ARTICLE

ANALYSIS ON RELATIONSHIP AMONG ANGER RUMINATION AND AGGRESSION WITH MEDIATING ROLE OF COGNITIVE EMOTION REGULATION IN ADOLESCENTS

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ABSTRACT

Background: The current study was intended to analyze relationship among anger rumination with aggression and mediating role of cognitive emotion regulation. **Methods:** The statistical population of research includes all of high school students (female and male) in Qom city. 377 of them were chosen as sample of this study. They filled out Anger Rumination, Aggression, and Emotion Regulation questionnaires. The method of execution of this study was of descriptive survey and correlation type. Path analysis model was utilized with LISREL software for data analysis. **Results:** Results of path analysis indicated that the effect of post-thoughts of anger, retaliatory thoughts, anger related memories, and recognition of reasons might be positive and significant. Retaliatory thoughts, anger related memories, and recognition of reasons have positive and negative significant effect on emotion regulation. The post-thoughts of anger, retaliatory thoughts, and anger-related memory have positive and significant effect on aggression. **Conclusions:** However, recognition of reasons has not significant effect on aggression. Positive emotion regulation has negative and significant effect on aggression. Negative emotion regulation has positive and significant effect on aggression.

INTRODUCTION

The emotionally capable persons act more adaptively in treating with life events and challenges and for this reason they also enjoy further mental health [1]. These persons also recognize their emotions under various conditions and perceive implicit the related concepts and express efficiently their emotional states for the others. These individuals more succeed in coping with negative experiences and show more suitable adaptation in relation to environment and others [1]. Therefore, emotions are subjective, biologic, purposeful, and social phenomena. The natural phenomena that may emerge in different persons under the same conditions including emotions playing important and efficient role in life of all people are emotions of anger and aggression. As a fundamental emotion, anger is related to threat and negative assessment. It activates physiological responses and influences in behavioral dispositions [2]. Similarly, anger may be conceptually defined as strong sense of protest or sadness about a person or situation that can be synonymous to sadness, uneasiness, anger, spite, hostility or irritation [2].

In this sense, aggression usually denotes behaviors that are executed by different techniques to exert physical or spiritual damages to others. Sometimes, this injury includes destruction of personal and/ or public properties and assets. For instance, if in soccer field a football player may unintentionally reason legs of other player to be broken is not assumed as aggression but if he deliberatively hits legs of other player to exit him from game field this behavior is certainly considered as aggression [3]. In this regard, if anger is generally seen as an emotion, anger rumination may be defined as thinking about this emotion. Phenomenology of anger rumination includes repeated and automatic experience of angry moments and the fantasies relation to revenge [4].

Concerning diagnostics of anger rumination and aggression, Berkewitz [5] expressed this possibility that the failed experiences, aggression, and stimulation are led to aggression through creation of negative emotion. Similar to this possibility, relationship among anger rumination- aggression can be mentioned. Iterative and unavoidable (imposed) thoughts about past irrigational experiences improve possibility of aggression by activation of negative emotions. Fact-phobic thought i.e. dominance of ifs and conceptual consequences based on which an individual deals with assessment of past events is also another mechanism that relates anger rumination to aggression. Due to fact-phobic and reality- phobic nature, the fact- phobic thought is strengthened by repeated rumination of ifs and unrealistic thoughts [6] and increases possibility for aggression.

Concerning above variables, researchers of psychological pathology argues that failure in employing and adjustment of emotion regulation skills may predict mental impairments of a person in the in the future. For this reason, when someone is exposed to an emotional situation, good sense and optimism are not adequate to control emotion but s/he also needs to have the best cognitive function under such situations [7]. Cognitive emotion regulation is called to all cognitive styles any person uses them to increase or decrease and/ to or keep his/ her emotion where they are examined within two important frameworks as follows: 1) emotion regulation strategies are activated before occurrence of accident or at the beginning of occurrence; 2) emotion regulation strategies are activated after occurrence of accident and/ or after formation of emotion. Those emotion regulation strategies, which are activated before occurrence of accident may play essential role in control of negative emotions caused by accidents [1]. Since they cause the given event to be interpreted in such a way that to reduce negative emotional responses. Thus, no one

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can ignore role of cognitive emotion regulation in adaptation of individuals with life events [8]. Emotion regulation has been considered as a group of processes a person may employ them to call up a positive or negative emotion, keep that emotion, and control or change it. The present research is intended to examine relationship among anger rumination and reactive aggression by taking mediating role of self-regulation in adolescents.

