barker & Tremblay, 2007	Timmons-Mitchell, Bender, Kishna & Mitchell 2006	Chamberlain, Leve & DeGarmo, 2007
Intervention	Montreal Longitudinal Experimental Study (MLES)	Multi-systemic Therapy (MST)	Multidimensional Treatment Foster Care (MTFC)
Type			

accepted (Kazdin & Weisz, 2003). In reality, the first approach adopted by Kazdin focused on the parents, not on the child. However, as it proved extremely difficult to involve the parents, owing to such obstacles as drug addiction, imprisonment, mental retardation or simple refusal, Kazdin was prompted to work out a program that could be implemented directly with the child.

The core program of Problem-Solving Skills Training consists of 12 weekly sessions of 30-50 min and utilizes cognitive and behavioral methods aimed at teaching the children new problem-solving techniques and improving their social skills. The advocates of this method claim that children suffering from disruptive disorder have cognitive deficits that lead them to interpret their surrounding social setting erroneously, to perceive the behavior of others as hostile and therefore to react aggressively. The program, which can be applied either in the clinic or at home, involves working individually with the child, with the therapist encouraging the child to adopt a progressively more positive approach to interpersonal relationships. This goal is achieved through various strategies, such as role-playing, reinforcement schedules, feedback, etc. The child is then helped to apply problemsolving skills in everyday life, in a variety of situations and contexts.

In the last 30 years, PSST has been implemented on thousands of children and has been amply evaluated (Weisz & Kazdin, 2010). The evidence indicates that it reduces the child's aggressiveness both at home and at school, reduces the number of deviant behaviors and increases pro-social behaviors (Kazdin, Bass, Siegel, & Thomas, 1989). Moreover, research has demonstrated that the addition of a real-life practice (Kazdin et al., 1989) and/or of a parent training component (Kazdin, Siegel, & Bass, 1992) may have a greater impact on outcomes.

The Anger Coping Program is a structured 18-session cognitive-behavioral group intervention that has been refined over a period of

20 years from an earlier 12-session Anger Control Program by Larson and Lochman, (2002). This program has been used in school settings for children in Grades 4-6 with disruptive behavior disorders. Group sessions typically last 45-60 min and are moderately structured, with specific objectives and exercises for each session. The goals are to help children to cope with anger after provocation or frustration and to learn possible strategies for solving the problem or conflict they are experiencing (Lochman & Lenhart, 1993). Outcome research indicates that program participants display less disruptive-aggressive behavior, more time on-task in the classroom, lower levels of parent-rated aggression, higher self-esteem or perceived social competence, and a trend toward a reduction in teacher-rated aggression (Lochman, Curry, Dane, Ellis, 2001).

A further evolution of the Anger Coping Program is the Coping Power Program, in which Lochman and Wells added a parent component designed to be integrated with the child component (Lochman & Wells, 2002). This program is intended for boys and girls, approximately 9-11 years of age (4th to 6th grade) who have been screened for disruptive and aggressive behavior and comprises 33 group sessions each lasting 60-90 min, with periodic individual meetings. Sessions include imagined scenarios, therapist modeling, roleplay with corrective feedback, and assignments to practice outside sessions. Outcome analyses in randomized controlled intervention studies indicate that the Coping Power Program significantly reduces risks of selfreported delinquency, parent-reported aggression and teacher-reported behavioral problems at 1-year follow-up (Lochman et al., 2009).

#### Parents-focused programs

In the light of the research suggesting that child conduct problems develop as a result of maladaptive parent—child interactions, parenting interventions have been the most thoroughly studied treatment approaches for children who enact disruptive behaviors. The main goals of these interventions are to improve parents' behavior management skills and the quality of the parent–child relationship. There are two main types of program: behavioral, focused on helping parents learn skills needed to address the causes of problem behaviors, and relationship, aimed at helping parents understand both their own and their child's emotions and behavior and at improving their communication with the child. However, most parenting programs combine elements of both (Gould & Richardson, 2006).

