THE MODERATOR ROLE OF DIFFICULTIES OF EMOTIONAL REGULATION IN THE RELATIONSHIP BETWEEN AGE AND THE INTENSITY OF POSITIVE EMOTIONS

Dorina Maria NIJLOVEANU

Department of Applied Psychology and Psychotherapy, Faculty of Psychology and Educational Sciences, University of Bucharest

Address correspondence to: Dorina Maria Nijloveanu, E-mail: dorina.nijloveanu@unibuc.ro

Abstract

Objectives. Identifying aspects of the difficulties of emotional regulation (awareness and understanding of emotions, acceptance of emotions, the ability to control impulsive behavior and be in line with the desired goals in terms of negative experiences and the ability to flexibly use emotional regulation strategies in similar situations to correctly modulate emotional responses) and the force with which positive emotional experiences are lived in adolescence.
Material and methods. The sample of this study was made up of 427 students aged between 15 and 18 years (M_{age} = 16.35, SD = .93), 136 male (M_{age} = 16.38, SD = .95), from which data have been collected by applying questionnaires aimed at self-reporting to different emotional situations using Difficulties in Emotion Regulation Scale (DERS) and Revised Emotional Intensity Scale (EIS-R).
Results. The results shows the effect of the predictor (age) on the dependent variable (the intensity of positive emotions) at different levels of the moderator (average, low and high). Five of the six dimensions of emotional disorder have a moderator effect between age and the intensity of positive emotions (respectively: non-acceptance of emotional responses, difficulty in achieving objective-oriented behaviors, limited access to emotional regulation strategies, lack of emotional clarity and difficulty in controlling impulse). Poor emotional awareness is the difficulty of emotional regulation that does not moderate the relationship.
Conclusions. The results of the study emphasize those strategies of emotional regulation that specialists interested in developing in any programs or psychotherapeutic intervention techniques to consider with regard to adolescents.

Keywords: adolescence, emotion regulation, intensity of positive emotions, age.

Introduction

This article was carried out in order to identify aspects of emotionality during adolescence, based on the theory that the most common concept that describes emotional experience is affective intensity, defined as the stable difference in the strength with which individuals experience their emotions (Larsen & Diener, 1987).

In adolescence, which is a period marked by changes in cognitive, affective and social relationships, adverse experiences lived in relationships with the elderly are negatively associated with the processes of regulating emotions, behaviorally and neurally (Herd & Kim-Spoon, 2021).

Among other things, the regulation of emotions, is also our possibility to pre-encapsulate the emotional responses of others and contains strategies to increase, maintain or decrease the intensity, duration and direction of positive and negative emotions (Parsons et al., 2022). The intensity of positive events depends on factors such as emotional expressiveness and its contagion, the nuance that each strategy acquires and how different they are. This positive association is an adjunct for the context to become conducive to the effort and type of emotional regulation of young people (Hiekkaranta et al., 2021). Systematic changes in emotion dynamics across childhood and adolescence have been acknowledged although the specialized studies seem to be poor and fragmentary, being superimposed on heterogeneous concepts and methodologies (Reitsema, Jeronimus, van Dijk, & de Jonge, 2022).

Emotion regulation strategies can decrease the intensity of or modify the experience of emotions. It seems that there is a connection between occipital late positive potentials and emotional inhibition in adolescents that is influenced by individual differences in internal representations, an influence that is noted in the ability to regulate emotionally (Desatnik et al., 2021). Stressors are all the less intense as the intensity of emotional stimuli is higher and becomes a moderator in relation to emotion regulation strategies for five strategies for regulating emotions (reappraisal, reflection, acceptance, distraction and rumination). The results show that as stressors are more intense, most emotional regulation strategies (reappraisal, reflection, and acceptance) manifest less, while rumination manifests itself more (Blanke, Bellingtier, Riediger, & Brose, 2022).

Theories about the management of children's and adolescent emotions have been replicated to examine differences in emotional intensity, variability, instability, inertia, differentiation, and augmentation/blunting. Regarding the variability, it was found that the sadness increases in adolescents compared to children and in terms of intensity, there was a decrease from the beginning to the end of adolescence (Reitsema et al., 2022).

