



Conduct Disorder in Student: The Predicting Role of Emotion Regulation, Callous-Unemotional Traits and Schema

Arezoo Paliziyan,^{1,2,*} Mahnaz Mehrabizade Honarman,³ and Nasrin Arshadi⁴

¹MA Clinical Psychology, Department of Psychology, Shahid Chamran University of Ahvaz, Ahvaz, IR Iran

²Young Researchers and Elite Club, Dezfoul Branch, Islamic Azad University, Dezfoul, IR Iran

³Full Professor, PhD of Psychology, Department of Psychology, Shahid Chamran University of Ahvaz, Ahvaz, IR Iran

⁴Assistant Professor, PhD of Psychology, Department of Psychology, Shahid Chamran University of Ahvaz, Ahvaz, IR Iran

*Corresponding author: Arezoo Paliziyan, MA Clinical Psychology, Department of Psychology, Shahid Chamran University of Ahvaz, Ahvaz, IR Iran. Tel: +98-9163474702, E-mail: a-palizban@mscstu.scu.ac.ir

Received 2016 February 04; Accepted 2016 November 27.

Abstract

Background: The fact that emotional dysregulation and early maladaptive schemas are considered as the defining core of conduct disorder has been validated through numerous studies. A strong association between the diagnosis of conduct disorder and callous-unemotional traits has also been found by numerous studies.

Objectives: This study was carried out in order to inspect the relationship between conduct disorder and emotion regulation, callous-unemotional traits, and schema in male high-school students in Dezfoul, SW Iran.

Methods: In the present descriptive correlational study, 320 male high school students were chosen in Dezfoul, using the multi-stage random sampling. Data collection was carried out using some instruments including the child behavior checklist (CBCL), difficulties in emotion-regulation scale (DERS) inventory of callous-unemotional traits (ICUT) young schema questionnaire-short form. The collected data were analyzed using multivariate regression analysis and the Pearson correlation coefficient.

Results: The results indicated a meaningfully positive correlation between emotion regulation, callous-unemotional traits and schema with conduct disorder. In addition, the results of multivariate regression analysis showed that among the above-mentioned variables studied, callous-unemotional trait was found to be the most effective predicting variable in conduct disorder ($P < 0.001$).

Conclusions: The findings of this study are in full agreement with those of previous ones, and basically show a significant association between callous-unemotional traits, emotion regulation and schema with conduct disorder.

Keywords: Conduct Disorder, Emotion Regulation, Callous-Unemotional Traits and Schema

1. Backgrounds

Among children and adolescent's psychiatric disorders, the conduct disorder can be mentioned as the worst disorders as well as the most principal reasons of referring to health centers (1). The main feature of the disorder, according to the fifth edition of Diagnostic and statistical manual of mental disorder (DSM-5) by American psychiatric association, is a constant mould of the repetitive behavior in which the essential people rights or norms and general social rules are ignored appropriate to the age. This behavioral mould is usually constant during the time (2), and it may be related to educational failures, behavioral long-lasting abnormalities (impulsivity and aggression) and anti-social consequences of the future (3), as well as an increase in social costs (4). For the annual prevalence of this disorder a range of 2% up to more than 10% or the average of 4% is estimated. It seems that the prevalence

of the conduct disorder increases from childhood to adolescence, and its prevalence in boys is more than girls (5). The majority of researchers believe that instead of a unique reason several factors put individuals within the risk of afflicting the disruptive disorder.

Problems related to behavioral and emotional self-control are among features of the conduct disorder (5). Recently, the emotional regulation has been recognized as an important aspect of the behavioral disorders (6). The difficulty in the emotional regulation can be attributed to the lack of habitude control, emotional inconsistency and extremist emotional reaction (7). One of the main theories about the emotional dysregulation is that, the inefficiency and disability in the emotional regulation and the excessive use of regulating negative emotion's strategies as well as accusing itself and others, are considered as the infrastructure mechanism of externalization and internalization in adolescents (8). The difficulty in the emotional

regulation as a comprehensive part has been seen in the childhood mental disorders, anxiety disorders, behavioral disorders such as attention deficit, hyperactivity and oppositional defiant disorder (9).

