

Psychosocial Interventions in the Treatment of Child and Adolescent Conduct Disorder

Çocuk ve Ergen Davranım Bozukluğu Tedavisinde Psikososyal Müdahaleler

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Abstract

Since conduct disorder is a mental disturbance deteriorating not only children or adolescents' functioning but both their close environment and even the whole society they live in, it is crucially important to be treated with effective interventions. There is mainly child, family and school-oriented interventions for childhood-onset conduct disorder and treatments of adolescent-onset conduct disorder include community and institutional practices in addition to adolescent, family and school-oriented interventions. Approaches to childhood-onset conduct disorder based on social learning theory, and interventions of adolescent-onset conduct disorder built on "needs, responsivity and risk principles" seem to be effective treatment modalities. Family-oriented approaches using concurrently either adolescent school-oriented interventions or society-oriented programs appear to be the most effective treatments for short-term and long-term outcomes. Adolescents with high risk and advanced age seem to have better progress with interventions whereas sexual offenders are less likely to benefit from treatment than the other conduct pathologies.

Keywords: Adolescent, conduct disorder, psychosocial interventions.

Öz

Davranım bozukluğu doğru yöntemlerle müdahaleler gerektiren, çocuk ya da ergenin sadece kendisini değil, yakın çevresini hatta yaşadığı toplumu olumsuz etkileyebilen bir ruhsal bozukluktur. Çocukluk-başlangıçlı davranım bozukluğunun tedavisinde çocuk, anne-baba ve okul eksenli uygulamalar yer alırken, ergenlik-başlangıçlı olanının tedavisinde bu yöntemlere ek olarak kısmi yatış programları, kurumsal uygulamalar ve diğer toplumsal unsurlar bulunur. Çocukluk-başlangıçlı davranım bozukluğunda sosyal öğrenme kuramını esas alan "aile odaklı" uygulamalar, ergenlik-başlangıçlı olanında ergene yönelik "ihtiyaçlar, duyarlılık ve risk ilkesi" esas alınarak uygulanan "ergen odaklı" müdahaleler etkili yöntemler olarak görülmektedir. Kısa ve uzun vadeli etkinlik açısından, ergen, okul ya da toplum odaklı müdahaleleri eş-zamanlı kullanan "aile odaklı" yaklaşımlar en etkin tedaviler olarak görülmektedir. Yüksek riskli ve yaşça ileri ergenler tedaviyle daha iyi ilerlemeler sağlarken, cinsel suçları bulunan ergenler diğerlerine göre tedavilerden daha az fayda görmekte-dirler.

Anahtar sözcükler: Ergen, davranım bozukluğu, psikososyal müdahaleler.

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CONDUCT DISORDER is a mental disturbance characterized with hostile and aggressive behavior towards humans and other living things, damaging attitude to the other humans' possessions, continuous violation of the society norms and the laws (APA 2013). According to the DSM-5, conduct disorder has two forms on the basis of age at onset. In childhood-onset conduct disorder, symptoms begin before age 10 and physical aggression and difficulties in peer relationships are predominant. In this form, other psychiatric conditions including attention deficit hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) are frequently accompanied with the disorder. In the adolescent-onset conduct disorder, conduct disturbances do not appear before the age of 10 and aggression or impaired peer interactions are found a relatively lesser extent (Odgers ve ark. 2007).

The prevalence of conduct disorder is 2-10% with the median frequency of 4% (APA 2013). While the childhood-onset CD is mostly seen boys, the gap between gender seems to be closed in adolescent-onset conduct disorder (Tracy et al. 2009). Biological and psychosocial factors including marital conflict (Güven and Erden 2014), hard disciplined attitudes (Taner-Derman and Basal 2013), mothers' reactions of emotion socialization (Güven 2013) are mainly responsible for developing the childhood-onset conduct disorder and socioeconomic or ethnical issues are less important factors in its etiology (Children's Mental Health Ontario, 2001). In the etiology of adolescent-onset conduct disorder, sociocultural factors like poverty and peer groups are more prominent, and adolescent's individual features and her/his environmental issues play crucial roles for developing the disorder. Individual risk factors could be listed as adolescent's automatic thoughts laden with "everyone looks at me, jokes about me, they will annoy me" (Atalan-Ergin and Kapci 2013), depressive mood, sense of alienated, perceived stress of an adolescent on a daily basis, thoughts related to dropping out of school, tendency of risk taking and causes of substance use. Environmental risk factors of the adolescent-onset conduct disorder involve role-models of the adolescent, accessibility to the substances or the gangs, features of the environment in which adolescent lives, peer pressure (Siyez and Aysan 2007) and parental depression (Silberg et al. 2015).

Early-onset conduct problems tend to be diminished and resolved within the later years. Factors affecting the good prognosis were reported as high intelligent quotient (IQ), high socioeconomic level, interventions for comorbid psychiatric disorders (Lahey et al. 2000). On the other hand, children's behavior problems are negatively affected mostly by parental inconsistency, poor parental supervision and physical punishment of the children (Pardini et al. 2007). The majority of the subjects having conduct problems in childhood tend to display much more anti-social traits in their adulthood (Moffitt 2006), and issues such as medication/substance use, criminal acts, unwanted pregnancy, quitting of school or job are seen in these persons 10 times more than that of normal population (Lee et al. 2012). As regards adolescent-onset conduct disorder, poor communication between early-adolescence age subjects and parents has been reported as a predictor of problematic behaviors at the 18-aged adolescents (Pardini and Lober 2008). The more deteriorated family functions including problem solving, communication, roles, affective responsiveness, the more conduct problems in 12-15 aged adolescents become (Savi 2008). For these reasons, conduct disorder needs to be treated with effective and appropriate interventions.