A well-known clinical intervention model designed to enhance effective parenting is the Parent Management Training-Oregon model (PMT-O) program. Developed at the end of the 1960s by the Oregon Social Learning Group, it is based on the 'Living with children' theory of Patterson and Guillion (1968). According to the authors (Patterson, Reid, Jones, & Conger, 1975), the aggressiveness and behavioral problems of children are inadvertently sustained by inadequate behaviors on the part of parents; by this token, inconsistent discipline, harsh and inappropriate punishments, and oppressive and inefficacious demands end up exacerbating, rather than reducing, the antisocial behavior of children.

The objective of the program, which is carried out in about 20 sessions, is to teach parents to avoid coercive practices and to improve their parenting skills. Thus, parents are taught to adopt more consistent behaviors, to utilize a rational system of rewards and minor punishments, to draw up clear codes of behavior that their children must respect, to devote more attention to their children and to help them to solve the problems of everyday life. The therapist works directly with the parents, generally at home, and only marginally interacts with the child. The parents are prompted to identify and define their child's behavior in a new way, to analyze in detail the problems raised by the child, and to learn how to react constructively so as to reinforce desirable behavior and progressively reduce undesirable behavior, the final goal being to get the child to learn specific educational skills.

PMT has been widely implemented for decades in many parts of the world and is utilized both as a single instrument of intervencombination with and in components (child, school, etc.) in a multimodal setting. The program has been evaluated in various randomized controlled trials involving children aged 4-12 years and has proved superior to alternative treatments in reducing disruptive behaviors (Forgatch, Patterson. DeGarmo. & Beldays. 2009: Hagen, Ogden. & Biornebekk, 2011: Hautmann 2009; al., Patterson, Chamberlain, & Reid, 1982). Several metaanalyses have confirmed this evidence and have demonstrated that this intervention is generally cost-effective (Dretzke et al., 2005; McCart, Priester, Davies, & Azen, 2006). Moreover, research shows that treatment effects may be generalized across settings, may be maintained for up to 2 years post-treatment, may benefit other children in the same family and also may extend to other deviant behaviors beyond those emphasized in treatment (Kiøbli, Hukkelberg, Ogden & et al., 2013).

The Helping the Non-Compliant Child Program (NCCP) and Parent-Child Interaction Therapy (PCIT) are two further examples of well-validated individual parent-training interventions for child conduct problems. The NCCP, developed by Forehand and McMahon (Forehand & McMahon, 1981), is a parenttraining program for preschool and early school-age children (ages 3-8) with noncompliant behavior, and is aimed at creating a controlled environment in which parents can learn new 'adaptive' ways to interact with their children. Parents and children participate in 60-90-min sessions once or twice a week, with an average total of 8-10 sessions; sessions are typically conducted with individual families rather than in groups. Parents are instructed in skills aimed at interrupting the

coercive cycle of parent-child interaction and at establishing positive, prosocial interaction patterns. They also learn a planned ignoring procedure for reducing undesirable behaviors on the part of the child (McMahon & Forehand, 2003).

The NCCP has been extensively researched and has proved superior to systemic family therapy in reducing child noncompliance in the clinic and at home (Wells & Egan, 1988). Moreover, it has shown many positive outcomes in both children and parents, with a maintenance effect ranging from 6 months to more than 14 years after treatment termination (McMahon & Forehand, 2003).

PCIT is a dyadic (parent-child) treatment program for children from 2 to 7 years of age with severe behavioral disorders. Originally developed by Sheila Eyberg, it targets change in parent-child interaction patterns through the use of play therapy (Eyberg & Calzada, 1998). This program is typically implemented in a community outpatient clinic and uses a twostage approach aimed at relationship enhancement and child behavior management. Families meet for an average of 12 to 16 weekly 1-hour sessions, during which parents learn to build a supportive parent-child bond through play, to set realistic expectations, to improve consistency and to reduce the reinforcement of negative behavior (Eyberg, Boggs, & Algina, 1995).