The most significant change in DSM5 comprises adding a subgroup of callous-unemotional traits to the conduct disorder. The callous-unemotional traits based on a permanent pattern are recognized by some behaviors which are indicating inattention to others as well as the lack of empathy, and generally it is a direct consequence of the lack of deficiencies. At the beginning of the childhood, callous-unemotional traits cause more invasive and permanent unsociable behavior toward the beginning of adolescence (10). Children who have callous-unemotional traits, in addition to conduct disorders, which began in the childhood, have different clinical attributes. Children who have both callous-unemotional traits and conduct disorder, firstly have a worse disorder which means they have different diversionary behavior, and they do not upset too much of their behavior, secondly, they have a little behavioral inhibition. The lack of reaction toward the low sensitivity finally leads to the punishment. This is the base of intruder behavior of children with the conduct disorder who have both features of cruelty and empathy (11).

The early maladaptive schemas, as a widespread and comprehensive mould are identified by emotions, cognitions, memories and corporal feelings that are formed in relation to interpersonal relations. They are permanent and long-lasting structures as well as they are tantamount to some lenses that affect the individuals' understanding from its own and others world (12). Schemas by providing some archetypes for the quality of interpreting social clues and the management of social conflicts help people to act in their own social life effectively. Studies (13, 14) show that people with the conduct disorder based on their primary experiences, have formed an adversary schema in their mind from the world, and according to this schema in their interpersonal relations estimate purposes of others unfriendly, and they react aggressively.

2. Objectives

The purpose of the present study was to determine the relationship between callous-unemotional traits, emotion regulation and schema and CD in a nonclinical population under 18 years old and to explore the quality of the relationship between members of the nonclinical population. Gaining the theoretical objectives leads to more knowledge about CD and the practical dimensions help to recognize specific patterns in CD and attribute experimental evidences to clinicians for identification of effective fac-

tors in formation of CD under 18 years old. Accordingly, this study aimed to evaluate if emotion regulation, callous-unemotional traits and schema can predict CD in students.

3. Methods

This is a cross sectional-descriptive study, investigating the relationship between difficulties in emotion-regulation (goals, impulse, aware, strategies, clarity and non-acceptance) callous-unemotional traits (callousness, uncaring and unemotional) and schema (mistrust/abuse and emotional deprivation) with conduct disorder in high school students. Correlation and stepwise regression analysis were conducted using SPSS for windows, version 20. All participants completed the child behavior checklist (CBCL), difficulties in emotion-regulation scale (DERS), inventory callous-unemotional traits (ICUT) young schema questionnaire-short form (YSQ-SF).

3.1. Participants

350 male students studying in 2st and 3rd grades of high school in educational year 2014 - 2015 (Iranian year of 1394 - 1395), chosen via multistage random sampling, among the 30 boy's high school in Dezful. Firstly, ten boy's schools were chosen randomly, then two classes of each were selected by random and finally half of the students of each class were randomly chosen to answer the above mentioned questionnaires (the child behaviour checklist (CBCL), Difficulties in emotion-regulation scale (DERS), inventory callous-unemotional traits (ICUT) young schema questionnaire-short form). We were administered to groups of students. Thirty respondents were eliminated from the sample due to not completing the questionnaire accurately. Therefore, the final sample comprised of 320 male students. The age range of the participants was 15 to 18 years, with an average (SD) of 16.34 (0.66). 44.7% of subjects were in 2st grade and 55.3% in 3rd grade of high school. The average cumulative grade-point average (CGPA) of the sampled students was 17.76, SD = 1.62.

3.2. Instruments

The child behavior checklist (CBCL; Achenbach, 1991): This is a standardized format with 112 items which is completed by parents for recording behavioral problems and skills in children and adolescents, ranging between 6 and 18 years old. CBCL scores are the 3-point Likert scale, each being either 0 (not true, as far as you know), 1 (somewhat or sometimes true) or 3 (very true, often true). The psychometric properties of the inventory proved to be sufficiently accurate ($\alpha > 0.91$) (15). In the current study, Cronbach's α was calculated to be 0.84.