The treatment of the conduct disorder includes psychosocial interventions and pharmacological agents either alone or combined with each other (Fonagy et al. 2015). Medications were reported as not effective in the solving of conduct problems unless they are used for physical aggression or comorbid other psychiatric disorders (NICE 2013). Consequently, for an active, effective and sustainable treatment, the value of psychosocial interventions in the conduct disorder are mountainous. In this study, psychosocial programs for childhood- and adolescent-onset conduct disorder were reviewed of effect sizes of all evidence-based interventions and presented to obtain a recent approach to the disorder. All interventions were summarized in the Table 1 with two headlines of children- and adolescent-onset conduct disorder.

Table 1. The psychosocial interventions for childhood- and adolescent-onset conduct disorder

Childhood-onset conduct disorder	Adolescent-onset conduct disorder
1. Child-oriented	1. Adolescent-oriented (cognitive-behavioral) interventions
<ul style="list-style-type: none"> ○ Behavioral and cognitive interventions 	<ul style="list-style-type: none"> ○ Social and problem-solving skills training ○ Anger management ○ Training in moral reasoning ○ Multicomponent packages ○ Innovative approaches (Mindfulness-based interventions)
2. Family-based	2. Family-based interventions
<ul style="list-style-type: none"> ○ Relationship-oriented <ul style="list-style-type: none"> ◦ Parent-child interaction therapy ○ Behavioral-based <ul style="list-style-type: none"> ◦ Three-P ◦ Incredible years ◦ Stop now and plan! 	<ul style="list-style-type: none"> ○ Modification of the Oregon model ○ Therapeutic foster care ○ Functional family therapy approaches ○ Multisystemic therapy ○ Brief strategic family therapy ○ Multidimensional family therapy
3. School-based	3. School-based interventions
<ul style="list-style-type: none"> ○ Teacher-oriented programs ○ Specialist-oriented <ul style="list-style-type: none"> ◦ First step to success 	<ul style="list-style-type: none"> ○ Universal programs ○ Selected/indicated programs ○ Special schools or classes ○ Comprehensive-multimodal programs ○ Family check-up (FCU)
	4. Community- and Institution-level programs
	<ul style="list-style-type: none"> ○ Community-level implementation of programs ○ Residential programs <ul style="list-style-type: none"> ◦ Teaching family model ◦ Wilderness therapy programs ◦ Inpatient treatment
	5. Partial hospitalization programs
	6. Wraparound services

Psychosocial Interventions for Childhood-Onset Conduct Disorder

The psychosocial interventions for conduct disorder appearing before the age of 10 include three headlines as child-oriented, family-oriented and school-based treatments..

1. Child-oriented Interventions

Aim is to solve the disturbance located in impulsivity and anger control domains of children via behavioral interventions that focus to increase children's communication and problem solving skills (NICE 2013). Main hypothesis of behavioral programs is

that conduct problems are mainly stemming from children's incapacities of "social information processing (SIP)". Programs are applied by psychologists and counselors to 4-6 aged children within small groups or for older children, in classrooms as a part of curriculum. Making friends, effective communication skills, participating to group plays, learning school rules and its sanctions, defining emotions are mainly evaluated. No study found in Turkey relating this intervention.

2. Family-based Interventions (Parent Training)

This interventions target parent training, are applied by psychiatry nurses and have two types including interaction-oriented and behavioral-based parent training programs (NICE 2013).

a. Interaction-oriented Parental Education Programs

At the heart of this intervention there is family system theory. The aim is to understand the emotions and thoughts of children that are underlying the problematic behavior and evaluate the response of parents towards their children's behavior. This approach is improved parents' coping style and in turn, children's problematic behaviors become less and less damaging. Interventions include communication skills (active listening, feedback, using "I" rather than "you"-language and conflict resolving) and how parents use these techniques is taught. One of these interventions, "Parent-child interaction therapy (PCIT)" is applied to 2-7 aged children's parents. Therapy applies in two phases; first phase includes unstructured play techniques and the quality of time shared parents and children is aimed to be increased. Second phase is more structured and involves instructions compatible with children's age and developmental status in playground. Instructions are applied by therapist behind the mirrored-room through headset microphone. Training starts firstly in playroom and then continue in children's home. A recent meta-analysis, including 23 studies with 1114 participants, showed that PCIT has resulted in a significant decrease in children's externalizing behavior problems (-0.87 , 95%CI = -1.17 to -0.58), an increase parents' and children's positive interactions (0.89 , 95%CI = 0.50 - 1.28) (Thomas et al. 2017).

b. Behavioral-based Education Programs

Hypothetical background of these programs are built on social learning theory pointing out that behaviors result in similar behaviors. The behavior pattern of parents affects their children's behavior as much as the children's behavior pattern affects their parents' behavior. With these programs, the problematic behavior patterns of the children are aimed to be decreased via intervening the behaviors of their parents which might increase the conduct problems in their children. Among these interventions, there are mainly "Positive Parenting Program: Triple-P", "Incredible years" and "Stop Now and Plan: SNAP" programs (UNODC, 2009). Targeted groups are 0-16 aged of children for "Triple-P", 2-9 aged of children for "Incredible years" and 6-11 aged of children for "SNAP". "Triple-P" is applied to parents, whereas "Incredible years" includes teacher-and children-training applications. "Triple-P" program has been reported as an effective intervention for decreasing children's emotional and behavioral problems and increasing their self-esteem, with a decrease in authoritarian and maladaptive parenting, parents' stress and depression levels, marital conflicts of the parents, resulting in an increase of positive parenting skills and interactions with their children (UNODC 2009). Effect sizes (ESs) of "Triple-P" and "Incredible years" were reported to be similar with each

other. There was found only a study related to Triple-P intervention for 7-12 aged children with ADHD (Ozturk 2013). In this study, 30% of disruptive conduct disorder was reported as comorbidity and after Triple-P program, children's emotional and behavioral problems were showed to be decreased. Beside this, there was no any study relating to behavioral-oriented family intervention for childhood-onset conduct disorder.