PCIT has proved superior to waitlist control conditions in reducing disruptive behavior in young children (Nixon, Sweeney, Erickson, & Touyz, 2003; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998) and has demonstrated long-term maintenance of treatment gains of up to 6 years post-treatment (Hood & Eyberg, 2003). In a recent meta-analysis, the ability of PCIT to produce significant changes in negative child behavior was confirmed (Thomas & Zimmer-Gembeck, 2007).

The Triple P Positive Parenting Program is a multilevel parenting program designed to prevent and treat severe behavioral, emotional and developmental problems in children aged 0 to 16 years through enhancing the knowledge, skills and confidence of parents. Triple P incorporates five levels of interventions in a tiered continuum of increasing intensity. The rationale for this stepped-care strategy is that there are different levels of dysfunction and behavioral disturbance in children, and that parents may have different needs and desires regarding the type, intensity and mode of assistance they require (Sanders, Markie-Dadds, & Turner, 1999). Level 1 is a mediabased information strategy designed to increase community awareness of parenting resources, encourage parents to participate in programs, and communicate solutions to common behavioral and developmental concerns. Level 2 provides specific advice on how to solve common child development issues and minor child behavior problems. It includes parenting 'tip sheets' and videotapes demonstrating specific parenting strategies. Level 3 involves active skills training that combines advice with rehearsal and self-evaluation in order to teach parents how to manage these behaviors. Level 4 is designed to teach positive parenting skills and their application to a range of target behaviors, settings and children. Level 4 is delivered in 10 individual or 8 group sessions, totaling about 10 hours. Level 5 is an enhanced behavioral strategy for families in which parenting difficulties are complicated by other sources of family distress. Variations of some Triple P levels are available for parents of young children with developmental disabilities (Stepping Stones Triple P) and for parents who have abused (Pathways Triple P) (Sanders, 2012).

Triple P has been used in many diverse cultural contexts, and the multilevel nature of the program enables various combinations of the levels and modalities within levels, tailored on local priorities, staffing and budget constraints. The program has a strong research base, which has revealed the effectiveness of various levels of Triple P for children with conduct problems from infancy to 16 years of age. In particular, a recent comprehensive

meta-analysis confirmed the efficacy of Triple-P in improving parenting skills, child problem behavior and parental well-being. Moreover, the fact that Triple P comprises a diverse set of options for families from different social and cultural backgrounds, as well as for varying degrees of problems, seems to be evidence of the program's ability to impact positively on parent—child interactions (Nowak & Heinrichs, 2008).

## Family-focused programs

For what concerns intervention on the family, family therapy researchers have conceptualized child conduct problems not as the result of inept parenting practices or cognitive deficits in the child but, rather, as the result of maladaptive interactions and dynamics in the family as a whole (Nock, 2003).

Various approaches to family therapy have been developed and, among these, the Functional Family Therapy (FFT) program should be mentioned. Based on a systemic approach, this program was worked out more than 30 years ago by James Alexander and Bruce Parsons (Alexander & Parsons, 1973) and is widely used for the treatment of minors aged 11-18 years who display aggressive behavior or have problems of substance abuse. The idea underlying the program is that children's behavior problems are not due to cognitive deficits or to parental incapacity; rather, they are the expression of a malfunction of the whole family system, within which the child's behavioral disorder exerts a function (e.g. reducing conflict between the parents). Only by improving the structures of communication and interaction among all members of the familv, therefore, will it be possible to modify the child's behavior.

The program generally consists of 8–12 one-hour sessions over a period of about three months. There are different phases to treatment: initially, there is a period of engagement and motivation, during which the therapist applies cognitive techniques in order to replace negative attitudes (lack of motivation, mistrust,

etc) with positive ones and tries to gain acceptance, to acquire credibility and to initiate a therapeutic alliance with all of the family members. In the second phase (behavioral change), interactions among the various family members are assessed and oriented towards a better functioning of the family system. The therapist tries to make all members of the family understand what each expects from the others and to clarify the relationships among the various members. Changes in family interactions are induced by facilitating the identification problems improving of and communication (learning to listen, to use direct and clear messages, etc.) and developing the ability to solve problems. In general, the therapist tries to restructure family relationships through various techniques (such as cognitive reframing and skills training, for example) in order to modify behaviors. Subsequently, in the phase of generalization, this modification is reinforced and projected outside the immediate family circle (e.g. in the school or iudicial spheres), and the family prompted to become independent of the ther-(Alexander, apist Pugh. Parsons. Sexton, 2000).

