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Chapter 4

The Relationship between Emotional Distress and Cognitive Coping Strategies in Adolescents with Conduct Disorder (CD)

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Additional information is available at the end of the chapter

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Abstract

Conduct disorder (CD) is a matter of societal concern because of the significant burden for the patient, family and immediate environment and the strong associations with school failure, disrupted peer and family relationships, excessive risk-taking and addictive behaviors. The economic costs of aggressive and antisocial behavior in children and adolescents are huge. The mechanisms that lead individuals to adopt such behaviors have been defined and approached from various perspectives. Our purpose was to assess the emotional distress, irrational beliefs, emotion regulation strategies and callousness, uncaring, unemotional traits in a sample of adolescents diagnosed with conduct disorder and to investigate the relationship between them. The adolescents with conduct disorder had a low level of emotional distress and negative dysfunctional emotions. Girls reported a higher level of emotional distress than boys and significantly lower positive emotions. We found significant correlations between the emotional distress reported by the adolescents and their irrational cognitions. The suppression and reassessment strategies did not register values above those of the general population. No significant relation was found between emotional distress and the emotional regulation strategies reappraisal and suppression. The use of suppression related significantly with callousness, uncaring, and unemotional traits. The reappraisal coping strategy related significantly only with uncaring trait, the relation being negative. Research findings from different areas correlated with pathology may improve current therapies (i.e., including emotion regulation training in individualized intervention protocol) or help to develop new ones.

Keywords: emotional distress, emotion regulation, irrational beliefs, callous/unemotional traits, conduct disorder, adolescents

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1. Introduction

Conduct disorder (CD) is one of the main diagnosis for which consultations are required in specialized mental health services for children and adolescents. Polanczyk et al. published in 2015, a meta-analysis of 41 studies conducted between 1985 and 2012 in 27 countries. They estimated that the prevalence of mental disorders in children and adolescents worldwide is 13.4% (approximately 241 million young people around the world are affected by a mental disorder). The most common categories identified were disruptive disorders with a prevalence of 5.7% (affecting 113 million children), oppositional defiant disorder (ODD) 3.6%, and CD 2.1% [1]. Canino et al. included 25 studies in a meta-regression for CD and ODD, and the results showed a prevalence of CD estimated at 3.2%, with no significant variability on estimates of CD and ODD from studies conducted in North America and Europe [2]. The economic costs of aggressive and antisocial behavior in children and adolescents are huge. Romeo et al. in their sample of referred children (representing about a quarter of all cases of CD), reported the average annual total cost of £5960, but the largest cost burden of £4637, was borne by the family [3]. In 2012, Olesen et al. estimated that in Europe, 2.1 million subjects are affected by CD with direct health costs of 352 billion euros and direct non-medical costs of 3319 billion euros [4]. Thus, the importance of accurate and early identification of CD is supported by long-term implications on child and family functioning [5]. These often extend to the academic, social, and interpersonal relationships with peers or adults. Consequently, prompt access of children, adolescents, and family members to specialized services would avoid unnecessary and costly complications. The required interventions should be personalized, comprising the cognitive and emotional profile of the child and delivered timely. This way, the costs with lifetime care for each person may be reduced, through the effects on quality of life and well-being.

1.1. Definitions, actual classification

Both of the psychiatric classification systems used in clinical practice worldwide (ICD-10 and DSM-V) describe the essential features of CD as a repetitive and persistent pattern of behavior through which the basic rights of others or major age-appropriate societal norms or rules are repeatedly violated beginning in childhood or adolescence [6, 7]. DSM-V defines CDs based on 15 behavioral criteria that can be categorized into four generalized behavioral subtypes: (1) aggression to people and animals, (2) destruction of property, (3) deceitfulness or theft, and (4) serious violations of rules. Another mandatory requirement is that the disturbance in behavior causes clinically significant impairment in social, academic or occupational functioning [6]. Also, the DSM-V makes possible the distinction between childhood and adolescent-onset forms of CD. The WHO's ICD-10 divides the CD into socialized conduct disorder, unsocialized conduct disorder (to highlight the significant problems in developing peer relationships), conduct disorder confined to the family context, and ODD [7]. One of the major changes in DSM-V is the addition of psychopathic callous-unemotional (CU) traits as a new specifier. This entity is indicated as "with limited prosocial emotions." The concept includes the lack of remorse and empathy, lack of concern about school performance, and the manipulative

use of emotional display for personal gain. Consistent with the affective dimension of adult psychopathy, CU traits also include a lack of concern for others feelings and shallow affects.