3. School-based Interventions

This interventions developed on the basis of social learning theory are applied by either teachers or non-teacher specialists (Fonagy et al. 2015).

a. Teacher-oriented Interventions

These programs aim to reduce children's aggressive behaviors towards their peers. In a study within the scope of the Chicago School Readiness Project, behavioral methods were taught to the teachers of 35 classes including 547 pre-school 5-year-olds children including the ways to cope with the stress and consult the children who have emotional and behavioral problems with children mental health specialist. Interventions were reported to be effective for decreasing external behavior problems with the effect size of $d=0.53-0.89$ (Raver et al. 2009).

b. Non-teacher Specialist-based Interventions

These programs are applied with clinicians or specialists in the school environment. Within the program, there are preventive strategies including guidance, warnings, clear and precise classroom rules, supporting of academic and social skills, effective rewarding and encouragement, motivating, building of positive relationships, stress management, managing of problematic behaviors, developing and structring of a behaviour plan, and co-operation with parents. "First step to success" is one of the school-based programs and applied to 5-6 aged of children displaying anti-social behaviors and their parents. It is based on the principle that positive behavior patterns are taught and rewarded as these behaviors become consistent and continuous. It consists of three phases; the first stage is the initiation of appropriate intervention in the presence of experts. In the second stage, practices are maintained by the teacher and parents. The final phase involves evaluating the results by the specialist weekly for six weeks (UNODC, 2009). Similar with this intervention, there was found only a descriptive study from Turkey. Unal (2006), studied with 22 primary-school-counsellors whom they served to 52 primary school children diagnosed with conduct disorder in the last one year. The counselors reported that the services they can provide directly to these children are individual interviewing, observation, monitoring and guidance services. School counselors are graduates of undergraduate programs in psychology or counseling and psychological counseling (PDR), whose working time is 1 to 22 years and they can not make direct business associations with the institution in which they are registered, that they only provide information and guidance services to their children, it is reported that only 1/3 of the children continue to a health institution.

Psychosocial Interventions for Adolescent-Onset Conduct Disorder

The interventions for conduct disorder that not appear before 10 are listed as the fol-

lowing;;

1. Adolescent-oriented (cognitive-behavioral) interventiond
2. Family-based interventions
3. School-based interventions
4. Community- and Institution-level programs
5. Partial hospitalization programs
6. Wraparound services

Effect Sizes of Psychosocial Interventions

The effectiveness of these programs has been tried to be explained by three basic principles (the needs-, the responsivity-, and the risk-principles) that were obtained from the studies examining the adolescents with anti-social behavior and conduct problems (Fonagy et al. 2015, Gendreau et al. 2006).

"The needs principle" is to be considered together with the risk and protective factors of criminal acts causes. Previously criminal attempts, anti-social behaviors, and peer relationships are the main factors that determine the tendency to commit crime of adolescent. Consequently, supporting the family relationships, family watching and supervision of adolescent, providing more interaction with role models, increasing self-control and problem solving skills of adolescent, treatment of addictions, rewarding of correct behaviors, regulation of living conditions in ways that reduce risk, and helping adolescent to recognize risky situations is aimed to be intervened (Fonagy et al. 2015).

"The responsivity principle" aims to ensure that the adolescent has maximum benefit from the intervention, taking into account the causes of the crime and the adolescent's cognitive capacity. Practices include the use of cognitive behavioral and social learning approaches and the meeting of adolescent-specific needs. In terms of effectiveness, it was reported that the greatest "effect size" was provided by cognitive behavioral methods based on social learning theory. It is likely to be successful when applied in sufficient time and intensity with a problem-focused approach based on active, inclusive, treatment of the issues leading to problematic behavior (Fonagy et al. 2015).

"The risk principle" is based on the results of the high-risk group of adolescents responding to treatment at the highest level in terms of committing-crime behavior. It has been shown that adolescents exhibiting criminal acts (except for sexual offenders) have the most response rate to the cognitive-behavioral approaches ($r = 0.35$) (Redondo et al. 2002). In a meta-analysis showed that the interventions applied on the basis of three "needs-, responsivity-, and risk" principles resulted in a-50% reduction of the criminal act in adolescents (Andrews ve Bonta, 2016), and these three principles-based interventions had a moderate effect size (mean $d=0.43$, $0.38-0.45$) on decreasing anti-social behavior in adolescents (Gendreau et al. 2006).

Comparison of Effect Sizes of Psychosocial Interventions

Provided evidence-based comparisons, family- and adolescent-oriented programs have "the best" or "good" effect sizes whereas the other interventions have "moderate" or "minimal" effectivities (American Academy of Pediatrics, 2010). In a meta-analysis, effect sizes (ESs, d) of four interventions were found as the following (NICE 2013);

1. Adolescent-oriented interventions: ESs, $d=0.20-0.40$; in the follow-up, $d=0.26-0.45$
2. Family-based interventions: ESs, $d=0.04-0.69$; in the follow-up, $d=0.16-0.28$
3. Multi-component family-based interventions (parents-, adolescent-, and school-involved): ESs, $d=0.20-0.52$; in the follow-up, $d=0.01-0.95$
4. Multi-modal (family- and community-based) interventions: ESs, $d=0.25-0.62$; in the follow-up, $d=0.41-0.58$

Family-based approaches using multiple modalities in this study were found to be the best treatments for short and long-term outcomes (NICE 2013).;