The effectiveness of functional family therapy has been researched for a long time, and evidence gleaned over follow-up periods of 1, 2, 3, and 5 years seems to support its superiority over control conditions and alternative treatment conditions in dealing with both status offenders and more serious juvenile offenders (Henggeler & Sheidow, 2012).

An emerging model for treating children with conduct problems is brief strategic family therapy (BSFT), a short-term family-treatment model developed over nearly 40 years of research at the University of Miami's Center for Family Studies for children and adolescents aged 6 to 18 years. Briefly, BSFT is based on structural and strategic family theories, and uses family therapy techniques to modify the interactions within the family system that are maintaining the youth's problem behavior. BSFT is delivered through weekly

sessions in a clinic or the family home. Treatment, which typically lasts 4 months and comprises 8–24 sessions according to the family's needs, focuses on three central constructs (system, structure/patterns of interaction, and strategy) involving three components: joining, diagnosis and restructuring (Szapocznik, Hervis, & Schwartz, 2003). The treatment developers have conducted several studies, which have demonstrated significant positive effects of BSFT in reducing anger and bullying behaviors among youths (Coatsworth, Santisteban, McBride, & Szapocznik, 2001).

# Multimodal and multi-component programs

The combination of various treatment modalities involving different levels of intervention at the same time (individual, family, school, etc) led to the creation of multi-component or multimodal treatment approaches, which some regard as the most efficacious types of intervention (Burke, Loeber, & Birmaher, 2002). These approaches, which are more intensive and more complex than those that focus exclusively on the child or on the family, are not always limited to combining two or more types of treatment or to adding a standard component to enhance an existing treatment package; indeed, they often bring together those features of the various programs that are most suited to each individual case, either by addressing multiple risk factors in a comprehensive program or by focusing on the surrounding environment, in order to change the child's behavior.

Some examples of this kind of intervention are: the Incredible Years (IY) Parents', Teachers' and Children's Training Series program, which was initially developed by Carolyn Webster-Stratton for children 3–8 years of age with early-onset conduct problems (Webster-Stratton, 1992); the Montreal Longitudinal Experimental Study (MLES), drawn up by Richard Tremblay and designed to treat aggressive children (McCord, 1992); the Multi-systemic Therapy (MST) program,

proposed by Henggeler for antisocial preadolescents and adolescents (Henggeler, Rodick, Borduin, Hanson, Watson & Urey, 1986), and the multidimensional treatment foster care (MTFC) program, developed by Chamberlain for youths who display chronic disruptive behavior (Chamberlain, 2003).

The IY series is broken down into three areas: a child-based program, a parent-based program and a teacher-based program. The general aim of the intervention is to reduce children's aggressiveness by teaching parents and teachers how best to deal with disruptive behavior and to facilitate prosocial behavior.

Parents' and children's sessions are held weekly in small groups. Parents watch videotapes that depict models of parents interacting with their children in various situations. They then discuss the contents with two group leaders and try out new techniques of intervention with their children through role play. In the children's group sessions (2 hours per week for about 6 months), the therapist also discusses a few videotapes, with a view to developing better social skills, fostering the ability to control impulses and emotions and improving the children's problem-solving skills. This program works on empathy, anger control, friendly relationships, communication, and relationships with the school and teachers. The teachers' program consists of a four-day workshop, which focuses on learning the most effective classroom management strategies for coping with disruptive behavior and promoting positive relationships among pupils.