MATERIALS AND METHODS

The current research has been executed by descriptive (non- trial) method and correlational research design is of path analysis type because the relations between variables are examined in this study within causal model framework. The techniques of data-collection can be generally divided into two groups of librarian and field study. The studied population of research includes all high school female and male students (adolescents at age group of 15-18 years) in Qom city where they studied in academic year (2015-6). With respect to extent of present population, multistage clustered sampling technique was utilized to select research sample.

The sample was calculated 377 by this formula n=(N×t2×p×q)÷(N×d2+ t2×p×q) [9]. Given the rate of loss in number of testees, 400 participants will be chosen as sample size.

$$ n = \frac{N \times t^2 \times p \times q}{N \times d^2 + t^2 \times p \times q} = \frac{(3.8416)\,(.25)\ 20000}{(0.0025)\,(3.8416)\,(.25)\ 20000} = \frac{19208}{50.96} = 376.96 \approx 377 $$

Determination validity and reliability of research measurement tools

Cronbach alpha coefficient method was adapted in order to determine reliability of test in this study. In order to calculate Cronbach alpha, initially variance of scores in any subgroup of questions in questionnaire and total variance should be computed. Then, we calculate alpha coefficient value using following formula.

$$ r_\alpha = \frac{J}{J-1}\left(1 - \frac{\sum_{j=1}^{n} s_j^2}{S^2}\right) $$

Where, J is number of subgroups of questions of questionnaire or test; S_j^2 denotes subtest variance, S^2 is total variance of questionnaire or test [10]. In this study, high alpha coefficient (0.7) has been designated as suitable value for reliability of tools. Thus, reliability was measured by means of Cronbach alpha coefficient and SPSS software (v. 18). The results of Cronbach alpha coefficient have been reported in [Table 1]. Confirmatory factor analysis test was employed to examine validity of measurement tools rather than content validity.

Table 1: Cronbach alpha coefficients of research variables

Variables	Cronbach alpha
Post-thoughts of anger	0.78
Retaliatory thoughts	0.82
Anger- related memories	0.79
Recognition of reasons	0.77
Positive emotion regulation	0.80
Negative emotion regulation	0.81
Aggression	0.86

Introducing research tools

The measured variables included anger rumination, cognitive emotion regulation, and aggression in this study. Standardized questionnaires have utilized to measure each of these variables. Aggression questionnaire (Bass and Perry, 1992) was adapted to measure adolescent aggression. This inventory is a self-reporting tool comprises of 29 items and 4 subscales of physical aggression, verbal aggression, anger, and hostility. In order to measure anger rumination, Anger Rumination Scale ARS questionnaire was used that has been prepared by [4]. These inventory includes 19 questions with 4 subscales i.e. post-thoughts of anger, retaliatory thoughts, anger- related memories, and recognition of reasons. Cognitive emotion regulation questionnaire was used for measurement of cognitive emotion regulation that has been prepared by [8]. The main version of this questionnaire includes 9 components (self-blame, acceptance, rumination, positive refocusing, and planning, positive reappraisal, put into perspective, catastrophizing, and other-blame) with 36 articles.

Data analysis techniques

Descriptive and inferential tests were utilized for data analysis in this study. Factors of percentage, mean, standard deviation were used in descriptive part and Pearson's correlation tests and path analysis were utilized in inferential process. SPSS and LISREL software was employed for data analysis in this survey. Confirmatory factor analysis and path analysis techniques were employed for data analysis using LISREL software.

Fitness parameters in structured equations model

There are several parameters to evaluate model in which they have been introduced in three general classes of absolute, relative, and adjusted parameters. These parameters are listed in [Table 2].

Table 2: Fitness indices

| Absolute indices	Relative indices	Adjusted indices
Chi-square	Normalized fitness index NFI	PGFI
X^2/df ratio	Non-normalized fitness index NNFI	Parameter of normalized fitness index PNFI
Root of mean residues RMR	Incremental fitness index IFI	
GFI	Comparative fitness index CFI	
AGFI	-	

RESULTS

Confirmatory factor analysis of data

Primarily, in order to enter into structured equations, research tools should be tested by confirmatory factor analysis to determine construct validity. Confirmatory factor analysis was adapted to confirm each of variables and also the relevant items for each of them. In fact, confirmatory factor analysis is used for determination of fitness of measurement model. Similarly, a reliable method is proposed to researcher to evaluate construct validity as well thereby researcher can saliently test hypotheses about factorial structure of data resulted from a predetermined model with certain number and composition of factors. Confirmatory method tests optimal agreement of the observed and theoretical factorial structures for group of data to determine fitness of predetermined factorial model.