1.2. Callous-unemotional traits and conduct disorder

Moffitt's development taxonomy describes two primary types of offenders, short-term adolescent offenders and life-course-persistent offenders [8]. This is one of the most recognized and persistent subtyping schemes of CD based on longitudinal research, indicating that youth with CD onset in childhood are at higher risk for exhibiting persistent criminal behavior into adulthood [9]. Moffitt's theory has made remarkable contributions to practice, including the possibility of identifying children at risk, but it did not integrate the elements of psychopathy concept with emotional and cognitive differences that can predict the disorder severity and risks. Another central theory in the field is that of Frick who considers focusing on the person's affective and interpersonal style to designate subgroups of antisocial individuals which is the hallmark of the psychopathy construct [10]. Consequently, it is possible to identify a subgroup of children with childhood-onset CD presenting callous-unemotional (CU) features [10].

In terms of prevalence, Kahn et al. reported that in a community sample, 10–32% of those with CD and 2–7% of those without CD met the callous-unemotional (CU) specifier and in a clinic-referred sample, 21–50% of those with CD and 14–32% of those without CD met the CU specifier [11]. Rowe reported similar result, 2.9% of the pediatric population had high CU traits, while only less than one-third of them also met the criteria for CD [12]. CU traits may appear outside the CD diagnosis, and another important research direction is set by the investigation of CU traits outside the CD diagnosis [13]. Children with CU traits show more behavioral problems, more severe aggression, and more proactive aggression than other children with CD [14]. Current studies describe high CU traits prevalence in youth with CD ranging from 10 to 46% in community samples to 21–59% in clinical samples [11, 12]. Forward longitudinal studies are needed on the consequences of having high, intermediate, and low levels of CU traits among children who meet the criteria for CD [15].

Most studies indicate that youth with elevated CU traits are at risk of developing severe and persistent antisocial behavior. Those with CD and the CU specifier showed higher rates of aggression in both community and clinic-referred samples, and higher cruelty rates in the clinic-referred samples [11]. The adolescent offenders with CD and the CU specifier showed more severe antisocial acts, delinquency, and higher recidivism rates [10, 16]. In longitudinal studies, CU traits emerged beside depression and drug use as the strongest predictors of later antisocial behavior [17]. The available studies indicate that CU traits have a stable characteristic that predicts poor outcome and suggests the hypothesis, not yet tested, that these traits represent the childhood-onset life-course persistent CD subtype.

1.3. Callous-unemotional traits, conduct disorder, and internalizing symptoms

Children and adolescents with CD with and without CU traits differ in their emotional, cognitive, and personality profiles. Although comorbidity rates are higher with other externalizing

disorders (i.e., ADHD-Attention-deficit/hyperactivity disorder or ODD-oppositional defiant disorder), there is also important overlap with internalizing disorders (i.e., depression and anxiety) [15, 18]. One longitudinal study found that increase in conduct disorder symptoms and CU traits was accompanied by increase in anxiety, depressive symptoms, narcissism, proactive and reactive aggression and decrease in self-esteem [19]. Other studies reported that chldren with high conduct problems alone were characterized by anxiety and increased physiological reactions to emotional stimuli compared to those with high CU traits and normal controls [20], contrary to anterior results [21]. Regarding the association between anxiety, depression, and the CU traits, research results are generally inconsistent [21]. Kahn explained the relation between high CU traits and anxiety, manifested by higher levels of impulsivity, externalizing behaviors, aggression, and behavioral activation, through a history of abuse [22].

CU traits in antisocial youth have been associated with deficits in emotionally distressing stimuli processing in numerous studies. A different pattern of emotional reactivity may characterize distinct subgroups of youth with antisocial behavior problems [23]. Children with CU traits and conduct problems seem less reactive to threatening and emotionally distressing stimuli than other antisocial youth using a number of different methods [10]. Different emotional profiles and emotional regulation processes may contribute to the development and expression of reactive and instrumental aggression [24]. Children that rated high in instrumental aggression were less emotionally reactive than those rated low in instrumental aggression [25]. Also, the associations between aggression, psychopathic traits, and responsiveness to distressing stimuli did not differ for boys and girls [26]. Similar results were reported by Muñoz et al. in a study on 85 adolescent boys placed in a juvenile detention center [27]. Sharp showed that the CU traits are associated with deficits in recognizing emotions over and above other psychopathy dimensions, and this relationship is driven by a specific deficit in recognizing complex emotions more so than basic emotions [28]. Most of the studies have generally shown that CU traits are related to a deficit in the child's affective experience of empathic concern to the distress of others. Current evidences support the low level of internalization problems in those with CD and high CU traits, in terms of both dysfunctional emotions and total emotional distress.