The basic program may be supplemented by further treatment modules, such as the ADVANCE program, which focuses on interpersonal issues such as communication and problem-solving (Webster-Stratton, 1994), and the School Readiness Series, which tackles school issues (Webster-Stratton, Reid, & Stoolmiller, 2008). Different combinations of the IY components are utilized, depending on the child population targeted (Webster-Stratton, 2008). The Incredible Years program,

which has been implemented in the United States, Canada, Norway, Denmark, Great Britain and New Zealand, is one of the most widely used and amply tested intervention programs for children with disruptive behaviors (Webster-Stratton, Rinaldi, & Reid, 2010).

Three components were also used in the Montreal Longitudinal Experimental Study (Tremblay, Vitaro, Bertrand, et al., 1992). The first consisted of social skills training and aimed at promoting changes in behavior towards peers by fostering greater social acceptance of antisocial peers. Training was offered at school in small groups of 4-7 children, with a ratio of three pro-social children from the school to one disruptive child in each group. The second focus was that of training parents in effective child-rearing, based on the Oregon Social Learning Center Model (Patterson et al., 1975). The third domain, which served as a complement to parent training, was the provision of information and support for teachers involved with at-risk pupils.

The parent management skills training component was intended to improve parents' disciplinary practices and to reduce their supervision deficits, whereas the social and social-cognitive skills training component, in which the children interacted with pro-social peers in small groups, was intended to reduce children's aggressive and hyperactive behaviors by teaching them self-control strategies and alternative behaviors to aggression. The intervention program lasted 2 school years; children were 7 years old when the intervention started and 9 years old when it finished.

The long-term efficacy of the program was assessed when the subjects were 24 years old; it emerged that significantly more individuals in the intervention group had completed high school and graduated, and generally fewer had a criminal record in comparison with those allocated to the control group (Boisjoli, Vitaro, Lacourse, Barker, & Tremblay, 2007).

Multi-systemic therapy (MST), which was designed by Henggeler at the end of the 1970s, is one of the most intensive

intervention programs and has chiefly been used to treat antisocial adolescents and preadolescents, even as an alternative to the traditional judicial pathway (Henggeler, Melton, & Smith, 1992). This program was based on the conviction that antisocial behavior is underpinned by multiple risk factors at the individual, family, school and community levels, and that only by acting simultaneously and intensively on all of these factors is it possible to achieve results.

This family-focused and community-based treatment program is implemented by a team of 3-4 therapists, who have a small caseload (5 families for each therapist). Therapists are available 24 hours a day, 7 days a week, and provide a service for 2-15 hours a week; moreover, they receive intensive training and continuous supervision. The program lasts 4-6 months and is carried out at the youths' homes and in other places frequented by them. The therapists' aims are to improve the child-rearing capacity of parents and to act on teachers, educators, community leaders and influential persons in general, with a view to transforming the social ecology of the minor in such a way as to create an environment that is more favorable to positive adaptation and less conducive to antisocial behavior.

The intervention targets young people, family relationships, peer relationships, the school and other social systems. According to Henggeler, MST must follow a series of principles: precise identification of the most appropriate treatment process for each specific case; appreciation of the youth's positive features; creation of a sense of responsibility on the part of family members; a focus on the present, in order to solve current problems rather than dwelling on the past; point-by-point consideration of the appropriateness of the interventions in relation to the youth's age and developmental stage; timely, continuous effort to bring about change, accompanied by frequent checks and responses; and a constant commitment to evaluating the functioning of the program, including consideration of the

effects that will ensue once the intervention has been concluded (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997).

More than 450 MST programs are currently utilized in 11 countries; each year, more than 15,000 youths with antisocial behavior are treated (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009; Ogden & Halliday-Boykins, 2004; Sundell et al., 2008). Many published studies have asserted the efficacy of the MST programs in reducing antisocial behavior and the probability of being arrested, even in the long term (Henggeler et al., 1999; Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006).