Confirmatory factor analysis of anger rumination

The confirmatory factor analysis method was adapted to determine validity of anger rumination. T-coefficients are reported in [Fig. 1]. Numbers on paths include factorial loadings. With respect to LISREL output in [Table 3], value of X2/df was calculated 2.31; the existing X2/df is smaller than 3 indicates goodness of fit for the model. Similarly, Root Mean Square Error of Approximation (RMSEA) should be smaller than 0.08 where it is 0.06 in the given model. Values of indices (GFI, AGFI, CFI, and NFI) should be also greater than 0.9 so that these values are determined respectively greater than the given level in studied model. Therefore, data of this study are well fitted with factorial structure of this scale and this represents coordination of questions with variable of anger rumination.
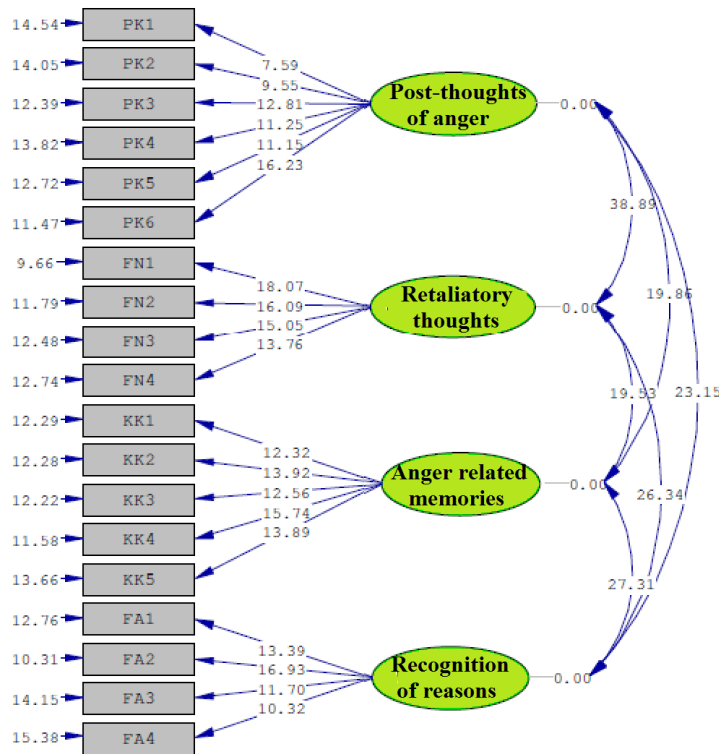
Chi-Square=332.67, df=144, P-value=0.00000, RMSEA=0.060

Fig.1: T- coefficients for variable of anger rumination .

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Table 3: Fitness indices for scale of anger rumination

Trait	Estimation	Criterion
Ratio of chi-square to degree of freedom (X^2/df)	2.31	X^2/df<3
Root mean square of error of approximation (RMSEA)	0.06	RMSEA<0.08
Goodness of fit index (GFI)	0.93	GFI>0.9
Adjusted Goodness of fit index (AGFI)	0.91	AGFI>0.9
Comparative fitness index (CFI)	0.98	CFI>0.9
Normalized fitness index (NFI)	0.95	NFI>0.9