It seems that the high intensity and duration of positive emotions and the intensity of negative emotions lead to a better sleep, which in turn influences the experience and regulation of positive emotions in young people (Parsons et al., 2022).

Experimental studies have sought to understand and develop performance optimization programs in terms of emotional regulation strategies. First, analyzing the relationship between internet addiction and emotional intensity, were found than reappraisal is more specific to situations that cause low intensity of emotions than to situations that cause greater emotional intensity. More importantly, internet addicts use reappraisal less frequently than people who are not dependent on the internet, regardless of emotional intensity. Internet addiction, in addition to changing the habits of individuals to choose emotional regulation strategies, also affects frontal activities, causing difficulties in regulating emotions (Yan et al., 2022).

Both intense anxiety and the high variability of sadness correlate with mental health problems (Reitsema et al., 2022). These kinds of results are essential for the creation of intervention and prevention programmes (e.g. violence prevention and social-emotional learning programmes at school, parenting practices) in order to improve the situations of young people who have problems in experiencing and regulating emotionally (Herd & Kim-Spoon, 2021). Experimental studies have proven to be effective in developing programs to increase the intensity of positive emotions and at the same time decrease the level of anxiety (Kwok, Gu, & Tam, 2022).

Adolescents during COVID-19, has undergone social and emotional changes that have caused the increase of symptoms of depression, anxiety and have led to increased loneliness, although adolescents have been aware since the first months of what are the vulnerabilities (changes in the dynamics of friendship) and what would be the resiliences (supportive family contexts) (Rogers et al., 2021). During the school closures due to the COVID-19 pandemic in early 2020, cyber-victimization was associated with lower well-being as self-efficacy decreased for better management of negative emotions. as strategies of emotional regulation it has been proven that the most significant is rumination, as a maladaptive strategy. Cybervictims typically believe less in emotional self-efficacy (Schunk, Zeh, & Trommsdorff, 2022).

Material and methods

General objectives

The problem of the research is configured by the need to integrate the information existing in the specialized literature regarding the two spectra of the functioning in the affective plan (the difficulties of emotional regulation and the intensity of the positive and negative emotions) most frequently approached separately or with various psychopathology problems such as anxiety or depression and with aspects regarding the interaction, the questioning was tried regarding this phenomenon.

Research questions

Do difficulties in emotional regulation have a moderating effect on the relationship between age and the intensity of positive emotions?

Participants and procedure

The present research included 427 students aged between 15 and 18 years (M_{age} = 16.35, SD = .93), 136 males (M_{age} = 16.38, SD = .95) and 291 females (M_{age} = 16.33, SD = .93) from 5 schools in Bucharest. Thus, the research group was composed of 84 students aged 15 years, of which 24 are male and 60 are female; 164 pupils aged 16, of which 57 are male and 107 female; 125 pupils aged 17, of which 34 are male and are 91 female; 54 pupils aged 18, of which 21 are male and 33 are female. Data collection was done by applying questionnaires aimed at self-reporting to different emotional situations. Before the participants responded to the questionnaires, parental consent was obtained; both they and their parents were informed about the objectives of the study. To allay any concerns about the reliability of the responses, questionnaires were applied in the classrooms under close supervision. The subjects received further information when they asked for clarification and had the right to withdraw their consent and stop filling out the survey at any point. For statistical data analysis, the Statistical Package for Social Sciences (SPSS) version 24 was used (IBM SPSS, Armonk, NY, 2016). The moderator effect of the emotional regulation difficulties (DERS) in the relationship between age and the intensity of positive emotions has been investigated using the med-mod procedure in the Jamovi program.

