

## Original Article

## The Role of Traumatic Experiences and Cognitive Emotion Regulation Strategies in Predicting High-risk Behaviors among Adolescents

Mozhgan falahatdoost<sup>1</sup>, Fatemeh Barati<sup>2</sup>, Mobarakeh Ansari<sup>3</sup>, Zahra Mohammadi<sup>4\*</sup>

<sup>1</sup> PHD of Clinical Psychology, Student Research Committee, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.

<sup>2</sup> MSc of Clinical Psychology, Student Research Committee, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.

<sup>3</sup> MSc of Clinical Psychology, Department of Clinical Psychology, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.

<sup>4</sup> MSc of Clinical Psychology, Department of Clinical Psychology, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.

(\*Corresponding Author: Mohammadi Zahra, Email: Zahra.mohammadi412@gmail.com )

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### Abstract

**Introduction:** The goal of the present study was to investigate adolescents' tendency to engage in high-risk behaviors based on traumatic life experiences and adaptive and maladaptive emotion regulation strategies.

**Method:** A descriptive/correlational design was used. The participants included 220 adolescents (154 girls and 66 boys) who were selected among high-school students in Shiraz, using a convenience sampling method. The Traumatic Experiences Checklist (TEC), the Iranian Adolescents Risk-taking Scale (IARS), and the Cognitive Emotion Regulation Strategies Questionnaire (CERQ) were used collect data. The data were analyzed using descriptive statistics, Pearson correlation coefficient, and regression analysis.

**Results:** According to the results, among traumatic experiences, only emotional abuse ( $P < 0.001$ ), and among maladaptive cognitive emotion regulation strategies, only rumination ( $P < 0.001$ ) had a significant effect on high-risk behaviors. In addition, no significant relationship was found between adaptive cognitive emotion regulation strategies and tendency to engage in high-risk behaviors.

**Conclusion:** The results suggest that providing training on emotion regulation can help students select adaptive emotion regulation strategies in coping with high-risk situations.

**Declaration of Interest:** None.

**Key words:** High-risk behaviors, Traumatic experiences, Emotion regulation strategies.

### Introduction

High-risk behaviors are among the most important predictors of mortality, drug abuse, unprotected sex, mental health issues, nutrition, sleep, and psychical activity among adolescents [1]. Because of physical and psychological changes and a powerful desire to experience new things, adolescents are vulnerable to high-risk behaviors. Although high-risk behaviors are not limited to adolescents, these age groups are at a higher

risk to engage in such behaviors, therefore, many of the victims of high-risk behaviors are among adolescents [2]. 15-19 years old adolescents are more likely to engage in high-risk behaviors. In Iran, the prevalence of smoking cigarettes, hookah and drinking alcohol are higher in boys than in girls [3]; the most common age range at onset of smoking is 15-16 years for girls and 10-12 years for boys; and the most common age range at onset of

smoking hookah and drinking alcohol is 15-16 years for both girls and boys [4]. For about one century, psychologists have tried to identify contributing factors for high-risk behaviors among adolescents as behaviors increasing the likelihood of adverse physical, psychological, and social outcomes for this age group [2]. The literature is not consistent on the causes of high-risk behaviors, and different studies have proposed different causes for high-risk behaviors, including cognitive, emotional, environmental, social and family factors [5].

Among cognitive behaviors influencing high-risk behaviors are traumatic experiences. According to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), exposure to a traumatic event is consistent with the criterion A of posttraumatic stress disorder (PTSD). Symptoms of this disorder appear after exposure to actual or threatened death, serious injury, or sexual violence in the following ways: (1) direct exposure to the traumatic event, (2) witnessing the traumatic event happening to others, (3) learning that a family member or a close friend has been exposed to the traumatic event, and (4) repeated or severe exposure to aversive details of the trauma event (6). Studies have shown that drug abusers who have experienced a traumatic event and also survivors of traumatic events who have PTSD are at a higher risk to engage in high-risk behaviors than those who have never experienced a traumatic event [7-8]. Adolescents' tendency to engage in high-risk behaviors reflects their emotional and psychological problems experienced when being exposed to traumatic events. Therefore, it seems that the kind of strategy used to cope with traumatic situations, has a significant impact on tendency to engage in high-risk behaviors [5]. Thus, a possible variable influencing the relationship between traumatic events and tendency to engage in high-risk behaviors is emotion regulation.