The confirmatory factor analysis for cognitive emotion regulation

The confirmatory factor analysis was used in order to determine validity of cognitive emotion regulation. T-coefficients are reported in [Fig. 2]. With respect to LISREL output in [Table 4], value of X2/df was calculated 2.27; the existing X2/df value smaller than 3 indicates goodness of fit for the model. Likewise, Root Mean Square Error of Approximation (RMSEA) should be lesser than 0.08 where this value is 0.059 in the given model. The values of indices i.e. GFI, AGFI, CFI, and NFI should be also greater than 0.9 so that the given values are respectively higher than the determined level in the studied model. Therefore, data in this study are well- fitted to factorial structure of this scale and this expresses coordination of questions with variable of cognitive emotion regulation.
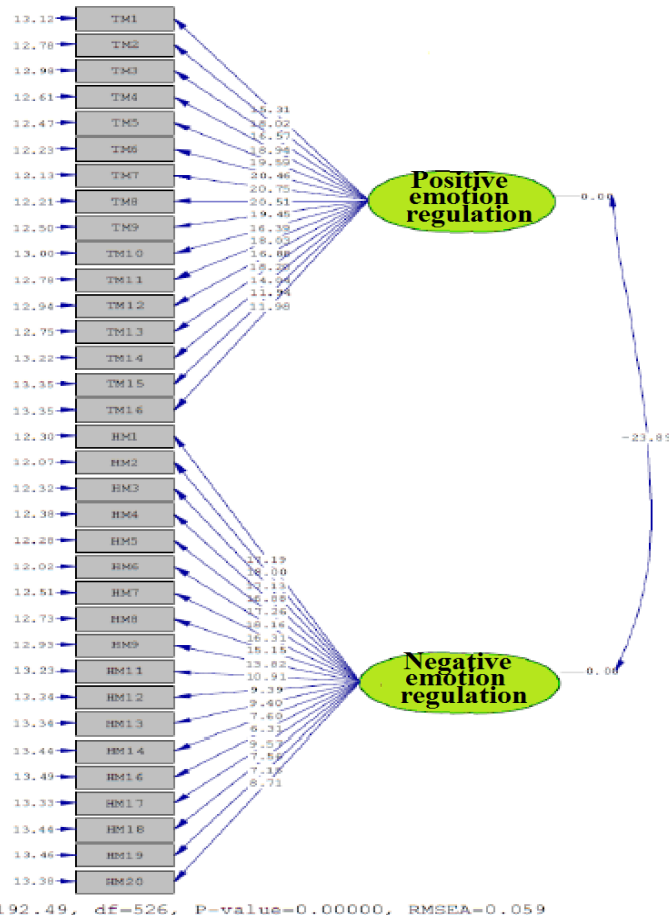
Chi-Square=1192.49, df=526, P-value=0.00000, RMSEA=0.059

Fig. 2: T-coefficients for variable of cognitive emotion regulation .

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Table 4: Fitness indices for scale of cognitive emotion regulation

Trait	Estimation	Criterion
Ratio of chi-square to degree of freedom (X^2/df)	2.27	X^2/df<3
Root mean square of error of approximation (RMSEA)	0.059	RMSEA<0.08
Goodness of fit index (GFI)	0.93	GFI>0.9
Adjusted Goodness of fit index (AGFI)	0.90	AGFI>0.9
Comparative fitness index (CFI)	0.97	CFI>0.9
Normalized fitness index (NFI)	0.95	NFI>0.9

Confirmatory factor analysis of aggression

The confirmatory factor analysis was adapted to determine validity of variable of aggression. In [Fig. 3], factorial loadings are reported. The path locating on paths are factorial loadings in which all of factorial loadings are higher than 0.3. With respect to LISREL output in [Table 5], value of X2/df was calculated 2.48; the existing X2/df value smaller than 3 indicates goodness of fit in this model. Similarly, Root Mean Square Error of Approximation (RMSEA) should be smaller than 0.08 where in the given model this value is 0.063. Values of indices of GFI, AGFI, CFI, and NFI should be also greater than 0.9 where these values are respectively greater than the determined level in the studied model. Thus, data of this study are well-fitted with factorial structure of this scale and this denotes coordination of questions with variable of aggression.
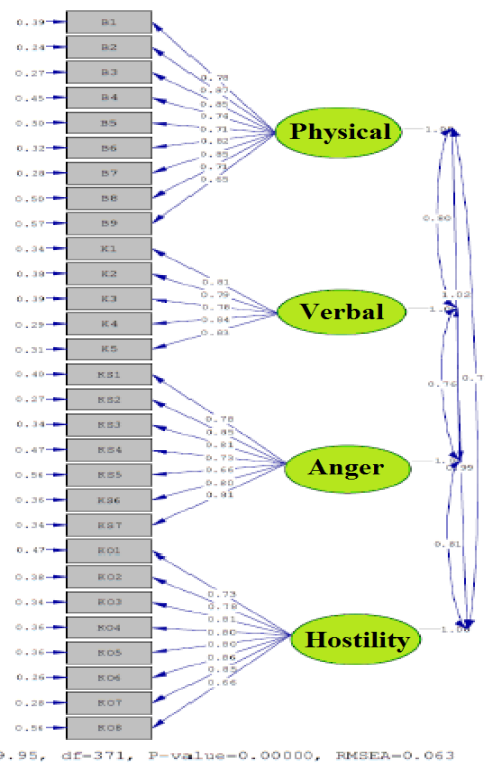
Chi-Square=919.95, df=371, P-value=0.00000, RMSEA=0.063

Fig. 3: LISREL output for variable of aggression.