Measures

Difficulties in Emotion Regulation Scale (DERS). In 2004, Gratz and Roemer developed the Difficulties in Emotion Regulation Scale (DERS) which contains 36 items with 5 response variants from 1 (almost never) to 5 (almost always), of which 11 items are with a changed sign. The scale comprises 6 subscales: not accepting emotional responses with 6 items (e.g. item: "*When I'm angry, I'm angry at myself because I feel that way."*), α = .80; the difficulty engaging in goal-directed behaviour with 5 items (e.g. item: "*When I am angry, I find it difficult to do my job.*"), α = .81; difficulties in controlling the impulse containing 6 items (e.g. item: "*I experience my emotions as overwhelming and out of my control.*"), α = .83; lack of emotional awareness, also with 6 items (e.g. item: "*I pay attention to how I feel.*"), α = .69; limited access to emotional regulation strategies assessed by 8 items (e.g. item: "*When I am angry, I think I will remain in that state for a long time.*"), α = .87; and the lack of emotional clarity that contains 5 items (e.g. item: "*My feelings are very clear to me.*"), α = .81.

Revised Emotional Intensity Scale (EIS-R) (Bachorowski & Braaten, 1993; Geuens & De Pelsmacker, 2002) contains 17 items that indicate two factorial directions, namely: positive emotions (e.g. item: "*Someone gives me a compliment. I feel:*"), α = .71 and negative emotions (e.g. of the item: "*Something frustrates me. I feel*:"), α = 77. the intensity of positive and negative emotional states without being confused with the frequency with which these states are experienced. The scale refers to the emotional experiences that the authors considered common in most people. Item 7 of the scale of positive emotions "*The person with whom I have a relationship prepares me a romantic dinner with candles. I feel*:" was changed to "*The person I have a relationship with is preparing me for a surprise date, in the city. I feel*:" to adapt it for the teen participants.

Results

Descriptive analysis

The analysis of the normality of the participant's score distribution using the aforementioned tools demonstrates that the use of parametric statistical tests is permitted.

The analysis of the normality of the participant's score distribution using the aforementioned tools shows that the use of parametric statistical tests is allowed. Thus, the values of the indicators of symmetry (skewness scores do not exceed the value of 3) and flattening (Kurtosis scores do not exceed the value of 8) are within the normal range. Table 1 shows the central trend of scores on the scales of emotional regulation difficulties. It can be seen that the highest score was recorded on the scale of "difficulty to achieve objective-oriented behaviors" (*M* = 2.88; *SD* = 1.01), and the lowest score was in the subscale "not accepting emotional responses" (*M* = 2.06; *SD* = .91) which means that the investigated students tend to have difficulty supporting goals through behaviors and are more willing to accept their emotional responses. Table 1 shows the central tendency of the scores of the variables of the intensity of positive and negative emotions. It can be seen that the highest score was recorded on the scale of "intensity of positive emotions" (*M* = 3.56; *SD* = .51) and the lowest score in the subscale "intensity of negative emotions" (*M* = 2.92; *SD* = .73) which means that the students investigated tend to feel the positive emotions more intensely than the negative ones.

Table 1

The central tendency of the scores of the difficulties of emotional regulation variables (N = 427)

	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Not accepting emotional responses	2.08	.90	1.07	.11	.71	.23
Difficulty in achieving goal-oriented behaviors	2.89	1.00	.27	.11	-.67	.23
Difficulties in controlling impuls	2.50	.99	.49	.11	-.43	.23
Poor emotional awareness	2.50	.80	.47	.11	-.05	.23
Limited access to emotional regulation strategies	2.31	.97	.75	.11	-.22	.23
Lack of emotional clarity	2.51	.94	.56	.11	-.13	.23
The intensity of positive emotions	3.56	.51	-.59	.11	1.55	.23
The intensity of negative emotions	2.92	.73	.26	.11	-.20	.23

Inferential analysis

To test the hypothesis of the study (the difficulties of emotional regulation have a moderating effect in the relationship between age and the intensity of positive and negative emotions) the moderator role of each dimension of DERS in the relationship of age – the intensity of positive emotions was examined. To test the hypothesis, annoying repetition the moderation procedure in Jamovi was used. For the analysis of the moderation relationship, two models were tested: in step 1, the age and one DERS dimension were included as independent variables, and in step 2, the interaction (product) between the age and the respective dimension.