1.4. Callous-unemotional traits, conduct disorder, and cognitive emotion regulation strategies

Attempts to identify and classify emotional regulation strategies have led in time to the development of more paradigms [29, 30]. In relation to psychological pathology, emotional regulation strategies have been approached from an adaptive (i.e., reassessment, acceptance) or maladaptive (i.e., suppression, rumination) point of view. It is, however, considered that the psychological disorder is rather the result of their inflexible use. In most studies, maladaptive emotional regulation strategies are described as associated with aggressive behaviors. The adolescents' difficulty in regulating anger or depression negative emotions has been associated with their use of physical and relational aggression [31]. There is evidence that inflexible use of avoidance and suppression strategies can lead to aggressive behavior [32, 33] or can predict aggressive behavior even after anger control [34]. Instead, reassessment is more effective in reducing anger than attempts to suppress or accept it [35].

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Children with CU traits show a decreased level of emotion problems and, consequently, cognitive emotion regulation strategies seem to be more important for children without CU. Deficits in emotion regulation strategies directly (i.e., acting aggressively due to intense anger) or indirectly (i.e., by making the child more difficult to discipline) lead to the development of conduct problems [10]. Children with anger regulation problems often exhibit early oppositional/defiant behaviors, which tend to precede the development of CD in childhood [36].

1.5. Callous-unemotional traits, conduct disorder and cognitive behavioral therapy (CBT) interventions

CU traits may also be important when implementing treatment for CD children. Treatment options include parenting interventions and multisystemic therapy [37]. The therapeutic interventions possibilities are relatively limited and among those with proven efficacy are cognitive behavioral approaches. In REBT psychopathological model, primary and secondary irrational beliefs (maladaptive and hot cognitions) determine dysfunctional (positive or negative) emotions that translate into signs/symptoms at cognitive, emotional, behavioral and physiological level [38, 39]. Consequently, it is necessary to do a cognitive and emotional profile as complete as possible in order to choose and customize the most appropriate form of intervention. One of the most important irrational beliefs is low frustration tolerance which means that one cannot bear certain circumstances making a situation intolerable. The link between the irrational beliefs (frustration intolerance toward norms, work; demands for fairness) and anger negative dysfunctional emotion was demonstrated in several studies. In Fives's study, male gender, anger, and the irrational belief frustration intolerance to norms predicted aggression, but the combination between anger and frustration intolerance to norms was a better predictor for physical aggression [40].

Children with CU traits did not show improvements after punishment-oriented behavior modification programs [41] or are less responsive to typical parental socialization practices than other children with conduct problems [42]. An explanation for these poor outcomes may be the fact that children with CD and high level of CU traits are less distressed by the effect of their behavior on others [43]. Also, response to behavioral treatment seems to be poor and often needs booster sessions to maintain the improvements [44]. Buitelar considers that one of the greatest challenges is to develop, test, and implement new effective treatments for CD children with high levels of CU traits [45]. CU traits should be studied in relation with the response to existing CD treatments.

However, there are not enough studies to explain clearly the mechanism by which cognitive components such as irrational beliefs lead to the appearance of dysfunctional negative emotions—anger type and subsequently to the emergence of aggressive behaviors. In principle, emotional regulation cognitive strategies (i.e., reappraisal or suppression) can influence the level of emotional distress and, consequently, the behavioral reactions.

Our main objective was to assess the emotional distress, irrational beliefs, emotion regulation strategies and callousness, uncaring, unemotional traits in a sample of adolescents diagnosed with conduct disorder. Secondary, we wanted to investigate the relationship between emotional distress, irrational cognitions, emotional regulation strategies and

callous/unemotional traits and the effects of irrational beliefs and emotion regulation strategies on distress. We conducted a cross-sectional clinical trial on a sample of adolescents diagnosed with conduct disorder.

2. Method

2.1. Participants

Data comes from 60 adolescents aged 14–18 years with a diagnosis of conduct disorder according to international diagnosis criteria Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM IV-TR) (DSM IV-TR was used because the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) was not available in Romanian at that time), who reported verbal or physical aggressive acts. The adolescents included in the study were patients in the Child and Adolescent Psychiatry Clinic from Cluj-Napoca, Romania between January 2015 and July 2015. Children diagnosed and treated in this clinic come from all the country and are diverse in terms of socioeconomic status.

We included in the study: boys or girls aged 14–18 with diagnosis of conduct disorder according to DSM IV-TR international criteria; QI > 80; agreement (adolescent and caregiver) to participate to the study after the purpose and protocol of the study were explained.

We excluded from the study: adolescents with known severe medical conditions; major accidents or stressors in the last 6 months; diagnosis of learning disorders (dyslexia); diagnosis of psychotic disorders; diagnosis of autism spectrum disorder; QI < 80; adolescents placed in foster care or institutionalized.

