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AFEKTIVNO VEZIVANJE I EMOCIONALNA REGULACIJA KOD ADOLESCENATA SA DEPRESIJOM

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ATTACHMENT AND EMOTIONAL REGULATION IN ADOLESCENTS WITH DEPRESSION

AFEKTIVNO VEZIVANJE I EMOCIONALNA REGULACIJA KOD ADOLESCENATA SA DEPRESIJOM


*Institute of mental health

Abstract

Introduction/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.

Method: 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 has been done by the following instruments: Socio-demographic questionnaire; Semistructured clinical interview for DSM-IV disorders (SCID-I); 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: Adolescents with depressive disorder had the attachment to mother and peers less secure compared to the healthy adolescents and the attachment to father was less secure compared to other two groups (MANCOVA F=4.571, p=0.000). Adolescents with anxiety disorder had less secure attachment to father and peers compared to the healthy adolescents group (p<0.05). Depressed adolescents used the strategy of cognitive reappraisal less often, comparing to both control groups (MANCOVA F=5.200, p=0.001). Subjective experience of depressive symptoms was related to insecure attachment 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 relate 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: attachment, emotion regulation, depression, adolescence

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.

Metod: Uzorak je činio 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 intervjuz za DSM-IV poremećaje; Bekov upitnik za procenu depresivnosti; inventar afektivnog vezivanja prema roditeljima i vršnjacima i upitnik o emocionalnoj regulaciji. Međugrupne razlike analizirane su MANOVA 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 adolescente 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 vezivanjем za oba roditelja i vršnjake (r=-0.457; -0.436; -0.349; p=0.000) kao i sa slabijom upotrebom kognitivnog promišljanja (r=-0.446, p=0.000).

Zaključak: Naši rezultati upućuju na povezanost nesigurnog afektivnog vezivanja u svih domena nesigurnog afektivnog vezivanja i depresije u adolescentnom periodu, uz specifičnu slabost emocionalne regulacije (slabo kognitivno promišljanje). Dobijeni nalazi mogu imati praktične implikacije za kreiranje preventivnih i terapijskih intervencija.

Ključne reči: afektivno vezivanje, emocionalna regulacija, depresija, adolescencija

Introduction

Depression among adolescents represents an important and controversial phenomenon in psychiatry, having in mind its high prevalence, serious consequences and difficulties in diagnostic process (1). Studies show that as much as 20% of adolescents at the end of this developmental period have a high life prevalence of depression (2). Depression of early age may have a more severe form than the one which occurs later (3), as it may lead to serious long-term dysfunction (4) and suicide (3,4,5,6). 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 treatment (1).

One of the factors associated with the development of depression is emotion regulation, a set of processes involved in the modification of dynamics and intensity of emotional experience (7). Emotion regulation skills are created in childhood, show individual stability and can play an important role in the adjustment processes (8). 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 expression suppression strategy, which is adopted after the genesis of emotions and leads to reduced expression of emotional behavior, with minimal impact on the actual emotional experience (9). It has been shown that more frequent use of cognitive reappraisal strategy is related to good adaptive outcomes, while more frequent use of expression suppression in a longer period of time may be related to depressive symptoms (10). It was also shown that maladaptive emotion regulation is
associated with suicidality in children and adolescents, even with the control of depressive disorder (9). 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 period (11). Patterns of attachment to parents represent internal working model for further interpersonal functioning (12). 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 disorders (11). It was shown that insecure attachment to parents and peers is a risk factor for depression (13), and that insecure attachment to parents could be significantly associated with the suicidality in adolescent population (14).

In addition to depression, 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 adolescence (15), and may contribute to 2-3 fold increase in risk of having both anxiety and depressive disorders in adulthood (16). Similarly to those with depression, it was shown that adolescents with anxiety disorders have difficulties in emotion regulation as well (17). 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 disorders (18).

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 to anxiety disorders in adolescence as well.

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

Method

This cross-sectional study involved 101 participants from the area of Belgrade and surroundings; 52 were female (50.5 %) and 49 male participants (49.5%), age 16 to 24 years (mean age 18.95±2.23). The whole 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 a depressive disorder according to DSM-IV classification of mental disorders (19). The second group involved 30 patients from the same institution, who had fulfilled DSM-IV criteria for anxiety disorders. Both groups of patients were tested in the initial phase of treatment in 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.