Difficulties in emotion regulation strategies scale (DERS; Gratz and Roemer, 2004): This scale was introduced by Gratz and Roemer (16). The current copy of this questionnaire contains 36 paragraphs and 6 subscales which are: non-acceptance, difficulty in engaging goal-oriented behaviors (Goals), impulse controlling difficulties (Impulse), lack of emotional awareness (Aware), limited access to emotion-regulation strategies (strategies) and lack of emotional clarity (clarity). Higher scores manifest more difficulty in emotion regulation category and the maximum score to attain in this questionnaire is 180 (17). Sharp et al. (17), Gratz and Roemer (16), Wineberg and Klonsky (18) have reported the structural validity, form see validity and test stability of a well retest in educate teens and students. Wineberg and Klonsky (18) carried out the research in a population sample of 428, comprised of 13 to 17 year-old subjects and the inner homology of the subscales was reported between 0.76 to 0.97 for this test. In this study, Cronbach alpha was calculated 0.84.

Inventory of callous-unemotional traits (ICU; Frick 2003): The aim of this 24-item self-parent or teacher report questionnaire is to assess callous-unemotional traits between adolescents, aged 13 - 18. This measure is basically adopted from CU scale of the Antisocial process screening device (19). Each item is rated by participants, using a five-point Likert scale with responses each being in the range of 0 (not at all true) to 3 (definitely true) in order to evaluate callousness (11 items), uncaring (8 items) and unemotional (5 items)(20). The higher the score is, the severer the callous unemotional traits will be. ICU has shown enough internal consistency in a sample of 540 students aged 10-16, ($\alpha > 0.66$) (21). In the current study, we used self-report version of the scale and the Cronbach's α was found to be 0.70 for total scale and 0.64, 0.68 and 0.48 for callousness, uncaring and unemotional dimensions, respectively.

The young schema questionnaire, short-form (YSQ-SF): This measure was made by Young and Brown (22) in order to measure primary inconsistent schema. High scores thereof mean more inefficiency of schemas role. The minimum score attained for any schema is 5 and the maximum is 25. Fine psychometric characteristics are indicated for the Persian translated short-form (23). In this study, two schemas of unreliance/ misbehavior and emotional deprivation, both related to conduct disorder, have been used. Cronbach's α is calculated 0.76 and 0.81, respectively.

4. Results

The participant characteristics both for the full sample and 2st and 3rd grade's students separately, including SDs, means, and minimum/ maximum scores on all measures are summarized in Table 1. No significant differences were

found between students in two grades in CD, DER, CUT and Schema.

Table 2 summarizes the results of bivariate analyses (Pearson correlations) in order to determine the relationships between variables. Table 2 demonstrates that conduct disorder has the most significant correlation with Callousness ($r = 0.31$; $P < 0.05$) and the least significant correlation with strategies ($r = 0.14$; $P < 0.05$). As can be seen from Table 2, severity of conduct disorder, emotion dysregulation, callous-unemotional traits and schema, and were mildly to moderately correlate with each other.

A series of regression analysis was conducted to examine the relationship between Callous-unemotional trait and schema as predictive variables and conduct disorder as a criterion variable. One of the basic assumptions of multiple regression analysis is independence of predictive variables or to put it in another word, the lack of correlation between the independent variables error. In next step, we investigate this case by Durbin-Watson test. In sum, it can be said that if the value of test statistic was between 1.5 and 2.5, the independence of the observations can be accepted and perform the analysis. Since the results of Durbin-Watson test were equal to 2.19, the predictor variables are independent. Table 3 summarizes the result of linear regression analysis.

As Table 3 shows, callous-unemotional trait and schema predicted the severity of conduct disorder in linear regression analysis. More specifically, R and R² reported to be 0.36 and 0.13 respectively, meaning that 0.13% of the variance related to conduct disorder can be explained by callous-unemotional trait and schema, F for the multiple correlations calculated to be 18.77 ($P < 0.001$).