2.2. Instruments

For the diagnostic procedure, we used the Structured Clinical Interview for DSM-IV Childhood Disorders (Kid-SCID), which is a semi-structured interview for child and adolescent classification of psychiatric disorders. To assess the intellectual coefficient, we used the Raven's Progressive Matrices.

To assess emotions and the level of distress, we used Profile of Affective Distress (PAD)—a rating scale with 39 items that assesses subjective dimensions of positive and negative emotions (functional and dysfunctional) [46].

To assess the irrational beliefs, we used the General Attitudes and Beliefs Scale-Short Version (GABS-SV) [48], a self-report instrument with 26-items grouped into 8 specific subscales, that measures the irrational beliefs [47–50]: the need for achievement, the need for approval, the need for comfort, demands for fairness, self-downing, other-downing, rationality and irrational beliefs. GABS-SV allows the measuring of a global score for irrational beliefs as a result of the first six dimensions above. GABS-SV is based on current REBT theory, in which people who formulate their wishes in terms of imperative needs, have a high potential for generating emotional stress [38, 51–53].

To evaluate emotional regulation strategies, we used the Emotion Regulation Questionnaire (ERQ)—a 10 items scale (6 items measures the frequency of using reappraisal as an emotional regulation method and 4 items measures the frequency of suppression use). ERQ was developed by Gross and John [30] to measure the usual, habitual, reappraisal, and suppression use. Respondents choose a score for each item on a 7-point Likert scale ranging from 1 (strong disagreement) to 7 (strong agreement). Also, the authors ask for the order of items not to be reversed during the scale administration. The published results indicate that ERQ is a valid tool to measure individual differences in suppression and reappraisal. The scale is translated and adapted in many languages (www.spl.stanford.edu/resources.htlm) and has acceptable internal consistency indicators.

The Inventory of Callous-Unemotional Traits (ICU) is a 24-item questionnaire designed for the comprehensive assessment of insensitivity, lack of remorse and concern for others, callous/unemotional traits. These features proved to be important for the description of a distinct group of teenagers with antisocial and aggressive behaviors. The questionnaire has three subscales: callousness, uncaring, and unemotional. Item scoring is done on a Likert scale of 4 points from 0 (not true) to 3 (definitely true). The instrument can be applied to children aged 13–17 years [54, 55]. All psychometric instruments used are specific and standardized.

2.3. Design

Adolescents who agreed to participate in the study received additional information and signed informed consent. Psychiatric and somatic assessments were performed in order to determine eligibility, confirm the diagnosis and detect the possible co-morbidities. Each adolescent was psychologically assessed in order to determine the developmental level. The psychiatric examination comprised anamnesis, psychiatric evaluation, clinical observation and parental interview, including the Kid-SCID semi-structured clinical interview for infant, child, and adolescent disorders. The participants met the international diagnostic criteria DSM IV-TR for conduct disorder. Medical data have been supplemented with those in patients' observation charts and medical records.

After the clinical interview, the somatic exam, and psychological assessment, the adolescents filled in the assessment scales for emotions and the level of distress, irrational beliefs, emotional regulation strategies, and callous/unemotional features. The questionnaires were analyzed according to the instructions specified by the authors in the user manual. The participants filled in the questionnaire individually, without time limit.

2.4. Data analysis

The statistical software used for data analysis was the SPSS 17. To describe and assess the studied population and PDA, GABS-SV, ERQ, and ICU scores, we used univariate statistical analysis (mean, median, standard deviation, and frequencies). Bivariate statistical analysis (correlation and t test) was used to identify significant associations between the emotional distress, irrational cognitions, emotional regulation strategies and the features frequently

described as associated with aggressive behavior (lack of empathy, remorse, diminished emotional response) or sex differences in the studied sample.

2.5. Ethical aspects

The study was conducted in compliance with international ethical standards setout in the Helsinki Declaration of Human Rights updated. All the adolescents included in the study signed the informed consent. Data were used ensuring the privacy and subject's identity protection.

3. Results

Sixty patients with ages between 14 and 18 years, with psychiatric diagnosis of conduct disorder and aggressive behaviors were included in the study. Of the 60 patients' enrolled, 22 were girls and 38 were boys. The sex ratio (male: female) was 1.72:1. Mean age of patients was M = 16.16 years (SD = 1.25), with M = 15.90 years (SD = 1.19) for girls and M = 16.31 years (SD = 1.27) for boys.