Nevertheless, these results have been called into question. Indeed, according to a Cochrane review in 2005 (Littell, Popa, & Forsythe et al., 2006), there are no significant differences, in terms of restrictive out-of-home placements and arrests or convictions, between MST and usual services. Pooled results that include studies with data of varying quality tend to favor MST, but these relative effects are not significantly different from zero. The study sample size is small, and effects are not consistent across studies; hence, it is not clear whether MST has clinically significant advantages over other services.

Finally, we should mention a type of program that is applied in particular circumstances, when parents categorically refuse any involvement or indulge in abusive behaviors. In these situations, the child may be removed from the home environment, temporarily if possible. At one time, antisocial youths with parents of this kind (and also from other types of problem families) were placed in institutions or reformatories. Several studies have shown, however, that putting problem youths together, even in therapeutic or educational facilities, actually worsens the situation, in that the influence of deviant peers outweighs that of educators and therapists (Dishion, McCord, & Poulin, 1999).

For youths with conduct disorders who cannot be treated in their own family setting,

programs that make use of foster families have therefore been designed. An example of these is Multidimensional Treatment Foster Care (MTFC). Developed at the beginning of the 1980s by Patricia Chamberlain and coll. at the Oregon Social Learning Center, this program targeted violent delinquent youths who needed treatment outside their family environment (Chamberlain, 1994). Thereafter, a program was drawn up for aggressive children of preschool age (3–6 years) as an alternative to residential therapy (Chamberlain & Reid, 1998). The cases dealt with are often the result of referral by child welfare services or the juvenile justice system.

As with MST and FFT, many of the techniques used in MTFC are derived from behavioral and cognitive-behavioral approaches, implemented within a framework that highlights the critical role of foster parent supervision. In particular, therapists provide intensive support for the individual, the biological family (to which the minor will return if possible) and the foster family through daily contact, in order to monitor the evolution of the situation and to solve any problems that arise; they also act in the school and community settings. Founded on Social Learning Theory, the MTFC program helps parents, teachers and educators to acquire the skills needed in order to cope with the youth's problems and behaviors by teaching them to set clear limits and rules and to support and encourage the youth's progress by establishing close supervision. Therapists also strive to promote contact with pro-social peers and to discourage relationships with deviant youths.

The program is preceded by careful selection and training of the foster parents, who are the most important component of the therapeutic plan. Only one child or youth is placed with a foster family at a time. Throughout the program, the foster parents maintain a close relationship with the therapists through daily telephone calls, home visits and weekly meetings. During the daily telephone calls, the foster parents provide information on about 40

behaviors through the Parent Daily Report; this enables the supervisor to evaluate the progress of the treatment and to make any necessary adjustments.

The staff members who run the program have specific roles: the Program Supervisor. who is responsible for organizing all aspects of the treatment; the Foster Parents; the Consultant/ Recruiter/Trainer, who constitutes the most direct means of support for foster parents; Skills Trainers/Playgroup Staff Members, who teach pro-social behavior and problem-solving skills to the child through intensive one-on-one interaction and skill practice in the community; the Family Therapist, who teaches the birth parents and foster parents how to effectively supervise, discipline and encourage the child; the PDR Caller, who contacts foster families each day by telephone for the Parent Daily Report (PDR); and the Consulting Psychiatrist, if psychiatric consultation is required.

From all of the above, it is clear that MTFC is a highly intensive program that requires very complex organization and a multiplicity of therapeutic and organizational skills. The final objective is to modify the behavior of these children or adolescents and to facilitate their return to the family of origin or, in the exceptional cases in which this is not possible, their placement with adoptive families.

Some studies seem to have demonstrated the efficacy of these programs in improving the behavior of the subjects treated and in reducing their aggressiveness (Chamberlain, Leve, & DeGarmo, 2007; Eddy, Whaley, & Chamberlain, 2004; Westermark, Hansson, & Olsson, 2011). This seems to be mainly due to an improvement in the family's ability to manage the behavior of these subjects and to the fact that they are kept away from deviant peers (Eddy & Chamberlain, 2000).

