



Attachment and emotional regulation in adolescents with depression

Afektivno vezivanje i emocionalna regulacija kod adolescenata sa depresijom

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Abstract

Background/Aim. Attachment and emotion regulation skills are recognized as important factors in the development of depression, but their specifics have rarely been discussed in clinical adolescent population. The aim of our study was to investigate attachment and emotion regulation strategies in adolescents with depression. **Methods.** The sample consisted of 101 adolescents, age 16 to 24, divided into three groups: 1) 41 adolescents with the diagnosis of depressive disorder; 2) 30 adolescents with the diagnosis of anxiety disorder; 3) 30 health adolescents (without psychiatric diagnosis). The assessment was done by the following instruments: the Socio-demographic questionnaire; the Semistructured clinical interview (SCID-I) for the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV); the Beck Depression Inventory (BDI); the Inventory of Parent and Peer Attachment (IPPA) and Emotional Regulation Questionnaire (ERQ). Data were analyzed using MANCOVA and partial correlation, with gender, age and birth order as covariates. **Results.** The adolescents with

depressive disorders had less secure attachment to mother and peers than the health adolescents and less secure attachment to father comparing to other two groups (MANCOVA $F = 4.571$; $p = 0.000$). The adolescents with anxiety disorder had less secure attachment to father and peers compared to the healthy adolescents group ($p < 0.05$). The depressed adolescents used the strategy of cognitive reappraisal less often than both control groups (MANCOVA $F = 5.200$; $p = 0.001$). Subjective experience of depressive symptoms was related to insecure attachments to both parents and peers ($r = -0.457$; -0.436 ; -0.349 ; $p = 0.000$), as well as to lower use of cognitive reappraisal ($r = -0.446$; $p = 0.000$). **Conclusion.** Our findings related the adolescent depression to insecure attachment in all domains, with the specific weakness in emotion regulation (weak cognitive reappraisal). The findings could have practical implications for preventive and therapeutic interventions.

Key words:
adolescent; depression; emotions; object attachment.

Apstrakt

Uvod/Cilj. Afektivno vezivanje i veštine emocionalne regulacije prepoznati su kao značajni faktori u nastanku depresije, ali su retko razmatrane njihove specifičnosti u adolescentnoj kliničkoj populaciji. Naše istraživanje imalo je za cilj da ispita razlike u afektivnom vezivanju i strategijama emocionalne regulacije kod adolescenata sa depresijom. **Metode.** Uzorkom je bio obuhvaćen 101 adolescent, starosti 16 do 24 godine, od toga 41 adolescent sa dijagnozom depresivnog poremećaja, 30 adolescenata sa dijagnozom anksioznog poremećaja i 30 zdravih adolescenata (bez psihijatrijske dijagnoze). U istraživanju su primenjeni sledeći instrumenti: opšti Socio-demografski upitnik, Strukturisani klinički intervju (SCID-I) za Dijagnostički i statistički priručnik za duševne poremećaje – IV izdanje (DSM-IV), Bekov upitnik za procenu depresivnosti, Inventar afektivnog

vezivanja prema roditeljima i vršnjacima i Upitnik o emocionalnoj regulaciji. Međugrupne razlike analizirane su MANCOVA metodom, a povezanost parcijalnom korelacijom, uz pol, starost i red rođenja kao kovarijante. **Rezultati.** U grupi depresivnih adolescenata, afektivno vezivanje za majku i za vršnjake bilo je nesigurnije nego kod zdravih adolescenata, a vezivanje za oca nesigurnije u odnosu na ostale dve grupe (MANCOVA $F = 4,571$; $p = 0,000$). Adolescenti sa dijagnozom anksioznog poremećaja imali su nesigurnije afektivno vezivanje za oca i za vršnjake u odnosu na adolescente bez psihijatrijske dijagnoze ($p < 0,05$). Depresivni adolescenti ređe su koristili veštinu kognitivnog promišljanja u odnosu na obe kontrolne grupe (MANCOVA $F = 5,200$, $p = 0,001$). Subjektivni doživljaj depresivnih simptoma bio je povezan sa nesigurnim afektivnim vezivanjem za oba roditelja i vršnjake ($r = -0,457$; $-0,436$, $-0,349$ respektivni, $p = 0,000$) kao i sa slabijom upotrebom kognitiv-

nog promišljanja ($r = -0,446$; $p = 0,000$). **Zaključak.** Naši rezultati upućuju na povezanost nesigurnog afektivnog vezivanja u svim domenima nesigurnog afektivnog vezivanja i depresije u adolescentnom periodu, uz specifičnu slabost emocionalne regulacije (slabo kognitivno promišl-

janje). Dobijeni nalazi mogu imati praktične implikacije za kreiranje preventivnih i terapijskih intervencija.