3.1. Distress scores

The assessment of the subjective dimension of the negative and positive, and functional and dysfunctional emotions, reported by the PAD questionnaire, indicates a low overall emotional distress mean score compared with the Romanian general population norms M = 32.46 (SD = 20.63) and would characterize this sample as having a low negative emotions. On all the other domains measured by PAD, negative functional emotions (sadness, worry) and negative dysfunctional emotions (depression, anxiety), adolescents with conduct disorder scored lower than the Romanian general population norms (see **Table 1**). Girls reported a higher level of overall emotional distress score M = 38.36 SD = 18.65 (the upper limit of the class II—low level of emotional distress) when compared to boys M = 29.05 SD = 21.19 (the lower limit of class II level of emotional distress).

Analyses performed separately for the two sex categories revealed statistically significant differences for negative dysfunctional emotion depression ($t(58) = -2.79$, $p = 0.007$) and positive emotions ($t(58) = 4.15$, $p < 0.05$), the girls scoring significantly higher on negative dysfunctional emotion depression than the boys and significantly lower on positive emotions, but still lower than the general population means.

3.2. Irrationality scores

The assessment of irrational cognitions with GABS-SV has highlighted medium level of irrationality for the studied sample. The adolescents scored on the medium level for all the dimensions measured by GABS-SV (the need for achievement, the need for approval, the need for comfort, demands for fairness, self-downing, other-downing, rationality, and irrational beliefs),

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	Sex	N	Mean	Std. Deviation	Std. Error Mean
PAD					
Emotional distress total score	Boys	38	29.05	21.19	3.43
	Girls	22	38.36	18.65	3.97
	Total	60	32.46	20.63	2.66
Negative dysfunctional emotions depression	Boys	38	6.84	6.72	1.09
	Girls	22	11.90	6.82	1.45
	Total	60	8.7	7.14	0.92
Negative dysfunctional emotions anxiety	Boys	38	6.15	4.87	0.791
	Girls	22	8.63	5.62	1.19
	Total	60	7.06	5.25	0.67
Positive emotions	Boys	38	30.05	9.88	1.60
	Girls	22	19.63	8.32	1.77
	Total	60	26.23	10.56	1.36
GABS SV					
Need for achievement	Boys	38	11.36	3.24	0.52
	Girls	22	13.27	1.16	0.24
	Total	60	12.06	2.81	0.36
Need for approval	Boys	38	8.42	2.26	0.36
	Girls	22	9.81	2.34	0.49
	Total	60	8.93	2.37	0.30
Need for comfort	Boys	38	11.31	2.52	0.40
	Girls	22	13.36	1.25	0.26
	Total	60	12.06	2.35	0.30
Demands for fairness	Boys	38	12.63	2.63	0.42
	Girls	22	14.45	2.19	0.46
	Total	60	13.30	2.61	0.33
Self-downing	Boys	38	10.21	2.78	0.45
	Girls	22	12.00	2.35	0.50
	Total	60	10.86	2.75	0.35
Other-downing	Boys	38	8.36	2.35	0.38
	Girls	22	9.63	2.10	0.44
	Total	60	8.83	2.33	0.30

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Rationality	Boys	38	14.73	2.68	0.43
	Girls	22	14.54	2.66	0.56
	Total	60	14.66	2.65	0.34
Irrational beliefs	Boys	38	62.31	9.30	1.50
	Girls	22	72.54	5.90	1.25
	Total	60	66.06	9.56	1.23
ERQ					
Suppression	Boys	38	12.78	3.18	0.51
	Girls	22	12.81	3.17	0.67
	Total	60	12.80	3.15	0.40
Reappraisal	Boys	38	19.10	3.87	0.62
	Girls	22	20.18	2.61	0.55
	Total	60	19.50	3.48	0.44
ICU					
ICU callousness	Boys	38	10.94	5.64	0.91
	Girls	22	8.27	5.40	1.15
	Total	60	9.96	5.65	0.73
ICU uncaring	Boys	38	10.42	5.66	0.91
	Girls	22	10.54	4.07	0.86
	Total	60	10.46	5.10	0.65
ICU unemotional	Boys	38	7.31	3.05	0.49
	Girls	22	7.54	2.10	0.44
	Total	60	7.40	2.72	0.35
ICU total score	Boys	38	28.68	11.85	1.92
	Girls	22	26.36	10.07	2.14
	Total	60	27.83	11.20	1.44

Table 1. Central tendency and dispersion indicators PAD, GABS SV, ERQ and ICU scores.

when compared with the norms for the Romanian general population (see **Table 1**). When looking separately on the two sexes, there are some differences. Boys reported a medium level of irrationality (M = 62.31, SD = 9.30), a low level on demands for fairness (M = 12.63, SD = 2.63) and a medium level on self-downing (M = 10.21, SD = 2.78), while girls reported a high level of irrationality (M = 72.54, SD = 5.90), a medium level on demands for fairness (M = 14.45, SD = 2.19) and a high level on self-downing (M = 12, SD = 2.35). Analyses performed separately