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Table 5: Indices of fitness for scale of aggression

Trait	Estimation	Criterion
Ratio of chi-square to degree of freedom (X^2/df)	2.48	X^2/df<3
Root mean square of error of approximation (RMSEA)	0.063	RMSEA<0.08
Goodness of fit index (GFI)	0.94	GFI>0.9
Adjusted Goodness of fit index (AGFI)	0.92	AGFI>0.9
Comparative fitness index (CFI)	0.95	CFI>0.9
Normalized fitness index (NFI)	0.94	NFI>0.9

Correlation coefficient between variables

Pearson's correlation coefficient was used for recognition of relationship between current variables in this model. The findings derived from correlation coefficient among research variables were listed in [Table 6]. The findings indicate that coefficients of variables of post-thoughts of anger (r =-0.46), retaliatory thoughts (r = -0.50), anger related memories (r = -0.58), and recognition of reasons (r = -0.62) is correlated with positive emotion regulation negatively and significantly. The coefficient of variables of post-thoughts of anger (r = 0.52), retaliatory thoughts (r = 0.50), anger related memories (r = 0.49), and recognition of reasons (r = 0.50) is correlated with negative emotion regulation positively and significantly. The coefficient of positive emotion regulation is correlated with aggression (r = -0.58) positively and significantly. The coefficient of negative emotion regulation is correlated with aggression (r = 0.63) positively and significantly.

Table 6: Correlation matrix of research constructs

Variables	1	2	3	4	5	6	7
1. Post-thoughts of anger	1						
2. Retaliatory thoughts	0.70 **	1					
3. Anger related memories	0.55 **	0.57 **	1				
4. Recognition of reasons	0.61 **	0.64 **	0.64 **	1			

| 5. | Positive emotion regulation | -0.46 ** | -0.50 ** | -0.58 ** | -0.62 ** | 1 | | |
| 6. | Negative emotion regulation | 0.52 ** | 0.50 ** | 0.49 ** | 0.50 ** | -0.66 ** | 1 | |
| 7. | Aggression | 0.43 ** | 0.44 ** | 0.34 ** | 0.42 ** | -0.58 ** | 0.63 ** | 1 |

* p < 0.05 ** p < 0.01

The tested model plus standardized values are listed on each of paths in [Fig. 4]. The findings indicate that except the variables of post-thoughts of anger on positive emotion regulation and recognition of reasons do not significantly impact on aggression and the rest of coefficients are significant. T-coefficients of tested model are given to analyze significance of path coefficients in [Fig. 5]. Higher T- coefficients (±1.96 to ±2.58) are significant at level 0.05 while T-coefficients higher than ±2.58 are significant at level 0.01. In [Table 7], coefficients of direct and indirect and total effects and adjusted variance are given for research variables.
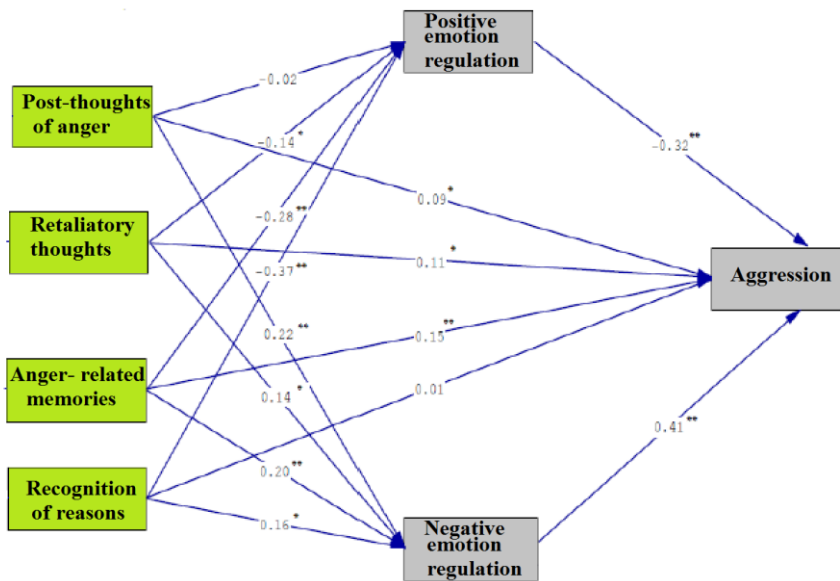
Chi-Square=24.27, df=11, P-value=0.00000, RMSEA=0.057

Fig 4: Standardized coefficients of tested model of research (* p< 0.05 ** p<0.01).