Ključne reči:

adolescenti; depresija; emocije; afektivno vezivanje.

Introduction

Depression among adolescents represents an important and controversial phenomenon in psychiatry, having in mind its high prevalence, serious consequences and difficulties in diagnostic process¹. Studies show that as much as 20% of adolescents at the end of this developmental period have a high life prevalence of depression². Depression of early age may have a more severe form than the one which occurs later³, as it may lead to serious long-term dysfunction and suicide³⁻⁶. Still, there is a lack of knowledge about it, due to the impact of developmental variations in its manifestations which can be an obstacle in adequate recognition and treatment¹.

One of the factors associated with the development of depression is emotion regulation, a set of processes involved in modification of dynamics and intensity of emotional experience⁶. The emotion regulation skills are created in childhood, show individual stability and can play an important role in the adjustment processes⁷. The emotion regulation skills can be divided into two basic strategies: cognitive reappraisal strategy, which reframes the meaning of situation and effectively regulates further genesis of emotional experience and behavior, and expressive suppression strategy adopted after the genesis of emotions and leads to reduced expression of emotional behavior, with minimal impact on the actual emotional experience⁸. It was shown that more frequent use of cognitive reappraisal strategy is related to good adaptive outcomes, while more frequent use of expressive suppression in a longer period of time may be related to depressive symptoms⁹. It was also shown that maladaptive emotion regulation is associated with suicidality in children and adolescents, even with the control of depressive disorder⁸. Another factor, important for the mental health of adolescents, refers to the attachment to parents, as well as to peers – important attachment figures in this developmental period¹⁰. Patterns of attachment to parents represent internal working model for further interpersonal functioning¹¹. Secure attachment style represents the characteristic of good adaptability, while insecure attachment style plays an important role in the development of depressogenic models of adaptation and is a risk factor for the emergence of depressive disorders¹⁰. It was shown that insecure attachment to parents and peers is a risk factor for depression¹², and that insecure attachment to parents could be significantly associated with the suicidality in adolescent population¹³.

In addition to depression, the attachment patterns and emotion regulation strategies may be closely related to other internalizing psychiatric disorders in adolescence, such as anxiety disorders. Anxiety disorders represent the most frequent mental disorder of adolescence¹⁴, and may contribute to 2–3 fold in-

crease in risk of having both anxiety and depressive disorders in adulthood¹⁵. Similarly to those with depression, it was shown that adolescents with anxiety disorders have difficulties in emotion regulation as well¹⁶. On the other hand, numerous studies that explored the effect of attachment on mental health, in the last ten years, point out to the importance of this link not only in depression, but also in relation to anxiety symptoms within anxiety and depressive disorders¹⁷.

Although previous studies suggest a correlation between the above stated factors with the intensity of depressive symptoms among adolescents, the data on these relationships among adolescents with clinically manifested depressive disorder are scarce. Also, there is insufficient data on the specifics of these phenomena in depression comparing not only to healthy subjects but also to anxiety disorders in adolescence as well.

This study was aimed to explore the attachment and emotion regulation skills among adolescents with depressive disorders.

Methods

This cross-sectional study involved 101 participants from the area of Belgrade and surroundings; 52 (50.5%) were female and 49 (49.5%) male participants, age 16 to 24 years (mean age 18.95 ± 2.23 years). The sample consisted of three groups. Two patient groups were recruited consecutively, whereas healthy controls were engaged as a convenience sample, during the period January to October 2014.

The first group involved 41 patients of the Day Hospital for Adolescents at the Institute of Mental Health that fulfilled criteria for depressive disorder according to the Diagnostic and Statistical Manual of Mental Disorders – (DSM-IV) classification of mental disorders¹⁸. The second group involved 30 patients from the same institution, who had fulfilled the DSM-IV criteria for anxiety disorders. Both groups of patients were tested in the initial phase of treatment in the Day Hospital for Adolescents. The third group involved 30 high-school students from urban part of Belgrade who were never psychiatrically treated (healthy controls).

The exclusion criteria from the study were persons with previous or current psychotic symptoms, bipolar disorder, intellectual disability and substance abuse.