Between three groups there were no statistical differences in gender (Chi-square=0.469, p=0.791) and place of living (all were from Belgrade and surroundings. Healthy adolescents were younger than participants with anxiety disorder (ANOVA F=5.319, p=0.006; 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; study group - Turkey HSD test: mean difference 0.519, p=0.004; psychiatric control group -Turkey HSD test: mean difference 0.467, p=0.018). These differences in age and birth order between groups were controlled for statistically (as covariates in multivariate analyses). 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 self-report and interview instruments. The socio-demographic questionnaire, 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. Structured Clinical Interview for DSM-IV disorders, SCID-I (19). Depressive disorders included are presented as major depression (depressive episode, recurrent depressive disorder), dysthymic and other depressive disorders. 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.

Beck Depression Inventory, BDI (20) 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.

Emotional Regulation Questionnaire, ERQ (21) 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 (22) 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 using IBM SPSS (Statistical Package for the Social Sciences) software version 20.0. The data were processed using t-test, 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). 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).
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).

Table 1 about here

Posthoc contrast results (Table 2) showed less secure attachment to mother and peers in depressed patients comparing to health controls, while their attachment to father was less secure comparing to both control groups. Adolescents with anxiety disorders had less secure attachment to father and peers in comparison with health controls.

Table 2 about here

Emotion regulation differences between 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 cognitive reappraisal, whereas no significant differences were found in expression suppression (Table 3).

Table 3 about here

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

Controlling for gender, age and birth order, scores on BDI in 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 expression suppression (r=0.124, p=0.224).
Discussion

Our findings have shown the insecure attachment patterns for adolescents with clinical manifestation of depressive disorders, comparing to healthy controls. These results, as expected, confirm the findings of correlation between insecure attachment and depression in previous studies of adolescents (23, 24, 25, 26, 27), as well as in studies of adults (10). Small number of studies dealt with depressive disorder among adolescents (23). Apart from major depression disorder, previous research rarely included other depressive disorders, which is the case in our study. Furthermore, small number of studies separately explored attachment to mother, father and peers in this context (24). In our study, depressed participants, comparing to adolescents from healthy population, had less secure attachment 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 attachment to both parents is considered, our findings are in accordance with the data from literature (23,25). 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 has the sense of security, safety, protection, and represents the foundation for mental health (23). Agerup et al (23), however, noticed that previous studies most frequently explored the attachment to both parents together, or only to mothers, and stress the importance of analyzing the attachment to mother and father separately.

In our study, depressed participants had insecure attachment to both mother and father comparing to health controls, whereas in comparison with adolescents with anxiety disorders, the attachment insecurity of depressed patients was detected only in father domain. These findings speak in favor of the previous findings of inverse correlation between mother's/father’s support and depressive symptoms among adolescents (28). In the study done by Van Roekel et al (28), 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 to both mother and father among depressed participants was independent of gender, age and birth.

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 adulthood (29). The need to study attachment to father figure in the context
of maladaptive outcomes for children, is increasingly recognized in literature (30). The attachment to father in our sample was the least secure in 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 the other side of the mirror, conflictual father-child relationship in previous research, has been shown as close association to depression in fathers, that, on the other hand, is found to be significantly related to child's internalized and externalized psychopathology (30).

When it comes to attachment to peers, the data in literature is scarce and inconsistent. Some studies have shown relationship of insecure attachment to peers and depression among adolescents (24, 31), while others did not show this association (23). Adolescents with secure attachment to peers are characterized by capacity to form close relationships with peers, while maintaining autonomy (31). The formation of adequate relationships to peers is important for self-confidence; when it is violated, the road to adolescent depression is open (32). 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 development (33).