The results showed five situations in which the moderation effect occurs, respectively in the case of non-acceptance of emotional responses, the difficulty to achieve behaviors directed by objectives, the difficulty in controlling the impulse, the limited access to emotional regulation strategies, the lack of emotional clarity. In the table below it can be seen that age ($z = 2.21$, $p < .05$), has a statistically significant effect on the intensity of positive emotions. The effect of the preacher (age) on the dependent variable (intensity of positive emotions) is statistically significant only at the medium level ($z = 2.21$, $p < .05$) and low ($z = 2.14$, $p < .05$) of not accepting emotional responses. Both age ($z = 2.13$, $p < .05$), difficulty the difficulty engaging in goal-directed behavior ($z = 2.20$, $p < .05$), and the interaction between age and the difficulty engaging in goal-directed behavior ($z = -2.17$, $p < .05$) have a statistically significant effect on the intensity of positive emotions (Table 2). The effect of the preacher (age) on the dependent variable (intensity of positive emotions) is statistically significant only at the medium ($z = 2.11$, $p < .05$) and low ($z = 2.78$, $p < .05$) level of the difficulty the difficulty engaging in goal-directed behavior. Only age ($z = 1.97$, p

< .05) has a statistically significant effect on the intensity of positive emotions (Table 3). The effect of the preacher (age) on the dependent variable (intensity of positive emotions) is statistically significant only at the medium level (z = 1.96, p = .05) and low (z = 2.21, p < .05) of the difficulty in controlling impulse. Age (z = 2.00, p < .05) and the combination of age and limited access to emotional regulation strategies (z = -1.85, p < .05) have a statistically significant effect on the intensity of positive emotions (Table 2). The effect of the preacher (age) on the dependent variable (intensity of positive emotions) is statistically significant only at the medium (z = 1.99, p < .05) and low (z = 2.76, p < .05) level of limited access to emotional regulation strategies. Age (z = 2.09, p < .05) and lack of emotional clarity (z = -2.82, p < .05) have a statistically significant effect on the intensity of positive emotions (Table 3). The effect of the preacher (age) on the dependent variable (intensity of positive emotions) is statistically significant only at the medium level (z = 2.09, p < .05) of the lack of emotional clarity.

Table 2

Estimation of the moderation in relationship between age and the intensity of positive emotions by not accepting emotional responses

	Estimate	Std. Error	Lower	Upper	Z	p
Age	0.06	0.03	0.01	0.11	2.21	0.027
Not accepting emotional responses	0.03	0.03	-0.02	0.09	1.05	0.292
Age∗Not accepting emotional responses	-0.03	0.03	-0.09	0.02	-1.16	0.247
Age	0.05	0.02	0.00	0.11	2.13	0.033
Difficulty in achieving goal-oriented behaviors	0.06	0.03	0.01	0.11	2.20	0.028
Age∗Difficulty in achieving goal-oriented behaviors	-0.06	0.03	-0.12	-0.01	-2.17	0.030
Age	0.05	0.03	-2.47e−4	0.10	1.97	0.049
Difficulties in controlling impuls	0.05	0.03	-0.01	0.10	1.70	0.089
Age∗Difficulties in controlling impuls	-0.03	0.03	-0.09	0.02	-1.25	0.213
Age	0.05	0.03	0.00	0.10	2.00	0.046
Limited access to emotional regulation strategies	0.02	0.03	-0.03	0.07	0.64	0.522

	Estimate	Std. Error	Lower	Upper	Z	*p*
Age∗Limited access to emotional regulation strategies	-0.05	0.03	-0.11	8.59e-4	-1.85	0.044
Age	0.05	0.03	0.00	0.10	2.09	0.037
Lack of emotional clarity	-0.09	0.03	-0.16	-0.03	-2.82	0.005
Age∗Lack of emotional clarity	0.02	0.03	-0.05	0.08	0.59	0.554