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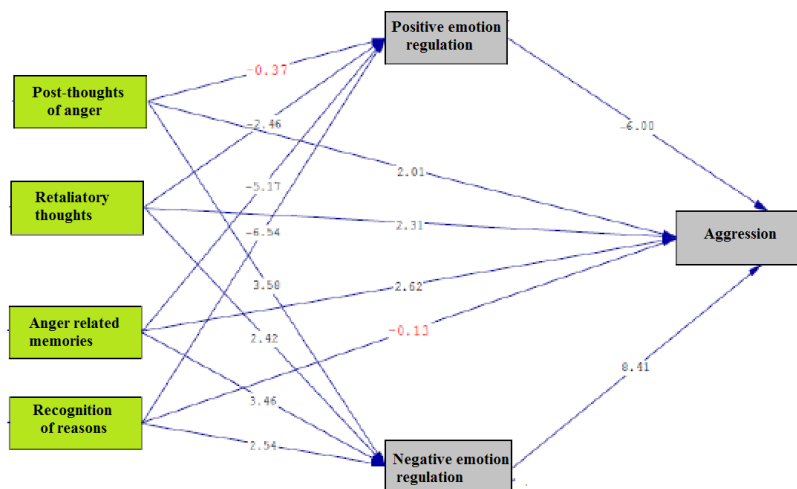
Chi-Square=24.27, df=11, P-value=0.00000, RMSEA=0.057

Fig. 5: T-coefficients of tested model of research (* p< 0.05 ** p<0.01).

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As it observed in [Table 7], the variables of post-thoughts of anger, retaliatory thoughts, anger related memories, and recognition of reasons impacts positively and significantly on negative emotion regulation. The retaliatory thoughts, anger related memories, and recognition of reasons have negative and significant effect on aggression but effect of recognition of reasons is not significant on aggression. Positive emotion regulation impacts negatively and significantly on aggression. Negative emotion regulation has positive and significant effect on aggression. Totally, 43% of variance of aggression, 44% of variance of positive emotion regulation, and 36% of variance of negative emotion regulation are interpreted by research model.

Table 7: Results of coefficients of direct, indirect, and total effects

Path	Direct effect	Indirect effect	Total effect	Interpreted variance
On aggression by				
Positive emotion regulation	-0.32 **	-	-0.32 **	
Negative emotion regulation	0.41 **	-	0.41 **	
Post-thoughts of anger	0.09 *	0.10 *	0.19 *	43%
Retaliatory thoughts	0.11 *	0.10 *	0.21 **	
Anger related memories	0.15 **	0.17 **	0.32 **	
Recognition of reasons	0.01	0.18 **	0.19 **	
On positive emotion regulation by				
Post-thoughts of anger	-0.02	-	-0.02	
Retaliatory thoughts	-0.14 *	-	-0.14 *	44%
Anger related memories	-0.28 **	-	0.28 **	
Recognition of reasons	-0.37 **	-	-0.37 **	
On negative emotion regulation by				
Post-thoughts of anger	0.22 **	-	0.22 **	
Retaliatory thoughts	0.14 *	-	0.14 *	36%
Anger related memories	0.20 **	-	0.20 **	
Recognition of reasons	0.16 *	-	0.16 *	

The fitness indices derived for tested model indicate in [Table 8] that RMSEA index (0.057) has reasonable level in the estimated model and other fitness indices (e.g. CFI, GFI, NFI, and AGFI) are totally at suitable level (0.96, 0.94, 0.94, and 0.93 respectively) and these traits of goodness of fit show the data in this study are well-fitted to factorial structure of this model.

Table 8: Fitness traits of the fitted model

Trait	Estimation	Criterion
Ratio of chi-square to degree of freedom (X^2/df)	2.21	X^2/df<3
Root mean square of error of approximation (RMSEA)	0.057	RMSEA<0.08
Goodness of fit index (GFI)	0.94	GFI>0.9
Adjusted Goodness of fit index (AGFI)	0.93	AGFI>0.9
Comparative fitness index (CFI)	0.96	CFI>0.9
Normalized fitness index (NFI)	0.94	NFI>0.9

Testing of research hypotheses

Hypothesis I: There is relationship among variables of post-thoughts of anger and aggression in adolescents.