Eyberg et al. (2008) reported the results of a total of 28 studies carried out between 1996 and 2007. They revealed that the cognitive-behavioral therapy (CBT) and family therapy of children or adolescents with conduct disorder were more effective than that of either waiting list-group, the non-treated group, or the placebo-group. They also pointed out that younger children had more responsive to the family-interventions whereas adolescents showed more effective results with both adolescent- and family-programs. Multi-system therapy (including CBT plus family-interventions plus pharmacological agents) has been reported as the most effective intervention by Curtis et al. (2004). They analyzed 11 studies including 708 adolescents and their parents and found that 70% of adolescents (significantly higher than that of other adolescents who took other treatments) were treated effectively with multi-system treatment (CBT plus family-therapy plus drug) and the effects of this treatment continued for 4 years. Detering approaches have been found to be ineffective, and perhaps even more likely to increase existing behavioral problems (as iatrogenic). While adolescents with high-risk and older age can progress better with treatment, sexual offenders are less likely to benefit from treatments than the other adolescents (Fonagy et al. 2015)

Interventions for Adolescent Onset Conduct Disorder

1. Adolescence-Oriented (Cognitive Behavioral) Interventions

Studies have shown that some risk factors that lead to antisocial behavior can be addressed by individual therapy for antisocial attitudes, poor problem solving skills, inadequate anger management, and poor self-control (Schoenwald et al. 2011). The CBT assumes that the cognitive deficits and disorders that lead to behavioral disorders can be learned. It targets adolescent's thought process that lead to the continuation of antisocial behavior and sudden choices and works with adolescent for solutions. Most of the effective interventions are focused on anti-social attitudes and other variables, based on social learning theory. CBT approaches vary in their applications but most structured techniques are aimed at creating meta-cognitive skills. For example, issues such as how to consider a situation in all its aspects, how to evaluate whether the beliefs of the adolescent are appropriate and useful, and how to make choices on the basis of these factors are structured. This process includes topics such as cognitive skills training, anger control, complementary components of the social skills, moral development and prevention of recurrence (Fonagy et al. 2015). Sukhodolsky et al. (2016) pointed out that behavioral interventions are effective ($d = 0.33$) on anger and aggression behaviors in children and adolescents. Ozabacı (2011) reported in a meta-analysis of 6 studies pointing that efficacy of CBT in children and adolescents with criminal acts was

between 0.20 and 0.50. In another study, the dialectic-behavioral method was reported to be effective in adolescents in anger and impulse control (Jamilian et al. 2014). In a different meta-analytic study comparing behavioral and cognitive behavioral programs, cognitive behavioral programs were found to be more effective in reducing criminal recidivism (Pearson et al. 2002). However, it is not wrong to say that both applications are effective. Cognitive and behavioral practices were found to be more effective in reducing the crime rate than the control group (NICE 2013, Andrews and Bonta 2016). In another study, it was shown that different CBT techniques (reasoning and rehabilitation, expanded thought education, dialectical behavioral therapy) were significantly effective in the prevention of crime recidivism of juvenile youth than that of the control group (Armeliuss and Andreassen 2007). In a meta-analysis, behavioral parental training applied to the family was compared with adolescent-oriented CBT in adolescents exhibiting anti-social behavior patterns, and while parent education was effective in preschool and primary school children, CBT was more effective in the adolescents (McCart et al. 2006). Meta-analytical studies provide strong evidence that adolescent-focused BDT interventions are moderately effective. The effectiveness, however, falls in the later follow-ups and the superiority of behavioral parental training declines at older ages (Fonagy et al. 2015). In a study of which CBT technique was superior, programs including anger control and interpersonal problem solving methods were reported to be more effective than victim influence and moral reasoning (Lipsey et al. 2007, Landenberger and Lipsey 2005). Some of the adolescent-oriented interventions are the following;

Social and Problem-Solving Skills Training

In this cognitive skills training, it is aimed to gain perspectives on adolescents through problem solving, critical reasoning, causal thinking, goal setting, long-term planning, role-playing and real life practices. The applications are aimed at creating innovative approaches to cope with situations that lead to particularly anti-social behavior. Programs like social skills and problem-solving training are often individualized therapies (NICE 2013). In a recent meta-analysis study, training of social skills and problem-solving skills have been shown to improve not only the problems of adolescent behavior but also the social functioning and family interaction of the adolescent (Kazdin 2018). When taught skills were assessed, it was found that training for social skills and problem-solving skills showed moderate efficacy ($d = 0.21, 0.02-0.53$) in reducing anti-social behavior (Frick 2001) but it has been noted that there is a need for long-term efficacy studies (Sukhodolsky et al. 2016).

Anger Management

This training focuses on teaching the automatic thinking pattern in situations that lead to anger or violent reaction to adolescents and evaluating the validity of these 'hot' or 'triggered' thoughts. Adolescents are encouraged to consider non-violent explanations for the others' behaviors and to change those that are faulty with realistic alternatives. A significant number of techniques have been developed in the anger management. These include coping skills, emotional awareness and self-control, problem-solving, relaxation techniques, role-playing and modeling activities (Fonagy et al. 2015). It has been reported that mindfulness practices are effective in anger management training (Singh et al. 2007), and that the changes in aggressive symptoms (Lok et al. 2018) and behavioral problems reported by the adolescents are prominent ($d = 0.32$) (Candelaria et al. 2012).

Training in Moral Reasoning

It has been shown that moral judgments are immature in adolescents with conduct disorder and criminal behavior, and lay the groundwork for the development of many antisocial behaviors (Fonagy et al. 2015). Adolescent CBT programs are centered on individual responsibility for criminal acts. In addition, programs include ethical reasoning exercises, awareness training for empathy and victims. It is a structured program and handbook exercises are applied. Groups consist of 10-15 individuals. The therapy consists of 12-16 sessions, each of which lasts 1-2 hours and is administered in two sessions per week. In general, moral reasoning education and introspection techniques were found to be less effective ($r = 0.16$) than the other CBT techniques (Landenberger and Lipsey 2005, Lipsey and Cullen 2007). Meta-analysis studies provide strong evidence that ethical reasoning training is more effective in adult and older adolescents. Moreover, other approaches based on moral reasoning have shown that they did not improve adolescent behavior (Ferguson and Wormith 2013).