5. Discussion

The findings of the present study show that callous-unemotional traits and schema are respectively predictors of conduct disorder. Consistently with existing literature, (24-26) we have found that distorted callous-unemotional traits associated to higher conduct disorder. Survey, to specify this theory, it can be said that, adolescents with callous-unemotional traits, have some problems to process cognitive drivers (low sensitivity toward the punishment) and the lack of accountability of the fear and punishment as well as the chief attribute of them is their low level of fear and anxiety that these attributes cause to form the conduct disorder in this type of individuals. According to Eisenberg et al. (27), the growth theories emphasize that the socialization of the behavior and internalization of the parents and society norms, to some extent, are related to the negative provocation due to the potential chastisement of the misbehavior that leads to the conscience

Table 1. Participant Characteristics and Descriptive Statistics on Main Study Variables^a

Variable	Range	Full Sample (n = 320)	2st Grade (n = 140)	3rd Grade (n = 178)
Age, y	15 - 18	16.34 ± 0.61	15.92 ± 0.41	16.66 ± 0.54
CGPA	11.50 - 20	17.76 ± 1.62	17.66 ± 1.73	17.87 ± 1.52
CD	0 - 25	2.19 ± 3.17	2.34 ± 3.77	2.08 ± 2.62
DER	44 - 154	87.64 ± 18.74	87.44 ± 19.14	87.80 ± 18.47
Goals	5 - 25	14.34 ± 5.07	14.40 ± 5.21	14.30 ± 4.97
Impulse	6 - 30	14.29 ± 5.21	14.40 ± 5.51	14.20 ± 4.97
Aware	6 - 26	15.73 ± 3.74	15.67 ± 3.97	15.77 ± 3.55
Strategies	8 - 37	17.80 ± 6.33	17.69 ± 6.47	17.89 ± 6.23
Clarity	5 - 25	10.76 ± 3.44	10.82 ± 3.26	10.70 ± 3.59
Non-acceptance	6 - 30	15.11 ± 4.50	14.93 ± 4.43	15.25 ± 4.56
CUT	7 - 42	21.11 ± 6.45	21.08 ± 6.36	21.14 ± 6.55
Callousness	1 - 20	20 ± 9.83	9.89 ± 3.26	9.78 ± 3.66
Uncaring	0 - 15	3.77 ± 2.91	3.93 ± 2.78	3.65 ± 3.02
Unemotional	2 - 15	7.50 ± 2.03	7.25 ± 2.003	7.70 ± 2.03
Schema	10 - 60	23.84 ± 9.57	24.29 ± 9.59	23.49 ± 9.56
Mistrust / abuse	5 - 30	12.20 ± 5.57	12.18 ± 5.19	12.21 ± 5.87
Emotional deprivation	5 - 30	11.64 ± 5.76	12.11 ± 5.90	11.27 ± 5.64

Abbreviations: aware, lack of emotional awareness; CD, conduct disorder; CGPA, cumulative grade-point average; clarity, lack of emotional clarity; CUI, callous-unemotional traits; DER, difficulties in emotion regulation strategies; goals, engaging goal-oriented behaviors; impulse, impulse controlling difficulties; strategies, limited access to emotion-regulation strategies.

^aValues are expressed as mean ± SD.

Table 2. Zero-Order Correlation Between Research Variables (n = 320)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CD	-													
DER	0.18 ^a													
Goals	0.17 ^a	0.75 ^a												
Impulse	0.22 ^a	0.82 ^a	0.72 ^a											
Aware	-0.08	0.18 ^b	-0.11 ^b	-0.07										
Strategies	0.14 ^a	0.85 ^a	0.62 ^a	0.68 ^a	-0.04									
Clarity	0.05	0.54 ^a	0.22 ^a	0.27 ^a	0.30 ^a	0.33 ^a								
Non-acceptance	0.07	0.59 ^a	0.31 ^a	0.34 ^a	-0.04	0.41 ^a	0.19 ^a							
CUI	0.28 ^a	0.31 ^a	0.14 ^b	0.28 ^b	0.20 ^a	0.27 ^a	0.23 ^a	0.06						
Callousness	0.31 ^a	0.28 ^a	0.16 ^a	0.25 ^a	0.14 ^a	0.27 ^a	0.17 ^a	0.08	0.86 ^a					
Uncaring	0.16 ^a	0.17 ^a	0.03	0.16 ^a	0.17 ^a	0.14 ^b	0.19 ^a	-0.01	0.73 ^a	0.42 ^a				
Unemotional	0.09	0.22 ^a	0.11 ^b	0.21 ^a	0.13 ^b	0.17 ^a	0.14 ^b	0.09	0.57 ^a	0.34 ^a	0.14 ^a			
Schema	0.19 ^a	0.39 ^a	0.25 ^a	0.33 ^a	-0.08	0.43 ^a	0.19 ^a	0.26 ^a	0.29 ^a	0.25 ^a	0.17 ^a	0.23 ^a		
mistrust / abuse	0.17 ^a	0.32 ^a	0.22 ^a	0.26 ^a	0.001	0.34 ^a	0.22 ^a	0.13 ^b	0.31 ^a	0.23 ^a	0.25 ^a	0.23 ^a	0.84 ^a	
Emotional deprivation	0.14 ^a	0.34 ^a	0.21 ^a	0.30 ^a	-0.14 ^b	0.36 ^a	0.10	0.32 ^a	0.17 ^a	0.20 ^a	0.03	0.15 ^a	0.83 ^a	0.42 ^a