Emotion regulation strategies can be defined as processes by which people can manage their emotions in terms of when to experience them and how to express them. Emotion regulation refers to the internal and external processes responsible for controlling, evaluating, and modulating our emotional reactions toward

achieving personal goals. Impairment in emotion regulation can make individuals vulnerable to depression and anxiety. People use different strategies to regulate their emotions. Some of these strategies are adaptive, such as positive refocusing after a breakup or modulation of emotions through writing them down, and some are maladaptive strategies, such as catastrophizing and rumination [9]. Research evidence has shown that those who use positive coping strategies, such as acceptance, positive refocusing, and positive reappraisal have a lower tendency to engage in high-risk behaviors [10]. In addition, those who experience more negative emotions are less likely to use adaptive emotion regulation strategies; therefore they may perceive pain more severely [11].

Considering that exposure to traumatic events and the kind of cognitive emotion regulation strategies used to cope with these events are important factors in the prediction of engaging in high-risk behaviors, the present study is aimed at exploring the role of these variables in the prediction of adolescents' tendency to engage in high-risk behaviors.

## ***Methods***

### **Participants and procedure**

A descriptive-correlational design was used. The statistical population included all high school students in Shiraz in the school year 2017-18. Among this population, a total of 250 students were selected using a convenience sampling method, based on the inclusion and exclusion criteria. Finally, due to attrition, a total of 220 students were included in the analyses. The inclusion criteria were as follows: aged 12-18 years, no serious psychiatric condition, and informed consent for participation in the study. The only exclusion criterion was lack of consent to participate in the study at any time. After making the necessary arrangements with the high school officials, students who met the inclusion criteria were selected as the study sample. Then, the instruments were administered to the participants. Before collecting the data, all the participants were reassured that their personal information remained confidential. In addition, the study

participants were told that they could quit the study at any time.

#### **Assessment tools**

**The Traumatic Experiences Checklist (TEC):** This is a self-report scale that assesses about 29 traumatic events consistent with the criterion A of PTSD in the DSM-5. Total scores on the TEC checklist, range from 0 to 29. It has 6 main subscales, including Emotional neglect, Emotional abuse, Sexual harassment, Sexual abuse, Bodily threat from a person, and Physical abuse [12]. A Cronbach's alpha of 0.86 and a test-retest reliability of 0.91 have been reported for the TEC. In addition, a concurrent validity of 0.77 has been reported between the TEC and the Stressful Life Events Screening Questionnaire (SLESQ) [13]. A Cronbach's alpha of 0.62 has been reported for the checklist in the Iranian population [14]. In the present study, a Cronbach's alpha of 0.82 was found for the TEC.

#### **The Iranian Adolescents Risk-taking Scale (IARS):**

This scale was designed according to the cultural aspects and social limitations of the Iranian population, based on two other scales: The Adolescent Risk-Taking Questionnaire (ARQ) and the Youth Risk Behavior Survey (YRBS). It has 39 items assessing adolescents' vulnerability to engage in 7 categories of high-risk behaviors, including reckless driving, violence, smoking, drug abuse, alcohol abuse, hookah use, and sexual attraction towards opposite-sex and sexual intercourse. The items are rated on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). A Cronbach's alpha of 0.94 has been reported for the total scale, and the following alphas have been found for the subscales: 0.74 for Reckless driving, 0.78 for Violence, 0.93 for Smoking, 0.90 for Drug abuse, 0.90 for Alcohol abuse, 0.83 for Sexual attraction towards opposite-sex, and 0.87 for Sexual intercourse [15]. In the present study, a Cronbach's alpha of 0.98 was found for the total scale.

#### **The Cognitive Emotion Regulation Strategies Questionnaire (CERQ):**

This questionnaire was developed by Garnefski et al. (2001) to assess the use of cognitive strategies after negative experiences.