Multicomponent Packages

Most are CBT techniques and programs that contain parts from the applications described above. One of them is "Reasoning and rehabilitation; R & R) program, which generates exercises (critical thinking, social perspective acquisition) that are applied to organize impulsive, self-centered, irrational and non-flexible/rigid minds (Ross and Fabiano 1985). The "Thinking for a change" program includes approaches to understand and meet the feelings of oneself and others with problem-solving skills (Ross et al. 1988). In "The cognitive application" program, cognitive restructuring is aimed (Milkman and Wanberg 2007). Another program called "Aggression Change" combines social skills training, anger control and moral reasoning training (Goldstein et al. 1998) and is used for criminal offenders in reformatory centres and aims to develop skills of the adolescent in the community environment. The "Preparing the adolescent for another to help" program is a group-program combining with social skill training, anger management, moral reasoning training and problem solving skills. There is no evidence to confirm the efficacy of any multi-component CBT package for the reasons including the lack of systematic investigations, the extremely heterogeneous nature of the studies in terms of their intensity and application patterns, and the fact that some of them will be useful only in selected cases (Fonagy et al. 2015).

Innovative Approaches

There has been an increase in mindfulness-based interventions in the last 10 years (Singh et al., 2007). Leading approaches include awareness-based stress reduction, awareness-based cognitive therapy, dialectical behavioral therapy, acceptance and responsibility therapy, and mode-ineffective therapy. None of these approaches have been developed for different psychiatric pathologies that are not designed to prevent behavioral or crime prevention. There is limited but promising evidence of the effectiveness of these methods. Innovative approaches provide re-adaptation or complementary support to the traditional CBT and are well-received in the light of limited evidence.

2. Family-Based Interventions

Family-oriented practices are often suggested in the treatment of the adolescents with conduct disorder. This is because that some of the adolescents' parents' attitudes can raise the problems, provide better social interaction, and have similar biological mecha-

nisms. Family-supported therapies have been shown to be effective in adolescents with conduct disorder and criminal acts (Henggeler and Sheidow 2012). Woolfenden et al. (2002) reported a meta-analysis of 8 randomized controlled trials in a study of the effects of family-focused methods on behavioral problems and criminal acts in adolescents and showed that practices reduced criminal behavior. With regard to family-oriented practices, the following points are important; the families should be understood on a specific protocol, the intensity and duration of the programs should be regulated, the other associations should be made in many areas for the social consequences of the adolescent's anti-social behaviors (school, social services, adolescent law), situational and therapeutic-framed protocols should be organized against potential unexpected events, in unforeseen circumstances there should be balance between the participation and flexibility of the structured methods for the applicability of appropriate intervention, support for environmental regulation and continuity in therapy, the therapist should be supported in terms of environmental regulation and within the scope of applications, continuity and systematic and strong harmonization of the family must be ensured to basic therapeutic factors (Fonagy et al. 2015). Family-oriented practices include as the following;

a. Modification of the Oregon Model

The Oregon model in the family training is tailored to the treatment of adolescents with conduct disorder (Epstein et al. 2015). This adaptation involves identifying risky behaviors, developing family supervision, taking more radical punishments like restricting free time instead of a stopover procedure. Family members are asked to report their children's anti-social behavior to the "adolescent authorities" and defend their children in court as their advocates. Within the procedure, adolescents play an active role in structuring behavioral contracts. However, this intervention is limited in effectiveness and leads to extremely rapid improvements rather than major improvements (Epstein et al. 2015).

In one study, four groups including 1) Family-oriented Oregon model training, 2) Adolescent-oriented therapy aimed at developing of adolescent self-regulation, 3) The combination of these two interventions and 4) The control group that determines their own behavioral goals were compared in terms of their efficacy on adolescent behavioral problems, and it was found that the adolescent-focused self-regulation improvement has led to increase the behavior problems in adolescents, the only meaningful effect being obtained was in the Oregon-model family-based training group (Gavita et al. 2014).

b. Therapeutic Foster Care

They are family-oriented caregiving practices for adolescents under adverse risk, such as hospital or safety regulations like prison. These applications are provided by specialized units and have components such as training of foster carers, executing of the treatment in the family order, limiting of the number of adolescents with one or two, supporting the foster carers for consultation and supervision, supporting for the biological family during treatment and especially during the reintegration phase (Fonagy et al. 2015). While these practices are subject to a number of different arrangements, the most systemic is the Oregon treatment foster care (Chamberlain 2017). In this method, the influence of social learning theory is incontrovertible. It is a social-based application for adolescents and their families with severe and chronic illnesses. Parents are selected

from the community and an alternative home and state is provided for them to develop adolescent skills that require out-of-home care. (Chamberlain 2017).

The purpose of this program is to ensure that adolescents are able to successfully survive in their communities, be supported by their abilities, and benefit from family therapies for their contemporaneous family members while providing intensive supervision and support. It is arranged to be 1 or 2 adolescents in each house and the process continues for 6-9 months. There is a team taking part alongside the trained caregivers including expert professionals, program supervisors, family therapists, individual therapists, skill trainers and an educator training the caregivers. The basic components of the model are the following; daily phone calls that includes parental report, weekly group supervisions of the caregivers, daily individual programs that supports adaptive behaviors, individual therapy focused on prevention of crime, weekly skill-constructive practices, family therapy (which continues after the union with the biological family), close follow-up of school continuity and performance, coordination of these applications, that the program staff and biological family are accessible by phone, and the psychiatric consultation to meeting with family (Fonagy et al. 2015).