Among these three groups no statistical differences in gender was found ($\chi^2 = 0.469$; $p = 0.791$) and place of living (all of them were from Belgrade and surroundings). The healthy adolescents were younger than participants with anxiety disorder (ANOVA $F = 5.319$; $p = 0.006$; the Turkey HSD test: mean difference 1.8 years, $p = 0.004$), and had the later birth order comparing to both clinical groups (ANOVA

$F = 6.231$; $p = 0.003$; the study group – the Turkey HSD test: mean difference 0.519; $p = 0.004$; the psychiatric control group – the Turkey HSD test: mean difference 0.467; $p = 0.018$). These differences in age and birth order among the groups statistically (as covariates in multivariate analyses) were controlled. All participants signed informed consent (with parental permission for minors) at the beginning of the study. The study was approved by the Ethics Committee of the Institute of Mental Health, and was conducted according to the good research practice guidance provided of the School of Medicine, University of Belgrade.

Instruments

The participants were assessed by the self-report and interview instruments.

The socio-demographic questionnaire was developed for the purpose of this research. It explored the socio-demographic characteristics of adolescents as well as the data about previous psychological difficulties and psychiatric treatment.

The structured Clinical Interview for DSM-IV disorders, (SCID-I) was used¹⁸. The depressive disorders included were presented as major depression (depressive episode, recurrent depressive disorder), dysthymic and other depressive disorders. The anxiety disorders involved generalized anxiety disorder, panic disorder, panic disorder with agoraphobia, agoraphobia without history of panic disorder, specific phobia, social phobia, obsessive compulsive disorder, posttraumatic stress disorder and acute stress disorder.

The Beck Depression Inventory (BDI) was also used as well as the Emotional Regulation Questionnaire (ERQ).

BDI¹⁹ is a questionnaire measuring severity of depressive symptoms, through 21 items with 4-point scale answers. The final depression score is a sum of scores on each item.

ERQ²⁰ is a questionnaire in which participants report personal skills in emotion regulation: cognitive reappraisal and expressive suppression. These two scales are presented as continuous variables, through 10 items on a 7-point Likert-type scale.

The Inventory of Parent and Peer Attachment (IPPA)²¹ measures the level of attachment of adolescents to mother, father and peers. Modalities are expressed through separate scales, which consist of 25 items each, with 5-point scale answers. The scores are sums of relevant items, with reverse

coding of some items, and with a higher value scores indicating more secure attachment.

Statistical analysis

Data analysis was carried out by using the IBM Statistical Package for the Social Sciences (SPSS) software, version 20.0. The data were processed using t -test, multivariate analysis of covariance (MANCOVA) and partial correlation. In multivariate analyses, gender, age and birth order were used as covariates due to their significant relationship with main variables. Differences were considered statistically significant when the p -value was < 0.05 .

Results

Gender, age, and birth order were associated with main variables in different ways. Female participants had more secure attachment to peers comparing to males ($t = -2.628$; $p = 0.01$; mean difference 9.44), while males used expression suppression more, with marginal significance ($t = 1.937$; $p = 0.05$; mean difference 1.99). The older adolescents had less secure attachment to father ($r = -0.263$; $p = 0.009$). Those with later birth order had more secure attachment to father ($r = 0.286$; $p = 0.004$) and peers ($r = 0.274$; $p = 0.006$), whereas the association between birth order and attachment to mother was marginally significant ($r = 0.194$; $p = 0.053$).

The attachment differences between groups were statistically significant, controlling for gender, age and birth order (MANCOVA: Wilk's lambda = 0.753, $F = 4.571$; $p = 0.000$) in all three domains (Table 1).

Post-hoc contrast results (Table 2) showed less secure attachment to mother and peers in the depressed patients comparing to the healthy controls, while their attachment to father was less secure comparing to both control groups. The adolescents with anxiety disorders had less secure attachment to father and peers in comparison with the healthy controls.

The emotion regulation differences among the groups, controlling for gender, age and birth order were statistically significant as well, (MANCOVA: Wilk's lambda = 0.811, $F = 5.200$; $p = 0.001$), but only in the domain of the cognitive reappraisal, whereas no significant differences were found in expressive suppression (Table 3).

Table 1

Attachment differences among groups, controlling for gender, age and birth order

Attachment type	Depressed adolescents (mean \pm SD)	Anxiety controls (mean \pm SD)	Healthy controls (mean \pm SD)	Between-subjects effects (MANCOVA)
Attachment to mother	83.4 \pm 20.99	92.60 \pm 19.20	98.60 \pm 17.22	$F = 3.167$, $p = 0.047$
Attachment to father	70.12 \pm 20.48	80.90 \pm 27.68	99.77 \pm 16.01	$F = 10.518$, $p = 0.000$
Attachment to peers	90.24 \pm 16.84	88.37 \pm 20.25	104.03 \pm 15.25	$F = 4.415$, $p = 0.015$

SD – standard deviation; MANCOVA – multivariate analysis of covariance.