The results of research indicated that the post-thoughts of anger had positive and significant effect on aggression. The results of present research are consistent with findings from [11], [12], [5]. Today, hostility and aggression are considered as a great problem of the world and an origin for many crimes, disorders, deviations, and even wars and also with its destructive psychological and physical effects at individual and social levels. Aggression is a disorder occurs among children and adolescents in different forms and a growing problem in adolescents. In this sense, anger rumination has been known as a factor that prepares

ground for many psychological disorders especially emotional disorders. Anger rumination causes reduction of self-control and consequently it is led to rise of aggression. Rumination is a coping method with negative temperament that includes self- focusing attention. According to theory of response styles, this technique is characterized by self-thinking. In addition, it comprises of passive and iterative focus on negative emotions. The ruminative thoughts are often related to negative thoughts that cause sadness and depression and increase aggression [13] and [14] and they lead to reduction of well-being [4]. Post-thoughts of anger are one of subscales of anger rumination. Those persons, who report high levels of post-thoughts of anger, possess specific characteristics; for example, after a quarrel, these persons continually dispute with that individual in their minds. Similarly, these individuals review their diaries about anger in their mind before going to sleep. When they experience anger, they think about it for a period of time. Even partial diaries may cause neurosis in these persons. Moreover, if a subject makes them angry they review it in their mind for several times. Thus, sum of these traits causes to increase aggression levels in these persons.

Hypothesis II: There is relationship among variable of retaliatory thoughts of anger rumination and aggression of adolescents.

The results of study showed that retaliatory thoughts had positive and significant effect on aggression. The results of research are consistent with the findings of [11], [12], and [5]. Anger rumination is an unavoidable and iterative phenomenon that appears during anger experience and it may be accompanied to assessment of past events. In other words, anger rumination is assumed as one type of thinking rumination styles that take place as involuntary and iterative process after experiencing of anger period. The persons who exercise anger rumination, they experience anger as subjective image with all of aggressive and fantastic details relating to revenge. Thus that person naturally shows more aggression. The evidences indicate that anger rumination improves negative emotion and it is led to exacerbation and continuity of aggression. Rumination about anger-raising events impacts on performance [13]. The studies on process of rumination about reality have examined recall or anger imagination and shown that rumination intensified aggression [15]. It increases aggressive behavior and reduces forgiveness and delays improvement in blood pressure [15]. Inter alia, retaliatory thoughts are one of the subscales of anger rumination. The persons who enjoy retaliatory thoughts at high level possess characteristics that lead to rise of aggression in them. They imagine about revenge for long period after a serious conflict. Similarly, these individuals have difficulty in forgetting the persons who injured them. In addition, these individuals imagine and dream about nature of anger and when someone makes them angry they could not stop thinking about how to take revenge from them. Therefore, presence of such characteristics causes increasing aggression in these individuals.

Hypothesis III: There is relationship among variable of anger rumination related memories and aggression in adolescents.

The results of research showed that anger rumination related memories had positive and significant effect on aggression. The results of research are consistent with findings from [11], [12], and [5].
Rumination is a fact in life of humans and normal experience for many people. Rumination includes behaviors and thoughts that passively focus person's attention on symptoms of depression and reasons for these symptoms [16]. Rumination is defined as passive and iterative focus on distress symptoms and description of these symptoms which are related to negative thoughts, failure, and depression. Thus anger rumination is tendency to thinking about events that make them angry over the time. [15] showed that rumination about an angry-raising event might increase aggression while it reduced absent-mindedness. Similarly, anger rumination increases aggression more than the specified period. Empirical studies indicate that the rumination play causal role in intensification of negative emotion and negative cognition. Compared to absent-mindedness, it causes sadness to increase negative thoughts and defective problem-solving ([15]. In general rumination is considered as maladaptive and it is involved in intensification and continuity of types of destructive consequences for health such as aggression [13], depression and Post-Traumatic Stress Disorder PTSD [15]. Among them, anger rumination related memories are one of the other subscales of anger rumination. The persons who report anger rumination related memories at high levels possess the characteristics which lead to increase aggression level in them. These individual are thinking a lot about unfair activities done against them and constantly think about the events made them angry for long time. Similarly, these persons think about the accidents already occurred and ones that make still them angry. Moreover, these persons feel sense of anger about specific objects in life and presence of such traits in them is led to rise of aggression level.

Hypothesis IV: There is relationship among variable of recognition of reasons of anger rumination and aggression of adolescents.