c. Functional Family Therapy Approaches

According to this approach, the problematic behavior of the adolescent has an important function of determining support and sincerity with the regulatory or family members (Humayun et al., 2017). It is a progressive, editable and time-limited with 8-30 hour family therapy model. This treatment aims to increase interaction and dialogue in family relationships, and complexity of the family relationships are the primary goals. In the first phase of functional family therapy (contract and motivation phase), the therapist focuses on family-related problems and functions. In the second phase (behavioral change step), an innovative approach is created by aiming at behavioral change in individual and family relations. In the last stage (generalization), it is aimed at adapting and maintaining behavioral changes in a wider environment. It has been shown that the practice does not benefit from prevention of recidivism (Sexton and Datchi 2014) and even can be harmful if the method is not implemented correctly (Fonagy et al. 2015).

d. Multisystemic Therapy

This treatment method is especially developed for intervention in criminal adolescents aged 12-17 and designed to work with difficult-to-reach families (Henggeler and Schaeffer 2016). Features of this method include addressing the multifaceted nature of the severe conduct disorder, seeing the family as the key in effective behavior change, combining several evidence-based interventions, being a single therapy that offers many different modalities in one frame, tight control of model compatibility including comprehensive insurance coverage. The practices are the individual and flexible and described in the treatment handbooks (Henggeler and Schaeffer 2016). Family-oriented formation is the key feature of these practices. Therapy is applied by a specialist therapist to 4-8 families and is available 24/7 to ensure that the family can receive help from a multi-systemic therapy supplement in the event of a crisis. The treatment usually ends within 3-5 months. Sessions are held at the home of the family or in social centers. This practice is thought to be effective on processes that play a role in the formation of anti-social behavior. Conflict and hostile attitudes between parents and adolescents improve, support for family members increases, and verbal communication between

parents increases. It has been shown that as support increases and conflicts decrease, the symptoms of the adolescent decrease (Porter and Nuntavisit 2016).

According to studies conducted for the NICE guide (NICE 2013), multisystemic therapy is the most promising method for reducing individualistic and familial pathology, reducing antisocial and criminal behavior of the adolescent, despite heterogeneous outcomes. It has been shown that multi-systemic therapy improves family functioning by reducing behavioral problems, reducing problematic peer relationships, reducing crime recidivism on annual surveillance (Dopp et al. 2017, Johnides et al. 2017). In a study from Turkey, carried out by Kilicarslan and Atici (2017), systemic family therapy-based interventions were applied to 9th, 10th, and 11th grade students and their parents. In this perspective, "dealing with violence and aggression" program was given to the adolescent for 10 weeks and "non-violent confrontation" program was applied to their parents within 14 sessions. These interventions were found to be effective on lowering the aggressive behavior in adolescents and the stress levels of the parents, as well as developing parenting skills and family relationships in the parents.

e. Brief Strategic Family Therapy

This therapy was developed at the University of Miami based on structural family therapy to meet Latin needs (Lebensohn-Chialvo et al., 2018). Pragmatic-based, problem-focused structured orientations and limited time-of-use treatments were combined in this method. This model is an integrated model that combines structural and strategic family therapy techniques and deals with systemic and correlative interactions related to the problematic behavior of the adolescent (Fonagy et al. 2015). The 'strategic' aspect of therapy involves more than problem solving and strategic family therapies. It clarifies the steps to improve the behavioral problems of the adolescent and focuses on the problem. It does not target systemic problems of the family that are not directly related to problematic behavior. It is more cautious than other approaches in determining family structure and creating innovative structures based on systemic and structural hypotheses. A more innovative approach has been adopted in the implementation of therapeutic principles to help families in cultures against psychosocial practices. This method is applied for an average of 4 months and there is a handbook (Fonagy et al. 2015).

The therapist's goal is to allow adaptive behaviors to reduce the risky behavior of the adolescent while helping the family to change their repetitive maladaptive behavior pattern. Evidence supports the effectiveness of this therapy, but studies of the direct effect on criminal tendencies are insufficient. Although the accessibility of the method is unclear, it is perhaps the best evidence-based method for specific cultures (Horigian et al. 2016). As the fact that the other therapies have limited efficacy, the efficacy of this method becomes apparent (Lebensohn-Chialvo et al. 2018).

f. Multidimensional Family Therapy

Designed for substance addiction treatment in adolescents, this family-based treatment modality, has been also shown as effective in behavioral and emotional problems (Liddle and Hogue 2001). Like many family-oriented therapies, this method combines different theoretical perspectives such as "family system theory and developmental psychology". This method differs from the other methods in terms of how the therapist will make an individual relationship with the parents and the adolescent. They work in separate sessions with each other and are aimed at exchanging family relationships, as

well as working with the adolescent and the family. The key feature of this method is the use of developmental approach. Although it is a highly structured therapy system, it can offer a flexible treatment according to the needs of the adolescent and the family (Fonagy ve ark. 2015).

Practices can be individualized according to the cultural background of the family, history, communication style, language and experience. It is closed to routine practice in terms of structure and implementation, and for instance, it can be applied in home and clinical conditions, 1 to 3 times a week for 3-6 months, unlike the other evidence-based methods. Therapy consists of 3 steps including basic formation, exchange and consolidation and termination of treatment. The therapist should be sure that all involved people are really involved, that there is a clear clinical focus, that treatment continuity and participation is achieved, that behavior changes are noted, and that applications are audited if necessary (Fonagy et al. 2015). Randomized controlled trials have concluded that this method is particularly effective in terms of continuity and continuation of treatment (Liddle 2001). This therapy is thought to be one of the best therapy methods in the treatment of conduct disorder with substance use comorbidity (Henderson 2010).

3. School-based Interventions

The multitude of studies showing the link between criminal acts and school performance, school attitudes and school continuity has led to questioning the effectiveness of an alternative education program. According to a meta-analysis study, alternative education programs have positive effects on school performance, continuity and self-esteem, but have no impact on criminal behaviors (Fonagy et al. 2015).