It is known that insecure attachment could be of importance not only for the development of depression, but for the wider spectrum of psychopathological manifestations (34), such as anxiety disorders (35, 36), tendencies towards substance abuse, conduct disorders, and personality disorders (37). Whereas studies have shown contributions of attachment to parents to both depression and anxiety, with different pathways hypothesized (38), 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 healthy controls, and more secure attachment to father compared to depressive participants. Their mean scores of attachment to mother was somewhere between the scores of 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 depression 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 quantitative as well. 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 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 have shown that dysfunctional emotion regulation is a significant factor that not only increases the risk for the development of depression (39), but is also manifested after the recovery from depression, and increases the risk for depression relapse (40). Emotion dysregulation of our depressed adolescents manifested through less frequent use of cognitive reappraisal, comparing to both subjects with 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 subjects (39,41,42,43). Our results are in accordance with the hypothesis on cognitive reappraisal being the protective factor, therefore the one which could prevent the development of depression (39). However, when expression suppression is considered, our results are not in accordance with the previous studies that recognize it as a maladaptive emotion regulation strategy, since has been more used by persons with depression (39,41,42,43). Our study did not show significant differences in expression suppression among 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 has shown that weaker emotional regulation is also present among other mental disorders, not only in depression (33), subjects with anxiety disorders in our study did not show significant differences in this domain, comparing to healthy adolescents. These results give contrast to previous studies that found more dysfunctional emotion regulation in adolescents with anxiety disorders, comparing to healthy ones (44). It was shown that anxious adolescents use adaptive emotional regulation strategies less than non-clinical subjects (45), i.e. the cognitive reappraisal, while they use more the expression supression as the maladaptive
model of emotional regulation (46). In our study, however, the emotional regulation of anxious adolescents was closer to the one of healthy subjects than it was to depressive ones, which may, as well as when it comes to attachment, point out to possible specific patterns in adolescent depression.

Our study had 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 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 depressed adolescents not only to healthy controls, but also to adolescents with anxiety disorders, with the control of gender, age and birth order.

Conslusion

The results of our study have shown the relationship of insecure attachment in all domains with adolescent depression. This relationship refers to both depression and to subjective experience of depressive symptoms. 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 therapeutic interventions focused on the attachment, and empowerment of cognitive reappraisal as an emotional regulation skill in interpersonal relationships, for adolescents with depressive disorder.
References


Table 1.
Attachment differences between groups, controlling for gender, age and birth order

<table>
<thead>
<tr>
<th>Attachment type</th>
<th>Depressed adolescents $\bar{X} \pm SD$</th>
<th>Anxiety controls $\bar{X} \pm SD$</th>
<th>Healthy controls $\bar{X} \pm SD$</th>
<th>Between-subjects effects (MANCOVA) $F$, $p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment to mother</td>
<td>83.4±20.99</td>
<td>92.60±19.20</td>
<td>98.60±17.22</td>
<td>$F=3.167$, $p=0.047$</td>
</tr>
<tr>
<td>Attachment to father</td>
<td>70.12±20.48</td>
<td>80.90±27.68</td>
<td>99.77±16.01</td>
<td>$F=10.518$, $p=0.000$</td>
</tr>
<tr>
<td>Attachment to peers</td>
<td>90.24±16.84</td>
<td>88.37±20.25</td>
<td>104.03±15.25</td>
<td>$F=4.415$, $p=0.015$</td>
</tr>
</tbody>
</table>

Table 2
Posthoc group-by-group comparisons for attachment and emotion regulation

<table>
<thead>
<tr>
<th>Posthoc</th>
<th>Attachment to mother DA/AC</th>
<th>Attachment to father DA/AC*</th>
<th>Attachment to peers DA/AC</th>
<th>Cognitive reappraisal DA/AC**</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANCOVA contrast significance DA /HC*</td>
<td>DA /HC***</td>
<td>DA /HC*</td>
<td>AC/HC</td>
<td>DA /HC***</td>
</tr>
<tr>
<td>MANCOVA contrast significance AC/HC</td>
<td>AC/HC*</td>
<td>AC/HC**</td>
<td>AC/HC</td>
<td>AC/HC</td>
</tr>
</tbody>
</table>

* DA - Depressed adolescents
AC - Anxiety controls
HC - Healthy controls
*p<0.05, **p<0.01, ***p<0.001

Table 3

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

<table>
<thead>
<tr>
<th>Emotion regulation strategy</th>
<th>Depressed adolescents</th>
<th>Anxiety controls</th>
<th>Healthy controls</th>
<th>Between-subjects effects (MANCOVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X ±SD</td>
<td>X ±SD</td>
<td>X ±SD</td>
<td>F, p</td>
</tr>
<tr>
<td>Cognitive reappraisal</td>
<td>22.00±9.07</td>
<td>28.97±8.74</td>
<td>30.07±6.44</td>
<td>F=9.579, p=0.000</td>
</tr>
<tr>
<td>Expression suppression</td>
<td>15.09±5.62</td>
<td>14.90±4.85</td>
<td>13.17±4.97</td>
<td>F=1.338, p=0.267</td>
</tr>
</tbody>
</table>

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