Table 2

Post-hoc group-by-group comparisons for attachment and emotion regulation

Posthoc	Attachment to mother	Attachment to father	Attachment to peers	Cognitive reappraisal
MANCOVA contrast significance	DA/AC	DA /AC*	DA /AC	DA /AC**
	DA /HC*	DA /HC***	DA /HC*	DA /HC***
	AC/HC	AC/HC*	AC/HC**	AC/HC

DA – Depressed adolescents; AC – Anxiety controls; HC – Healthy controls; MANCOVA – multivariate analysis of covariance; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3

Emotion regulation differences between groups, controlling for gender, age and birth order

Emotion regulation strategy	Depressed adolescents mean \pm SD	Anxiety controls mean \pm SD	Healthy controls mean \pm SD	Between-subjects effects (MANCOVA) F, p
Cognitive reappraisal	22.00 \pm 9.07	28.97 \pm 8.74	30.07 \pm 6.44	$F = 9.579, p = 0.000$
Expression suppression	15.09 \pm 5.62	14.90 \pm 4.85	13.17 \pm 4.97	$F = 1.338, p = 0.267$

SD – standard deviation; MANCOVA – multivariate analysis of covariance.

Post-hoc contrast results (Table 2) showed that the adolescents with depressive disorders used the cognitive reappraisal less, comparing to both control groups.

Controlling for gender, age and birth order, scores on BDI in the total sample were inversely partially correlated with attachment to mother ($r = -0.457; p = 0.000$), father ($r = -0.436; p = 0.000$) and peers ($r = -0.349; p = 0.000$) as well as with cognitive reappraisal ($r = -0.446; p = 0.000$), whereas there was no significant association with expressive suppression ($r = 0.124; p = 0.224$).

Discussion

Our findings showed the insecure attachment patterns in the adolescents with clinical manifestation of depressive disorders, comparing to the healthy controls. These results, as expected, confirm the findings of correlation between insecure attachment and depression in previous studies of adolescents^{22–26} as well as in studies of adults¹⁰. Small number of studies dealt with depressive disorder among adolescents²². Apart from major depression disorder, previous research rarely included other depressive disorders, which was the case in our study. Furthermore, small number of studies separately explored attachment to mother, father and peers in this context²³. In our study, the depressed participants, comparing to adolescents from the healthy population, had less secure attachments to both parents as well as to peers, and the subjective experience of depressive symptoms in our sample was significantly correlated with all three domains of attachment. When the attachments to both parents is considered, our findings are in accordance with the data from literature^{22, 24}. Parents have the strongest social impact on children, and the attachment to them is one of the aspects of this crucial relationship, that, as a goal brings the sense of security, safety, protection, and represents the foundation for mental health²². Agerup et al.²², however, noticed that previous studies most frequently explored the attachments to both parents together, or only to mothers, and stress the importance of analyzing the attachment to mother and father separately.

In our study, the depressed participants had insecure attachment both to mother and father comparing to the healthy controls, whereas in comparison with the adolescents with anxiety disorders, the attachment insecurity of the depressed patients was detected only in relation to father. These findings speak in favor of the previous findings of inverse correlation between mother's/father's support and depressive symptoms among adolescents²⁷. In the study done by Van Roekel et al.²⁷, however, the insufficient support by mother was related to depressive symptoms only for girls, while the weak support of father was related with depression only for boys. In our study, insecure attachment both to mother and father among depressed participants was independent of gender, age and birth order.

The relationship of depression and insecure attachment to mother is in accordance with a well-known fact that the early loss of mother is a risk factor for depression as well as that the problems in early relationship with mother represent the risk factor for depression in adulthood²⁸. The need to study attachment to father's figure in the context of the maladaptive outcomes for children, is increasingly recognized in literature²⁹. The attachment to father in our sample was the least secure in the adolescents with depression, more secure in those with anxiety disorders, and the most secure in the group of healthy controls. Such results may point out to the possibly specific role of attachment to father in adolescent depression comparing to anxiety disorders. As at the other side of the mirror, conflicting father-child relationship in previous research, was shown as a close association to depression in fathers, that, on the other hand, was found to be significantly related to child's internalized and externalized psychopathology²⁹.

When it comes to attachment to peers, the data in literature is scarce and inconsistent. Some studies presented a relationship of insecure attachment to peers and depression among adolescents^{23, 30, 31} while other did not show this association²². Adolescents with secure attachment to peers were characterized by capacity to form close relationships with peers while maintaining autonomy³¹. The formation of

adequate relationships to peers is important for self-confidence, however, when it is violated, the road to adolescent depression is open³². The good relationships with peers are necessary for the development of healthy personality in adolescence and can also decrease the negative influence of inadequate attachment to parents on personality development³³.