# Critical considerations and best-practice recommendations

This analysis reveals that the diagnostic category 'conduct disorder' is almost never used specifically by the operators who have designed and implemented psychosocial interventions aimed at treating children and adolescents who display antisocial, defiant or aggressive behaviors. Indeed, while conduct disorders are cited in almost all of the programs examined, in reality the inclusion criteria cover a range of behavioral problems that do not fully match the diagnostic categories used in medical nosography. Moreover, evaluation of the effects of such interventions considers different types of result, such as increased prosocial behavior and reduced antisocial behavior on the part of the minor, without specifically taking into account the diagnosis of conduct disorder.

In addition, it should be pointed out that the conceptual category 'conduct disorder' includes symptoms of behaviors that differ markedly from one another and that may require specific interventions. In this regard, it should be borne in mind, for example, that aggressive behaviors and theft constitute very different problems, which evolve differently over time and are underpinned by different risk factors. Specifically, the developmental trajectories of physical violence and theft during adolescence and early adulthood are different and differently related to neurocognitive functioning. Indeed, an important longitudinal study has demonstrated that the majority of subjects show an increased frequency of theft from adolescence to adulthood, whereas only a minority evince an increasing frequency of physical violence. In addition, the neurocognitive mechanisms seem to be different, in that executive function and verbal IQ performance have been negatively related to a high frequency of physical violence but positively related to a high frequency of theft (Barker et al., 2007).

Despite these conceptual limits, our literature analysis indicates that psychosocial interventions for minors with conduct problems are widely studied and can be considered a useful part of treatment planning for youths who display problems of adaptation.

By contrast, not least in the light of the difficulties of defining conduct disorders conceptually, the role of medical treatments is debated. Although the literature supporting the management psychopharmacological aggressive and disruptive behavior in youth is growing, it still seems to be insufficient to determine the comparative risks and benefits of using drugs in pediatric populations, especially in the long term. A specific in-depth analysis of this treatment modality has been provided by the American Academy of Child and Adolescent Psychiatry and other groups, which have published practice parameters on the medical treatment of conduct disorders in youth (Gleason et al., 2007). However, the imbalance between the relatively strong evidence for psychotherapeutic interventions and the weak evidence for medication use justifies the view that psychotherapy is the first-line treatment for maladaptive aggression and conduct problems (Scotto Rosato et al., 2012).

A further cornerstone in the treatment of youths with conduct problems is the concept that it is important to intervene early in the developmental trajectory in order to prevent subsequent serious antisocial behaviors and other mental health problems in adulthood (McNeil, Capage, Bahl, & Blanc, 1999).

Despite extensive research into treatment, no single program has yet emerged as the best. However, on the basis of the bulk of evidence available, it emerges that the choice of intervention should be age-specific and should take into account developmental differences in cognitive, behavioral, affective and communicative abilities.

On the whole, according to the studies considered, clinical evidence suggests that, in dealing with younger children (<11 years old) with conduct problems (or with symptoms suggestive of high risk), parent-focused interventions seem to be more effective. By contrast, for older children (>11 years old), child-focused interventions appear to be more effective. For children in foster care, there is some evidence that foster carer-focused

interventions are also effective. Interventions conducted separately on both the parents and the child are not clearly more effective than parent-focused interventions alone. Moreover, interventions delivered in school settings seems to be more effective than those delivered in the clinical setting.

According to the literature reviewed, parent training should be considered the first-line approach to dealing with young children, whereas cognitive-behavioral approaches have a greater effect on older youths, who probably have a greater capacity to benefit from this kind of treatment. In addition, family interventions addressing parent-child relationships and communication have shown greater efficacy in older youths, whereas multi-component and multimodal treatment approaches have shown moderate effects in both childhood and adolescence. For children with CU traits, treatments that intervene early in the parent-child relationship to teach parents ways of fostering empathic concern in their young child, or those that help the child develop cognitive perspective-taking skills, have shown evidence of effectiveness (Hawes & Dadds, 2005; Kolko & Pardini, 2010).