Wilson and Lipsey (2007) conducted a meta-analysis of a total of 249 studies involving school-based practices and compared four groups including 1) "Universal programs" which are applied for all students, 2) "Selected/indicated programs", applied in the classrooms for the students with conduct disorder, 3) "Special school program" which involves classical training, and 4) "Comprehensive-multimodal programs" including cognitive-orientated approaches, social skills training, behavioral therapy, and individual-, group-, or family-therapies. The most effective approaches in these four applications were identified as universal programs and programs targeted by selected/indicated students. Effect sizes of the programs applied for selected/indicated students have been reported as "moderately" effective. Complementary multi-component programs were found to be less effective than well-targeted approaches. There is no "better" approach within these components in terms of effectiveness. Nonetheless, However, relationships and social skills oriented approaches were found to be least effective. In another study, "the effectiveness of gang resistance education and training (G.R.E.A.T.) program was investigated (Esbensen et al. 2011). Secondary school students were given a program consisting of 9 weeks of structured exercise and interactive applications by lawyers and while the initial results were quite encouraging, there was evidence that there was no activity in the following years.

Family Check-up

It is a promising school-based application and is an extended version of the Oregon model. The developmental theory is grounded and refers to obvious risk factors such as substance use, family management deficiency, bad peer environment and school prob-

lems (Garbacz et al. 2018). It promotes the development of family resource centers for families in schools. Via motivational interviewing parents' parenting practices are aimed at developing. High-risk families are reached through routine checks and support. After the motivational interviews, the forms are given to the parents for feedback. Most of the parents choose the continuation of support. Thus, this model becomes a practice chosen by the families themselves and nourishes itself. In a recent study, Garbacz et al. (2018) investigated the effectiveness of family check-up in 5802 children with early-adolescent age groups and this method was found to be associated with a decrease in substance use, an increase in peer communication, and a higher rate of continuity to practice.

4. Community and Institution Level Approaches

These approaches for adolescents with criminal acts and it has been reported that while community-level approaches including public service practices are effective in preventing criminal recidivism, institutional practices have increased adolescents' criminal behaviors.

Community-level Implementation of Programs

A large number of community-based practices are empowering mental health practices within the justice system. After an adolescent is arrested in the United States, the juvenile is directed to the juvenile courts, where the judge decides whether the juvenile is directed to one of the community services or continues to the court. In a meta-analysis study, it has been shown that criminal acts is increasing in the adolescents who are ongoing the court compared to the adolescents who sent to the public services (Petrosino et al. 2013). There is strong evidence that public service practices are superior to prison practice and that public services are effective in rehabilitation of juvenile delinquents and prevention of recidivism. Evidence-based community practices provide significant financial benefit relative to institutional arrangements. Some of these programs can not be implemented at an effective level due to lack of training or equipment. Despite the frequent implementation of community programs, there is limited evidence of efficacy due to the lack of systemic assessments (Fonagy et al. 2015).

Residential Programs

In the United States, 160,000 children and adolescents with conduct disorder were placed in an institutional program in 2007. These are observation centers, camping therapy programs, institutional treatment centers, breeding institutes and group houses and the data about the results of these centers are limited (Schaeffer et al. 2014, Henggeler et al. 2007). Information regarding the length of stay in institutional programs are not to be clear. The duration of stay determined by the juvenile law system is around 4 months on average. According to review studies, it has been reported that these practices do not meet the needs of the adolescent in areas such as mental health, substance use and education, and that criminal behavior increases in the majority of adolescents in the follow-up periods (Schaeffer et al. 2014). Some of the institutional programs in practice are the following;

- a. Teaching family model: In each house there are 5-8 adolescents. Social skills training and academic support are provided to follow the adolescents' school behavior. The effectiveness is weak and ends within 2-3 years of leaving the program.

- b. Wilderness therapy programs: It focuses on the relationship between the adolescent and their families. A temporary separation of about 8 weeks is provided, 8-10 teenagers are taken to a camping site. A few miles per day walking and basic life duties are maintained. Individual or group therapies are administered by the specialist therapist. According to a meta-analysis, this program provides a minor benefit compared to the other programs, improving family functioning but more intensive therapy programs are much more effective (Wilson and Lipsey 2000).
- c. Inpatient treatment: There is limited evidence to support the inpatient treatment's effectiveness. The design of these studies is weak and the results were not repeated in subsequent studies. Institutional-admission programs have serious side effects due to the fact that adolescence is a period related to personality development and are more costly than community service practices (Fonagy et al. 2015).

5. Partial Hospitalization Programs

The aim of this program is to allow pre-adolescents with severe conduct disorder to be able to stay in the community while their treatments are ongoing. Evidence for the effectiveness of partial admission programs is limited. There are few methodological problems that can be reached. Treatment patterns are highly heterogeneous (Fonagy et al. 2015).

6. Wraparound Services

These services were created in the USA in 1980. In the United States, 98,000 young people are registered to 800 services. The popularity of the program is largely due to the fact that it contains innovative applications rather than evidence-based effectiveness. This includes the family and the adolescent advocacy, the support of the federal authorities, and the reduction of the out-of-home and especially out-of-state settlement of the problematic adolescents (Mears et al. 2009). Individual support and individualized "wraparound" services are aimed rather than forcing to comply with a predetermined program. "Wraparound" can be described as a practical model that can be applied in effective residential systems where effective treatment and support can be given (Suter and Bruns 2009). A co-ordinator is appointed for each young person to provide close supervision via mental support, work with the family, coordinate the service needed. There is limited evidence of the effectiveness of these services. According to the results of a meta-analysis, this services have "moderate" effectiveness (Suter and Bruns 2009). However, the efficacy level is low, especially in terms of adolescent legal system and mental health systems. There are methodological limitations

Conclusion

Inconsistent and violent behaviors of the parents are primarily responsible for the development of behavioral problems beginning before the age of 10 and if the disorder is not treated with appropriate interventions, most of these children are posing a potential threat to both themselves and their immediate surroundings and the society they live in because of the anti-social behavior that develops during adulthood. Problematic behaviors emerging during adolescence are mainly stemming from sociocultural factors and

both the adolescent's own individual background and his/her surroundings facilitate the development of the disorder. Poor communication between parents and adolescents in the early-adolescence period, unhealthy family functions increase the problematic behaviors that exist in adolescence. For these reasons, it is necessary to treat the disorder with appropriate interventions in children and adolescents.