It is known that insecure attachment could be of importance not only for the development of depression but also for the wider spectrum of psychopathological manifestations¹⁸, such as anxiety disorders^{34, 35}, tendencies towards substance abuse, conduct disorders, and personality disorders³⁶. Whereas some studies showed contributions of attachment to parents to both depression and anxiety, with different pathways hypothesized³⁷, data on relative roles of attachment to mother and father in depression vs. anxiety are still insufficient. The participants with anxiety disorder in our study had less secure attachment to father and peers compared to the healthy controls and more secure attachment to father compared to the depressive participants. Their mean scores of attachment to mother was somewhere between the scores of the depressed and healthy controls, but the differences were not statistically significant. These findings may imply that parent, more specifically father-attachment security among anxious patients in our study, falls somewhere between the depressive and healthy group, and consequently, that attachment security may not only show qualitatively different trajectories to depression vs. anxiety, but that these differences may be also quantitative. In line with that, if internalizing disorders were represented on a gradual continuum, depression could be perceived as a more severe form of attachment disturbance than anxiety disorders.

When emotion regulation was considered in our study, subjects with depressive disorder had less adaptive emotion regulation comparing to both subjects with the anxiety disorder and healthy controls. The stronger subjective experience of depressive symptoms among our participants was also correlated with weaker emotion regulation. This finding is in accordance with previous studies which showed that dysfunctional emotion regulation was a significant factor that not only increased the risk for the development of depression³⁸ but also manifested after the recovery from depression, and increased the risk for depression relapse³⁹. Emotion dysregulation of our depressed adolescents manifested through less frequent use of cognitive reappraisal, comparing to both subjects with the anxiety disorders and healthy controls.

The aforementioned findings could point out to the specific problems of emotion regulation in depression that could precisely be related to insufficient cognitive reevaluation of emotional stimuli. This is in accordance with previous findings of depressed persons using cognitive reappraisal less than healthy subjects³⁸⁻⁴². Our results are in accordance with the hypothesis on cognitive reappraisal being the protective factor, therefore the one which could prevent the development of depression³⁸. However, when suppression of expression is considered, our results are not in accordance with the previous studies that recognized it as a maladaptive emotion regulation strategy, since it was more used by persons

with depression³⁸⁻⁴². Our study did not show significant differences in expressive suppression among the groups nor was there a significant correlation of this strategy with subjective experience of depressive symptoms in our sample. One of the reasons for this finding could refer to the fact that adolescents who are currently in psychiatric treatment are motivated, compliant and with better insight, thus less prone to suppressing emotional expressions. Even though the literature showed that weaker emotional regulation is also present among other mental disorders, not only in depression³³, subjects with anxiety disorders in our study did not show significant differences in this domain, comparing to the healthy adolescents. These results are in the contrast to previous studies that found more dysfunctional emotion regulation in adolescents with anxiety disorders, comparing to healthy ones⁴³. It was shown that anxious adolescents use adaptive emotional regulation strategies less than non-clinical subjects⁴⁴, i.e., the cognitive reappraisal, while they use more the expressive suppression as the maladaptive model of emotional regulation⁴⁵. In our study, however, the emotional regulation of anxious adolescents was closer to the one of the healthy subjects than it was to the depressive ones, which may, as well as when it comes to attachment, point out to possible specific patterns in the adolescent depression.

Our study has several limitations. The first one refers to the cross-sectional study design which makes it impossible to make conclusions about causal relationships. Secondly, the number of subjects in the groups was not high, which could impact the statistical significance and lead to underestimation of significant relationships. Finally, the participants with depression and anxiety disorders in the study were currently involved in psychiatric treatment that could influence the obtained data. However, our study has certain advantages. To our knowledge, it is one of the rare studies that examined clinically manifested adolescent depressive disorders in the context of attachment and emotion regulation while making a differentiation in attachment to mother, father and peers. It was, as well, one of the rare studies to compare the depressed adolescents not only the healthy controls, but also to compare the adolescents with anxiety disorders, with the control of gender, age and birth order.

Conclusion

The results of our study showed the relationship of insecure attachment in all domains with adolescent depression. This relationship refers both to depression and subjective experience of depressive symptoms. The adolescent depression in our study was specifically associated with emotional dysregulation through less frequent use of cognitive reappraisal, thus weaker reevaluation of emotional stimuli independently of gender, age and birth order in family. Such findings may be of importance for planning the therapeutic interventions focused on the attachment and empowerment of cognitive reappraisal as an emotional regulation skill in interpersonal relationships, for adolescents with depressive disorder.

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