^ap < 0.05.

^bp < .001.

growth. Individuals with callous- unemotional traits have less reaction against disturbing emotional drivers and this leads to the defective conscience growth in them. Those

people are irrespective toward emotions and sentiments of others and without feeling a twinge, they try to gain their goals by some behaviors such as aggression, social

Table 3. The Results of Stepwise Regression in Predicting Conduct Disorder

Dependent Variable	Index Predictive Variable	R	R ²	F P	Regression Coefficients			
					R Square Change	F Change	1	2
Conduct disorder	Callous-unemotional	0.32	0.10	29.60	0.10	29.60	$\beta = 0.32; t = 5.44$	
	Trait			< 0.001			< 0.001	
	Schema &	0.36	0.13	18.77	0.02	7.22	$\beta = 0.27$	$\beta = 0.16$
	Callous-						t = 4.46	t = 2.68
	Unemotional trait			< 0.001			< 0.001	< 0.008

destruction, freely administrating actions, which annoy others. According to findings of the present research that show the relationship between the conduct disorder and early maladaptive schemas and findings of the research (13, 14, 28), to specify this theory, it can be said that, basically incompatible schemas cause to orientation in the interpretation of circumstances. At the time of finding social cues, schemas can limit the adolescents' attention to specific aspects of the social environment (29).

Several limitations to this study are noteworthy. Since this research is a correlational study, thus it does not represent the causal relationships between variables. Consequently, compared to experimental and semi-experimental studies, these kinds of researches have less authentication. Another limitation is restricting sample to high-school students due to methodology. It is suggested to perform similar researches on larger samples of conduct disorder in other age groups to determine the quality of the relationship and be able to present more reliable and generalized information. In addition, other sex, social and economic groups may be also taken into account to expand findings. Therefore, it is suggested that more studies investigating these factors can obviously lead to clearer results.

In summary, we found in this community sample of adolescent that schema and callous- unemotional traits are a central psychopathological issue in developing CD, and this element should be carefully considered in the evaluation and treatment of this kind of patients.

Acknowledgments

The authors are grateful to all the participants for their valuable cooperation in this study. This work was in part supported by the Shahid Chamran University of Ahvaz (department of psychology).

Footnotes

Financial Disclosure: None of the authors have financial interests related to the materials in this manuscript.

Authors' Contribution: Arezoo Paliziyan was responsible for the acquisition of data, responsible for administrative and technical support, and also drafting the manuscript. Dr Mahnaz Mehrabizade Honarman and Dr Nasrin Arshadi were responsible for study supervision.

Funding/Support: This study has no financial support or grand.