The results of study showed that anger rumination reasons had no significant effect on aggression. The results of current research are consistent with findings of [12] and [17]. Rumination is a response that may take place because of different events that occur in life of person or different emotions a person may exercise such as anger, depression or anxiety [18]. Rumination comprises of a class of conscious thoughts that are focused on the same subject and they may recur even in the absence of immediate environmental requirements needed for such thoughts. Rumination is the result of difference between individual goals and one's real status. The upper and lower levels of these objectives are linked together and therefore deprivation from trivial objectives may also lead to rumination. Rumination is iterative, unwanted and often abhorrent and it may obstruct human from focus on more important subjects. Recognition of anger

rumination reasons is one of the other subscales of anger rumination. Those persons who acquire high score in subscales of anger rumination have some characteristics; for example, they analyze the events that make them angry and there are some periods when they could not stop their mental preoccupation by specific conflict. Similarly, when someone makes these persons angry they surprise of this fact that this event constantly takes place for them. Nonetheless, despite of these features, results of present research indicated that anger rumination reasons had no significant effect on aggression and also anger rumination reasons was not led to rise of aggression.

Hypothesis V: There is relationship between variables of anger rumination and aggression with mediating role of cognitive emotion regulation (positive and negative) in adolescents.

The result of study indicated that post-thoughts of anger rumination had indirect positive and significant effect on aggression of adolescents. Thus, positive and negative cognitive emotion regulation plays mediating role in relationship among post-thoughts of anger rumination and aggression of adolescents. As a result it can be concluded that post-thoughts of anger rumination causes increase in aggression of adolescents through effect on cognitive emotion regulation among adolescents. In other words, post-thoughts of anger rumination may lead to reduction of positive cognitive emotion regulation and rise of negative cognitive emotion regulation and thus rise of aggression. Retaliatory thoughts have indirect positive and significant effect on aggression among adolescents. Therefore, positive and negative cognitive emotion regulation plays mediating role in relationship among retaliatory thoughts and aggression of adolescents. As a result, it can be mentioned that the retaliatory thoughts are led to rise of aggression in adolescents by effect on cognitive emotion regulation in adolescents. In other words, retaliatory thoughts are led to reduction of positive cognitive emotion regulation and rise of negative cognitive emotion regulation and consequently rise of aggression. Likewise, results of study showed that recognition of reasons had indirect positive and significant effect on aggression among adolescents. Therefore, positive and negative cognitive emotion regulation plays mediating role relationship among recognition of reasons and aggression in adolescents. As a result, it can be implied that recognition of reasons is led to rise of aggression of adolescents through effect on cognitive emotion regulation among adolescents. In other words, recognition of reasons is led to reduction of positive cognitive emotion regulation and increases of negative cognitive emotion regulation and thus raises aggression.

Results of testing research hypotheses are given in [Table 4].

Table 9: Results of testing research hypotheses

Hypotheses	-	Approval of hypothesis	Rejection of hypothesis
There is relationship among post-thoughts of anger rumination and aggression of adolescents.	-	Approved	-
There is relationship among retaliatory thoughts of anger rumination and aggression of adolescents.	-	Approved	-
There is relationship among anger rumination related memories and aggression of adolescents	-	Approved	-
There is relationship among recognition of reasons of anger rumination and aggression of adolescents.	-	-	Rejected
There is relationship among variables of anger rumination and with mediating role of cognitive emotion regulation (positive and negative) in adolescents.	Post-thoughts of anger rumination	Approved	-
	Retaliatory thoughts	Approved	-
	Anger-rumination related memories	Approved	-
	Recognition of reasons	Approved	-

CONCLUSION

Hypothesis I: There is relationship among post-thoughts of anger rumination and aggression in Adolescents. The results of study showed that post-thoughts of anger had positive and significant effect on aggression. **Hypothesis II:** There is relationship among retaliatory thoughts of anger rumination and aggression of adolescents. The results of study showed that retaliatory thoughts had positive and significant effect on aggression. **Hypothesis III:** There is relationship among anger rumination related memories and aggression in adolescents. The results of study indicated that anger rumination related memories had positive and significant effect on aggression. **Hypothesis IV:** There is relationship among recognition of reasons of anger rumination and aggression in adolescents. The results of study indicated that the reasons of anger rumination had no significant effect on aggression. **Hypothesis V:** There is relationship between variables of anger rumination and aggression by mediating role of cognitive emotion regulation (positive and negative) in adolescents. Thus, positive and negative cognitive emotion regulation plays mediating role in relationship among post-thoughts of anger rumination and aggression of adolescents. Similarly, results of study showed that recognition of reasons has indirect positive and negative effect on aggression in adolescents. Therefore, positive and negative cognitive emotion regulation plays mediating role in relationship among recognition of reasons and aggression of adolescents. As a result, it can be implied that recognition of reasons causes increase in aggression of adolescents by effect on cognitive emotion regulation of adolescents.

CONFLICT OF INTEREST
There is no conflict of interest.

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None

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