It has been reported that pharmacological agents in the treatment of conduct disorder are not effective on the impairment itself, except for the fact that they are administered to the other psychiatric disorders accompanying with the disorder or physical aggression. Consequently, in the effective and sustainable intervention to the disorder, the importance of the psychosocial methods of child and adolescent age group are mountaneous.

There are mainly child-, family-, and school-based interventions for conduct disorder before the age of 10; in addition to these methods, there are partial admission programs, public-institutional practices and other social elements in the treatment of adolescent-onset conduct disorder. In terms of effectiveness, "Family-based" interventions based on social learning theory in childhood-onset conduct disorder and adolescence-oriented programs based on "needs-, responvitiy- and risk-principles" seem to be effective.

Behavioral interventions are at the head of child-oriented practices in childhood-onset conduct disorder and is based on the fact that the child has "inadequate in the ability to process social information". Practices include topics such as how to make friends, effective communication skills, participation in group games, instruction of school rules, recognition of emotions, class rules and sanctions. Family-based interventions are based on parents training and divided into interaction- or behavioral-oriented approaches. Family-system theory is the basis of relationship-oriented training programs. The aim is to understand the feelings and thoughts underlying the problematic behavior of the child and to evaluate the answers that parents give their children. Behavioral-oriented parental training programs are shaped on the basis of social learning theory and aimed at reducing the problematic behaviors of the children by changing the behaviors of their parents.

School-based practices in childhood-onset conduct disorder are intended to reduce the violence in the classroom environment, where the principal teacher or other specialist is involved. It has been reported that the methods applied by the teachers cause a significant decrease in the externalizing behavior problems. In specialist-based interventions, the clinician or a specialist provides preventive training strategies (guidance, warning, clear and precise classroom rules), support for academic and social skills, effective rewarding and encouragement, motivating students, establishing positive relationships, management of the problematic behaviors, development and structuring of behavioral plans, and establishment of a co-operation with parents. A descriptive study, from Turkey reported that counselors can offer the children with conduct disorder face-to-face interviews, observations, monitoring and directing to the mental health services.

Adolescent-oriented practices for adolescence-onset conduct disorder include the interventions examining the thought processes that lead to adolescent continuing anti-social behavior. These are cognitive skills training, anger management, complementary components of social skills, moral reasoning and prevention of recurrence. It is empha-

sized that these practices are effective but in the following periods effectiveness decrease and the superiority of behavioral parental training declines in older ages. It has been shown that programs involving anger management and interpersonal problem solving methods are more effective than practices involving victimization and moral reasoning practices.

Family-based interventions is based on the fact that the behavioral problems in adolescent can be enhanced by some of the parents' attitudes. One of them is the Oregon model and it includes identifying risky behaviors, developing family supervisions, and implementing more effective punishment like restriction of free time. In the functional family therapy, it is aimed to increase interaction and dialogue in family relations, complexity of family relationships are the primary objectives. Multi-systemic therapy is specifically designed to work with difficult-to-reach families and is designed to intervene in adolescents aged 12-17 years, especially with criminal behavior. Among the treatments there are systemic and structural family therapy, parental education, marital therapy, supportive therapy related to interpersonal problems, social skills, social education, behavioral methods and cognitive behavioral therapy. These interventions has been effective in reducing aggressive behavior in adolescents, lowering the stress levels of the parents, developing parenting skills and family relationships in the parents. Brief strategic family therapy aims to improve the behavioral problems of the adolescent and does not target family problems that are not directly related to the problematic behavior. Although the accessibility of the method is unclear, it is perhaps the best evidence-based method for specific cultures. Multidimensional family therapy differs from other methods in terms of how the therapist will make an individual relationship with the parent and adolescent, and the therapist works with each other. Changing of family relations is targeted. Practices can be individualized according to the cultural background of the family, history, communication style, language and experience. This intervention is one of the best methods in conduct disorder with substance use.

The family check-up program, a school-based intervention for adolescent-onset conduct disorder, aims at developing parents' parenting practices by motivational interviews focusing on specific risk factors such as substance use, poor family functioning, peer environment and school problems. The method has been associated with a decrease in substance use, an increase in peer communication, and a high rate of continuity to practice. While the initial results were quite encouraging, there was evidence that there was no effective in the following years. There is strong evidence that community service practices are superior to than that of the prison in adolescent-onset conduct disorder, as well as effective in rehabilitation and criminal recidivism. On the other hand, institutional practices can not meet the needs of adolescents in areas such as mental health, substance use and education, and criminal behavior increases in the majority of adolescents in follow-up.

In conclusion, in childhood-onset conduct disorder the effective intervention seems to be family-based interventions whereas adolescent-oriented programs for adolescent-onset conduct disorder. Multi-modal approaches in family-based interventions are the most effective programs for both short- and long-term outcomes. With these interventions, the adolescents with high risk and advanced age seem to better progress. Adolescents with sexual offenses are less likely to benefit from treatment than others. Other methods mentioned in this review can be used in selected adolescents (criminal beha-

vior, socioeconomic status). There are a few study from Turkey related to these interventions and their effectiveness.

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