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for the two sex categories revealed statistically significant differences for all measured dimensions (need for achievement—$t(58) = -2.65$, $p < 0.05$; need for approval—$t(58) = -2.27$, $p < 0.05$; need for comfort—$t(58) = -3.54$, $p < 0.01$; demands for fairness—$t(58) = -2.73$, $p < 0.05$; self-downing—$t(58) = -2.53$, $p < 0.05$; other-downing—$t(58) = -2.08$, $p < 0.05$; irrational beliefs—$t(58) = -4.63$, $p < 0.01$), except rationality, the girls having significantly higher irrationality scores.

3.3. Coping mechanism scores

Suppression and reappraisal coping mechanisms are used by both girls and boys with similar frequency (see **Table 1**). The means calculated for the suppressing strategy ($M = 12.8$, $SD = 3.15$) have values lower than the means for the general population. Reappraisal strategy ($M = 19.5$, $SD = 3.48$) is also less used by the adolescents in the studied group. The norms are different for males and females and the girls from our sample use these strategies less than the boys.

3.4. Insensitivity, lack of remorse/concern for others, and callous/unemotional traits

ICU measures three behavioral dimensions: callousness, uncaring, and unemotional. The callousness includes factors such as lack of empathy, guilt, and remorse for misdoings. The study sample recorded higher scores on this domain than those of the general population ($M = 9.96$, $SD = 5.65$). Boys had higher scores than the girls, but the difference did not reach the statistical significance threshold ($t(58) = 1.79$, $p = 0.07$). The uncaring factor includes a lack of caring about performance in tasks and the feelings of others. On this domain, the adolescents with conduct disorder scored also higher than the general population norms ($M = 10.46$, $SD = 5.1$), with no sex difference. The third dimension focuses on the absence of emotional expression. In this domain, the studied sample scored higher than the general population ($M = 7.4$, $SD = 2.72$), with no sex differences (see **Table 1**).

3.5. The relationship between the emotional distress, dysfunctional negative emotions (depression, anxiety), irrational beliefs and coping strategies

Assuming that the emotional distress is generated among other factors, by the child cognitive individualities, we investigated whether in this population (adolescents diagnosed with conduct disorder), the potential mediators (irrational beliefs and coping strategies) relate statistically significant to the reported emotional distress.

We analyzed the relationship between the emotional distress, negative dysfunctional emotion depression and anxiety and irrational beliefs. For all three dimensions evaluated with the PDA subscales, we obtained statistically significant and positive correlations with the irrationality score, the intensity varying from medium to high. The relationship is positive, meaning that when the level of irrationality increases, the emotional distress increases also. In terms of explanatory value, irrationality explains between 16% ($R^2 = 0.16$ for negative dysfunctional emotions anxiety score) and 31% ($R^2 = 0.31$ for negative dysfunctional emotions depression score) of the emotional distress variance. Irrationality related significantly with the level of

positive emotions, the relation being negative. The irrationality dimensions that correlated with emotional distress scores were the need for achievement, the need for approval, the need for comfort, and demands for fairness. The self-downing dimension correlated only with the negative dysfunctional emotions depression scores. The relation was positive meaning that when the level of self-downing increases, the negative dysfunctional emotions depression also increases.

The suppression and reappraisal coping strategies measured by ERQ did not correlate statistically significant with PAD emotional distress scores (see **Table 2**).

3.6. The relation between the insensitivity, lack of remorse, callous traits, the irrational beliefs, and coping strategies

Because the insensitivity, lack of remorse, and callous/unemotional traits are considered to be important factors in describing a specific category of children and adolescents with conduct disorder and antisocial and aggressive behaviors, we investigated whether the irrational beliefs and coping strategies relate statistically significant to these traits measured by ICU.

As seen in **Table 3**, ICU callousness is related significantly only with the need for comfort irrationality subscale and ICU uncaring with the self-downing irrationality subscale. The relations were positive.

The suppression coping strategy (measured by ERQ) related statistically significant to all the domains measured by ICU, with intensities varying from medium to high. The determination

	Emotional distress total score	Negative dysfunctional emotions depression	Negative dysfunctional emotions anxiety	Positive emotions
Need for achievement	0.41**	0.38**	−0.33**	−0.22
Need for approval	0.38**	0.34**	−0.41**	−0.52**
Need for comfort	0.29*	0.33**	−0.26*	−0.21
Demands for fairness	0.47**	0.48**	−0.40**	−0.46**
Self-downing	0.24	0.40**	0.19	−0.11
Other-downing	−0.00	0.13	−0.11	−0.16
Rationality	−0.08	−0.22	−0.03	−0.19
Irrational beliefs	0.48**	0.56**	0.40**	−0.44**
ERQ Suppression	−0.12	−0.01	−0.06	0.06
ERQ Reappraisal	−0.18	−0.17	−0.04	0.02

*Correlations significant at $p < 0.05$;

**Correlation significant at $p < 0.01$.

Table 2. The correlation of PAD emotional distress scores with the irrational beliefs, and use of suppression/reappraisal coping strategies.