It has 36 items that are rated on a 5-point Likert-type scale ranging from 1 (always) to 5 (Never) [16]. The CERQ assesses 9 cognitive emotion regulation strategies: Self-blame, Blaming others, Rumination, and Catastrophizing as maladaptive strategies; and Acceptance, Refocus on planning, Positive refocusing, Positive reappraisal, and Putting into perspective as adaptive ones. Total scores range from 36 to 180. The CERQ can be administered to normal and clinical populations aged over 12 years [17]. Cronbach's alphas from 0.77 (for Acceptance) to 0.93 (for Positive refocusing) have been reported for the 9 strategies [18]. In the Iranian population, Cronbach's alphas of 0.72, 0.69, and 0.90 were found for adaptive strategies, maladaptive strategies, and the total scale, respectively [19]. In the present study, an alpha of 0.71 was found for the total scale. The data analyses were conducted by using Pearson correlation coefficient, and regression analysis via SPSS, version 22.

#### **Results:**

A total of 220 high school students (154 girls and 66 boys, aged 13-17 years (Mean=14.62, SD=1.45) participated in the present study. The means, standard deviations, and correlations between the study variables are shown in Tables 1, 2, and 3.

High-risk behaviors were significantly correlated with the following maladaptive cognitive emotion regulation strategies: Blaming others ( $r=0.229$ ,  $P<0.001$ ), Rumination ( $r=0.183$ ,  $P<0.001$ ), and Catastrophizing ( $r=0.195$ ,  $P<0.001$ ), but no significant relationship was found between high-risk behaviors and adaptive cognitive emotion regulation strategies. In addition, high-risk behavior was significantly correlated with emotional neglect ( $r=0.196$ ,  $p<0.001$ ) and emotional abuse ( $r=0.248$ ,  $P<0.001$ ).

The multiple regression analysis using the Enter method was employed to examine the impact of adaptive and maladaptive cognitive emotion regulation strategies and traumatic life events on high-risk behaviors; the results showed that among traumatic life events, only emotional abuse, and among maladaptive cognitive emotion regulation strategies, only

rumination had a significant effect on high-risk behaviors (Table 4). In other words, after controlling the other variables, 0.265 and 0.205 points increase in the Emotional abuse and Rumination scores, respectively, is associated with 1 point increase in the high-risk behaviors score. No significant

relationship was found between adaptive cognitive emotion regulation strategies and high-risk behaviors.

Table 1. Means and standard deviations for high-risk behaviors, cognitive emotion regulation strategies and traumatic events

Variables	Mean	SD
<b>High-risk behaviors</b>	103.03	47.55
<b>Blaming others</b>	9.56	2.93
<b>Self-blame</b>	10.56	3.02
<b>Rumination</b>	11.79	3.34
<b>Catastrophizing</b>	9.81	3.70
<b>Acceptance</b>	11.80	3.05
<b>Refocus on planning</b>	13.32	3.69
<b>Positive refocusing</b>	11.56	3.46
<b>Positive reappraisal</b>	13.10	3.86
<b>Putting into perspective</b>	11.14	3.14
<b>Emotional neglect</b>	0.41	0.78
<b>Emotional abuse</b>	0.30	0.60
<b>Physical abuse</b>	0.14	0.40
<b>Bodily threat from a person</b>	0.15	0.42
<b>Sexual harassment</b>	0.05	0.26
<b>Sexual abuse</b>	0.05	0.25

Table 2. Pearson correlation coefficients between high-risk behaviors and adaptive and maladaptive cognitive emotion regulation strategies