References

- Henggeler SW, Sheidow AJ. Conduct disorder and delinquency. *J Marital Fam Ther.* 2003;29(4):505-22. [PubMed: 14593692].
- Ibrahim Abdelrahim Ibrahim H. Research on the prevalence of conduct disorders among primary school pupils in Khartoum-Sudan. *Health.* 2012;2012.
- Pardini DA, Fite PJ. Symptoms of conduct disorder, oppositional defiant disorder, attention-deficit/hyperactivity disorder, and callous-unemotional traits as unique predictors of psychosocial maladjustment in boys: advancing an evidence base for DSM-V. *J Am Acad Child Adolesc Psychiatry.* 2010;49(11):1134-44. doi: 10.1016/j.jaac.2010.07.010. [PubMed: 20970701].
- Kolko DJ, Lindhiem O, Hart J, Bukstein OG. Evaluation of a booster intervention three years after acute treatment for early-onset disruptive behavior disorders. *J Abnorm Child Psychol.* 2014;42(3):383-98. doi: 10.1007/s10802-013-9724-1. [PubMed: 23494526].
- American Psychiatric Pub. Diagnostic and statistical manual of mental disorders (DSM-5®). American Psychiatric Pub; 2013.
- Burke JD, Hipwell AE, Loeber R. Dimensions of oppositional defiant disorder as predictors of depression and conduct disorder in preadolescent girls. *J Am Acad Child Adolesc Psychiatry.* 2010;49(5):484-92. [PubMed: 20431468].
- Reimherr FW, Marchant BK, Strong RE, Hedges DW, Adler L, Spencer TJ, et al. Emotional dysregulation in adult ADHD and response to atomoxetine. *Biol Psychiatry.* 2005;58(2):125-31. doi: 10.1016/j.biopsych.2005.04.040. [PubMed: 16038683].
- Garnefski N, Koopman H, Kraaij V, ten Cate R. Brief report: Cognitive emotion regulation strategies and psychological adjustment in adolescents with a chronic disease. *J Adolesc.* 2009;32(2):449-54. doi: 10.1016/j.adolescence.2008.01.003. [PubMed: 18775562].
- Ambrosini PJ, Bennett DS, Elia J. Attention deficit hyperactivity disorder characteristics: II. Clinical correlates of irritable mood. *J Af*