	ICU callousness	ICU uncaring	ICU unemotional	ICU total score
Need for achievement	−0.11	−0.01	0.04	−0.05
Need for approval	0.00	0.04	0.17	0.06
Need for comfort	0.29*	0.12	−0.20	−0.16
Demands for fairness	−0.16	−0.08	−0.07	−0.14
Self-downing	0.18	0.30*	0.07	0.25
Other-downing	−0.07	−0.16	−0.08	−0.13
Rationality	−0.24	−0.10	−0.09	−0.19
Irrational beliefs	−0.12	0.06	−0.01	−0.03
ERQ Suppression	0.38**	0.27*	0.41**	0.42**
ERQ Reappraisal	−0.18	−0.30*	−0.20	−0.28*

*Correlations significant at $p < 0.05$;
**Correlation significant at $p < 0.01$.

Table 3. The correlation of ICU scores with the irrational beliefs, and the use of suppression/reappraisal coping strategies.

coefficients obtained from the square of the correlation coefficients indicate that suppression explains between 7% ($R^2 = 0.07$ for ICU uncaring) and 17% ($R^2 = 0.17$ for ICU total score) of the ICU scores variance.

The reappraisal coping strategy is related significantly only with ICU uncaring and ICU total score, the relations being negative, meaning that the more frequently used is the reappraisal coping strategy the lower will be the scores at ICU.

4. Discussion

4.1. Main findings

Several studies reported that children and adolescents with conduct problems experience emotion more intensely, have difficulties in matching emotions to social cues, are more likely to feel angry in specific trigger anger situations, do not recognize their own feelings, and tend to focus on the negative aspects of situations [56, 57]. Often girls and boys at risk for conduct disorders and aggression have difficulties regulating their emotions. Children and adolescents at risk for externalizing problems have more negative emotions, less regulated emotions, and less regulated behaviors [58]. In our study, the adolescents with conduct disorder reported a low level of emotional distress and negative dysfunctional emotions (depression, anxiety) confirming the lack of a relationship between the symptoms of internalization and those of externalization with acts of aggression. Girls reported a higher level of emotional distress than boys, especially on negative dysfunctional emotion depression and significantly lower positive emotions. In a study regarding the gender differences in cognitive

vulnerability to depression and behavior problems in adolescents, the cognitive variables that best explained gender differences in depressive symptoms were negative orientation toward social problems, self-focused negative cognitions, lower levels of positive automatic thoughts, the need for approval and success, the need for acceptance beliefs and other-focused negative cognitions [59].

The adolescents with conduct disorder from the studied sample scored on the medium level for all the dimensions of irrationality were measured by GABS-SV (the need for achievement, the need for approval, the need for comfort, demands for fairness, self-downing, other-downing, rationality, and irrational beliefs). Girls reported a high level of irrationality and self-downing. Analyses performed separately for the two sex categories revealed statistically significant differences for all irrationality dimensions, girls having significantly higher irrationality scores than boys. The results confirm the findings from the study regarding the gender differences in cognitive vulnerability [59]. Also, irrationality related statistically significant with all emotional distress subscales, the intensity varying from medium to high, irrationality explaining between 16 and 31% of the emotional distress variance. The irrationality dimensions that correlated with emotional distress scores were the need for achievement, the need for approval, the need for comfort, and demands for fairness. The self-downing dimension correlated only with the negative dysfunctional emotions depression scores.

Non-adaptive emotional regulation strategies are described as associated with various aggressive behaviors. The difficulty in regulating negative emotions like anger or depression has been associated with the use of physical and relational aggression in adolescents [31]. A person can override emotion by suppression. Expressive suppression occurs when a person actively tries to inhibit ongoing behavior [60]. There is evidence in the literature suggesting that inflexible use of both avoidance and suppression strategies can lead to aggressive behavior. Another study found that the use of avoidance and suppression predicts aggressive behavior, even after anger control [34].