Variables	1	2	3	4	5	6	7	8	9	10
<b>High-risk behaviors</b>	1									
<b>Blaming others</b>	0.229 **	1								
<b>Self-blame</b>	0.010	0.180 **	1							
<b>Rumination</b>	0.183 **	0.277 **	0.457 **	1						
<b>Catastrophizing</b>	0.195 **	0.440 **	0.425 **	0.379 **	1					
<b>Acceptance</b>	0.010	0.108	0.291 **	0.288 **	0.266 **	1				
<b>Refocus on planning</b>	-0.011	0.016	0.216 **	0.365 **	-0.117	0.240 **	1			
<b>Positive refocusing</b>	-0.010	- 0.057	- 0.003	0.121	-0.025	0.138* **	0.460 **	1		
<b>Positive reappraisal</b>	0.012	- 0.047	0.082 **	0.224 **	- 0.155*	0.270 **	0.722 **	0.461 **	1	
<b>Putting into perspective</b>	0.132	0.236 **	0.270 **	0.270 **	0.150* **	0.329 **	0.360 **	0.258 **	0.354 **	1

Table 3. Pearson correlation coefficients between high-risk behaviors and traumatic life events.

Variables	1	2	3	4	5	6	7
<b>High-risk-behaviors</b>	1						
<b>Emotional neglect</b>	0.196 **	1					
<b>Emotional abuse</b>	0.248 **	0.457 **	1				
<b>Physical abuse</b>	0.094	0.301 **	0.320 **	1			
<b>Bodily threat from a person</b>	0.026	0.192 **	0.294 **	0.032	1		
<b>Sexual harassment</b>	0.025	0.067	0.065	0.350 **	0.129	1	
<b>Sexual abuse</b>	0.024	0.033	0.105	0.367 **	0.139*	0.900 **	1

Table 4. Regression analysis for predicting high-risk behaviors based on cognitive emotion regulation strategies and traumatic life events

Variables	R	Adjusted R	SE	Beta	T	Sig.
<b>Emotional abuse</b>	0.32	0.09	5.04	0.265	4.11	0.0001
<b>Rumination</b>			0.91	0.205	3.18	0.002

### Discussion

The goal of the present study was to examine whether experiencing traumatic events during childhood and the kind of emotion regulation strategies used to cope with traumatic events could predict tendency to engage in high-risk behaviors among adolescents. Consistent with the findings of previous studies, the study results indicated that among traumatic life events, only emotional abuse, and among maladaptive cognitive emotion regulation strategies, only rumination significantly predicted adolescents' tendency to engage in high-risk behaviors [20-24].

Research evidence has shown that abuse experiences during childhood can have long-lasting impacts on the all aspects of life and mental health of a person [20]. It is possible that abuse experiences during childhood can make adolescents believe that they are not likeable and that the world is not a safe place [21]. These false beliefs can make the adolescent prone to mental disorders, including antisocial personality disorder or other behavioral problems, such as engaging in high-risk behaviors [22]. Individuals who have experienced emotional abuse during childhood may use high-risk behaviors as an emotion regulation strategy. In fact, it seems that these individuals feel a tendency to engage in high-

risk behaviors due to their emotion regulation problems [23]. Previous studies have shown that high-risk behaviors are most likely to be engaged in situations where an intense negative emotion is experienced, as a way to separate the self from the negative emotion or to reduce it, because high-risk behaviors can temporarily create a sense of pleasure that can lead to a higher tendency to engage in high-risk behaviors in the future situations [24].

According to the study results, designing interventions focused on teaching adolescents with traumatic experiences (such as emotional neglect or emotional abuse) how to use adaptive emotion regulation strategies and reduce their use of maladaptive emotion regulation strategies can be helpful in reducing high-risk behaviors, such as drug abuse or unprotected sex, among this age group. In fact, our findings show that traumatic experiences during childhood may increase the likelihood of engaging in high-risk behaviors during adolescence; therefore, designing preventive interventions targeting children and their families can be useful in reducing adolescents' tendency to engage in high-risk behaviors.

The present study had some limitations. First of all, the instruments used to gather data were all self-report scales, therefore prone to social desirability response bias. Second, the study

sample only included 66 boys that can limit the generalizability of the study results. Future studies on this topic are suggested to use equal numbers of both genders in their samples.

In overall, the study results indicated that traumatic life events, such as emotional abuse, and cognitive emotion regulation strategies, like rumination can significantly predict tendency to engage in high-risk behaviors. The results can help researchers and clinicians in developing interventions based on emotion regulation to prevent adolescents with traumatic experiences from engaging in high-risk behaviors.

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