- fect Disord. 2013;**145**(1):70–6. doi: [10.1016/j.jad.2012.07.014](https://doi.org/10.1016/j.jad.2012.07.014). [PubMed: [22868057](https://pubmed.ncbi.nlm.nih.gov/22868057/)].
10. Moffitt TE. Adolescence-limited and life-course-persistent antisocial behavior: a developmental taxonomy. *Psychol Rev.* 1993;**100**(4):674.
 11. Schroeder CS, Gordon BN. Assessment and treatment of childhood problems: A clinician's guide. Guilford Press; 2002.
 12. Young KS. What makes the Internet addictive: Potential explanations for pathological Internet use. 105th annual conference of the American Psychological Association. Chicago. 1997.
 13. Dodge KA, Laird R, Lochman JE, Zelli A, Conduct Problems Prevention Research G. Multidimensional latent-construct analysis of children's social information processing patterns: correlations with aggressive behavior problems. *Psychol Assess.* 2002;**14**(1):60–73. [PubMed: [11911050](https://pubmed.ncbi.nlm.nih.gov/11911050/)].
 14. Schultz D, Shaw DS. Boys' Maladaptive Social Information Processing, Family Emotional Climate, and Pathways to Early Conduct Problems. *Soc Dev.* 2003;**12**(3):440–60. doi: [10.1111/1467-9507.00242](https://doi.org/10.1111/1467-9507.00242).
 15. Achenbach TM. Child behavior checklist/4-18. University of Vermont, psychiatry; 1991.
 16. Gratz KL, Roemer L. Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale. *J Psychopathol Behav Assess.* 2004;**26**(1):41–54. doi: [10.1023/b:joba.0000007455.08539.94](https://doi.org/10.1023/b:joba.0000007455.08539.94).
 17. Sharp C, Pane H, Ha C, Venta A, Patel AB, Sturek J, et al. Theory of mind and emotion regulation difficulties in adolescents with borderline traits. *J Am Acad Child Adolesc Psychiatry.* 2011;**50**(6):563–573 et. doi: [10.1016/j.jaac.2011.01.017](https://doi.org/10.1016/j.jaac.2011.01.017). [PubMed: [21621140](https://pubmed.ncbi.nlm.nih.gov/21621140/)].
 18. Weinberg A, Klonsky ED. Measurement of emotion dysregulation in adolescents. *Psychol Assess.* 2009;**21**(4):616–21. doi: [10.1037/a0016669](https://doi.org/10.1037/a0016669). [PubMed: [19947794](https://pubmed.ncbi.nlm.nih.gov/19947794/)].
 19. Frick PJ, Hare RD. Antisocial process screening device: APSD. Multi-Health Systems Toronto; 2001.
 20. Palizyan A, Sajadi SF, Mehrabizade Honarmand M, Arshadi N. The Preliminary Study of the Relationship Between Emotion Regulation Difficulties, Callous-Unemotional Traits and the Emergence of Oppositional Defiant Disorder in Outpatient Adolescents. *Razavi Int J Med.* 2016;**4**(1) doi: [10.17795/rijm34204](https://doi.org/10.17795/rijm34204).
 21. Ciucci E, Baroncelli A, Franchi M, Golmaryami FN, Frick PJ. The Association between Callous-Unemotional Traits and Behavioral and Academic Adjustment in Children: Further Validation of the Inventory of Callous-Unemotional Traits. *J Psychopathol Behav Assess.* 2013;**36**(2):189–200. doi: [10.1007/s10862-013-9384-z](https://doi.org/10.1007/s10862-013-9384-z).
 22. Young JE, Brown G. Young schema questionnaire. Cognitive therapy for personality disorders: A schema-focused approach. ; 1994.
 23. Ahi G, Mohamadifar MA, Besharat MA. Validity and reliability of Young Schema Questionnaire, short-form. *J Psychol Educ.* 2007;**3**(37):5–20.
 24. Muratori P, Lochman JE, Manfredi A, Milone A, Nocentini A, Pisano S, et al. Callous unemotional traits in children with disruptive behavior disorder: Predictors of developmental trajectories and adolescent outcomes. *Psychiatry Res.* 2016;**236**:35–41. doi: [10.1016/j.psychres.2016.01.003](https://doi.org/10.1016/j.psychres.2016.01.003). [PubMed: [26791396](https://pubmed.ncbi.nlm.nih.gov/26791396/)].
 25. Masi G, Milone A, Pisano S, Lenzi F, Muratori P, Gemo I, et al. Emotional reactivity in referred youth with disruptive behavior disorders: the role of the callous-unemotional traits. *Psychiatry Res.* 2014;**220**(1-2):426–32. doi: [10.1016/j.psychres.2014.07.035](https://doi.org/10.1016/j.psychres.2014.07.035). [PubMed: [25110316](https://pubmed.ncbi.nlm.nih.gov/25110316/)].
 26. Thornton LC, Frick PJ, Crapanzano AM, Terranova AM. The incremental utility of callous-unemotional traits and conduct problems in predicting aggression and bullying in a community sample of boys and girls. *Psychol Assess.* 2013;**25**(2):366–78. doi: [10.1037/a0031153](https://doi.org/10.1037/a0031153). [PubMed: [23244642](https://pubmed.ncbi.nlm.nih.gov/23244642/)].
 27. Eisenberg N, Cumberland A, Spinrad TL, Fabes RA, Shepard SA, Reiser M, et al. The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Dev.* 2001;**72**(4):1112–34. [PubMed: [11480937](https://pubmed.ncbi.nlm.nih.gov/11480937/)].
 28. Roelofs J, Onckels L, Muris P. Attachment Quality and Psychopathological Symptoms in Clinically Referred Adolescents: The Mediating Role of Early Maladaptive Schema. *J Child Fam Stud.* 2013;**22**(3):377–85. doi: [10.1007/s10826-012-9589-x](https://doi.org/10.1007/s10826-012-9589-x). [PubMed: [23524954](https://pubmed.ncbi.nlm.nih.gov/23524954/)].
 29. Lochman JE, Dodge KA. Distorted perceptions in dyadic interactions of aggressive and nonaggressive boys: effects of prior expectations, context, and boys' age. *Dev Psychopathol.* 1998;**10**(3):495–512. [PubMed: [9741679](https://pubmed.ncbi.nlm.nih.gov/9741679/)].