Table 3

Estimation of the simple regression slope

	Estimate	Std. Error	Lower	Upper	Z	*p*
Not accepting emotional responses						
Average	0.06	0.03	0.01	0.11	2.21	0.027
Low (-1SD)	0.09	0.04	0.01	0.17	2.14	0.032
High (+1SD)	0.03	0.03	-0.03	0.09	0.88	0.381
Difficulty in achieving goal-oriented behaviors						
Average	0.05	0.02	0.00	0.11	2.11	0.035
Low (-1SD)	0.11	0.04	0.03	0.20	2.78	0.005
High (+1SD)	-0.01	0.03	-0.07	0.06	-0.26	0.797
Difficulties in impulse control						
Average	0.05	0.03	2.07e-4	0.10	1.96	0.050
Low (-1SD)	0.09	0.04	0.02	0.17	2.21	0.027
High (+1SD)	0.02	0.04	-0.05	0.09	0.46	0.645
Limited access to emotional regulation strategies						
Average	0.05	0.03	6.26e-4	0.10	1.99	0.047

	Estimate	Std. Error	Lower	Upper	Z	p
Low (-1SD)	0.10	0.04	0.03	0.17	2.76	0.006
High (+1SD)	0.00	0.04	-0.07	0.08	0.08	0.939
Lack of emotional clarity						
Average	0.05	0.03	5.22e-4	0.10	2.09	0.037
Low (-1SD)	0.03	0.04	-0.03	0.11	0.94	0.348
High (+1SD)	0.07	0.04	-0.02	0.16	1.62	0.105

Note. shows the effect of the predictor (age) on the dependent variable (EIS pozitiv) at different levels of the moderator (Not accepting emotional responses, Difficulty in achieving goal-oriented behaviors, Difficulties in impulse control, Limited access to emotional regulation strategies, Lack of emotional clarity)

So, the hypothesis: "It is assumed that the difficulties of emotional regulation moderate the relationship between age and the intensity of positive emotions in the sense that in the case of increased use of emotional regulation difficulties, the intensity of positive emotions diminishes as they age." it is claimed, five of the six dimensions of emotional disorder have a moderator effect between age and the intensity of positive emotions, namely: non-acceptance of emotional responses, difficulty in achieving objective-oriented behaviors, limited access to emotional regulation strategies, lack of emotional clarity and difficulty in controlling impulse.

Discussions

The results of the study highlighted that emotional regulation has a moderator effect on the relationship between age and the intensity of positive emotions. These results are important because they contradict the results of other studies that tell us that the intensity of positivity at young ages influences the evolution of positive emotional reactivity at older ages, thus, age 5 high-intensity positivity was associated with lower age 7 emotion control and more adolescent risk-taking; age 5 low-intensity positivity was associated with better age 7 emotion control and adolescent cardiovascular health, providing evidence for the heterogeneity of positive emotional reactivity and age 5 anger reactivity, low-, and high-intensity positivity were associated with adolescent adjustment via age 7 emotion control (Dollar et al., 2022). Age is an important factor in the evolution of emotions, all the more so as there are studies that have shown that differences in the amplitudes and time courses of late positive potential during emotion regulation between adolescents and adults suggested that age-related changes in emotion regulation may occur during adolescence (Deng et al., 2019). Other studies that discussed the same variables showed converging results. For example, in a research, participants tended to use up-regulation when they experienced positive emotion and habitually regulated their negative emotion by down-regulation. Also, adolescents who utilized down-regulation in a certain sampling moment reported higher

positive emotion at the subsequent sampling moment; adolescents who utilized down-regulation more frequently reported higher positive emotion at the subsequent sampling moment (Deng, Sang, & Luan, 2013). In another research, the research findings showed that the mediation role of internal-functional emotion regulation, internal-dysfunctional emotion regulation, and external-functional emotion regulation in the relationship between adolescents' loneliness and positivity was statistically significant (Yıldız, 2016).

Conclusions

The moderator role of difficulties of emotional regulation in the relationship between age and the intensity of positive emotions was the central hypothesis of this research tested to constitute a basis from which to develop intervention programs for the development of emotional regulation strategies during adolescence. Adolescents have the greatest difficulties in manifesting goal-oriented behaviors and the smallest emotional responses of non-acceptance. Poor emotional awareness is the difficulty of emotional regulation that does not moderate the relationship between age and the intensity of positive emotions, which makes us conclude that it is very important how much teenagers manage to become aware of emotions in order to be able to regulate and feel them intensely.

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