Two emotional regulation strategies: cognitive reappraisal and acceptance have been associated with important therapeutic approaches. Reappraisal is recognized as one of the active ingredients of traditional CBT [61], while acceptance is considered central to acceptance and commitment therapy [62], dialectical behavioral therapy [63] or mindfulness therapies [64]. In an experimental study, Szasz et al. showed that reappraisal is more effective in reducing anger than suppression or acceptance of it. Moreover, the participants in reappraisal group persisted significantly longer in a frustrating task than those trained to suppress or accept negative emotions [35]. Sullivan et al. found that the difficulty of managing and coping with anger was associated with increased physical aggression among those boys who generally do not inhibit emotional expression [31].

Three emotional regulation strategies have been found in studies to be protective for the emergence of psychopathology: reappraisal, problem-solving, and acceptance. Suppression (emotions and thoughts), avoidance (experiential and behavioral), and rumination are considered risk factors. Emotional expression is less studied in the clinical population. Age moderates the relationship between psychopathology and some non-adaptive emotional regulation strategies (i.e., suppression). Children are less able to use them due to the lack of acquisition of

executive control over emotional reactions [65] or difficulty in using metacognition [66, 67]. Suppression and reappraisal coping mechanisms are used by both girls and boys in the studied group, with similar frequency, but less than general population. The norms are different for males and females, and girls use these strategies less than boys.

The adolescents with behavioral disorders characterized by increased aggression, cognitive problems, and marked impulsivity, have an early onset of the disorder and a negative prognosis. A proportion of children and adolescents with conduct disorder have psychopathic traits consisting in two types of impairment: callous-unemotional traits associated with reduced empathic response to the distress of other individuals that reflects reduced amygdala responsiveness to distress cues and an impulsive-antisocial component with deficits in decision-making and reinforcement learning [68]. The Inventory of Callous-Unemotional Traits (ICU) [69] is designed for a comprehensive assessment of aggressive features, lack of empathy, lack of remorse, and reduced emotional expressivity. These features are considered to play an important role in highlighting antisocial and aggressive behaviors among adolescents.

ICU measures three behavioral dimensions: callousness, uncaring, and unemotional. The study sample recorded higher scores on all ICU domains than the general population. Boys had higher scores on callousness than the girls, but the difference did not reach the statistical significance threshold. For uncaring and unemotional domains, there were no sex differences. In recent studies, male adolescents did not report more aggressive behavior than females suggesting an increase in aggression and violence among girls [70].

Appropriate emotional regulation is a critical component for optimal child function, but there are differences in the use of emotional regulation strategies depending on the developmental level and the presence of a clinical disorder. Failure to acquire adapted emotional regulation skills leads to difficulties in social and school skills [71]. The use of suppression coping strategy, related statistically significant with all domains measured by ICU, the intensity varying from medium to high. The use of suppression explaining between 7 and 17% of the ICU scores variance. The use of reappraisal coping strategy related significantly only with ICU uncaring and ICU total score, the relations being negative. Emotion regulation using avoidance and suppression may increase aggression by exaggerating negative emotions, reducing aggression inhibition, compromising decision-making, diminishing social networks, increasing physical excitement, and preventing solving difficult situations [33].

4.2. Study limits

The study is cross-sectional and a causal relationship between the studied variables cannot be deducted. The clinical sample size was relatively small. The instruments were filled in by the adolescents and the answers reflect their perception on the measures proposed. Although the adolescents themselves may be the best source of information about their thoughts and emotions, for some instruments, like ICU, other respondents may offer more reliable information. The participants were asked to answer the questions considering different periods of time and the reporting accuracy could be reduced. The psychometric instruments used assessed only some emotional regulation mechanisms.

5. Conclusion

The adolescents with conduct disorder reported a low level of emotional distress and negative dysfunctional emotions (depression, anxiety) confirming the lack of a relationship between the symptoms of internalization and those of externalization with acts of aggression. Girls reported a higher level of emotional distress than boys, especially on negative dysfunctional emotion depression and significantly lower positive emotions. We found significant correlations between the emotional distress reported by the adolescents and their irrational cognitions, the relations intensities varying from medium to high. We found no significant relation between emotional distress and the emotional regulation strategies reappraisal and suppression measured by ERQ. The use of suppression coping strategy related significantly with all domains measured by ICU (callousness, uncaring, and unemotional), the intensity varying from medium to high. The use of reappraisal coping strategy related significantly only with ICU uncaring and ICU total score, the relations being negative. Callousness traits related significantly with the irrationality subscale need for comfort and the uncaring traits with the self-downing irrationality subscale.

The multitude of information and approaches in conduct disorder research underline the need for a comprehensive and individualized approach to treatment, recognizing the different needs and vulnerabilities. It is important to correlate research findings from different areas with pathology in order to improve current therapies (i.e., including emotion regulation training individualized in intervention protocol) or developing new ones.

Conflict of interests

The authors declare that they have no conflict of interest.

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