Finally, family engagement in treatment significantly influences outcomes. More positive child—therapist and parent—therapist alliances also predict greater improvement, fewer perceived barriers to participation in treatment and greater treatment acceptability (Scotto Rosato et al., 2012).

One limitation that emerges from the scientific literature is the lack of long-term assessments. Consequently, we do not know whether the positive effects recorded at the end of the treatment, or after a relatively short period, last throughout adolescence and into adulthood, nor whether any undesired effects arise. In this regard, we should remember the results obtained from one of the most interesting and prolonged studies carried out in criminology. This study analyzed the long-term efficacy of a delinquency-prevention psychosocial program carried out in Cambridge-

Somerville. As reported by McCord (1978), some decades after intervention, the results were surprisingly negative; in spite of all the efforts made, all the support for the children and their families, and the intervention of counselors, the subjects treated suffered a higher percentage of mental illness, early death (before the age of 35 years), alcoholism, recidivism, failure at work, etc., during the course of their lives than did control subjects. While it would be fairly easy to explain the lack of success of preventive intervention if the results showed no difference between the treatment group and the control group, it is much more difficult to explain the worse outcome of the treated subjects. The lack of success might easily be attributed to the inefficacy of the program, insufficient support for minors and their families, or too little contact between operators and subjects. Such explanations, however, cannot justify the worse results obtained by treated subjects; moreover, they are at variance with McCord's (1992) finding that the worst results were seen in those very cases in which the relationships between counselors and minors were most intense and long-standing.

An interpretation of these negative results was proposed by Dishion et al. (1999). Within the framework of the Cambridge-Somerville program, 125 youths were sent to summer camps once or more often. Examination of the long-term results revealed that those who had attended summer camps more than once were ten times more likely to have had a negative outcome (early death, mental illness or involvement in crime) than did control subjects. The authors ascertained that there was no significant initial difference between those who attended the camps and those who did not; they concluded therefore that failure could not have been due to a selection bias. In the light of these data, Dishion et al. (1999) reached the conclusion that placing at-risk minors in a group of deviant peers can produce highly negative effects on youths with behavior problems, and that this was why summer camp attendance had a deleterious effect. The Cambridge-Somerville findings were in agreement with other results, which demonstrated that placing problem youths in a group treatment program had produced long-term negative effects. Indeed, in terms of delinquency, these youths had a worse outcome than did control subjects who had not undergone any treatment. This was attributed to the fact that the negative influence of deviant peers outweighed the positive influence of the therapists. These results highlight the need to carry out long-term assessments in order to ascertain whether the results of intervention are stable and whether any side-effects emerge over the years.

A second problem is that, despite the rapid growth of empirically supported psychosocial interventions for children and adolescents, the variables that predict, influence or account for good or poor responses to treatments of conduct problems are still poorly understood. Much more research is needed in order to understand the circumstances under which treatments work and the ways in which treatments produce outcomes. Moreover, further efforts aimed at studying treatment replications in new populations or by community-based providers are needed.

Finally, an observation regarding the conceptual context in which the most common psychosocial programs set the behavioral problems of children and adolescents. Through the concept of conduct disorders, a process is often unleashed whereby problems that have a major environmental component become 'medicalized'. Consequently, in many cases treatment focuses mainly on the child or, at best, on the family and school context, without specifically taking into account the social environment as a whole. This approach not only produces intervention that has a scant or temporary effect; it also limits social policy to acting on the effects of problem situations, rather than trying to eliminate their causes. In conclusion, further studies are necessary to evaluate in depth the effectiveness of psychosocial treatments for iuvenile conduct problems.

#### Ethical standards

#### Declaration of conflicts of interest

Gabriele Rocca has declared no conflicts of interest.

Ignazio Grattagliano has declared no conflicts of interest.

Uberto Gatti has declared no conflicts of interest.

### Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors. Part of this article is published in a chapter of a French book "Psychiatrie de l'enfant et de l'adolescent Une approche basée sur les preuves" (by Holzer, L.; De Boeck-Solal: 2014)."

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