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## **The relationship of resilience and social support with post-traumatic growth: The mediating role of emotion regulation strategies**

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**Abstract**---The current research design was descriptive-correlation research. The statistical population of the research includes all the children of the witness families living in the border provinces of Iraq, which was selected based on Morgan's table, a sample of 250 people was available. The data were collected using the social support scale, flexibility of emotion regulation strategies and post-traumatic growth scale and were tested and analyzed using the Pearson correlation method and structural equation model in SPSS24 and AMOS24 software. The results showed, there was a direct and significant relationship between social support and resilience with post-traumatic growth. Also, emotion regulation strategies indirectly mediated the effects of resilience and social support on post-traumatic growth. It is suggested to pay attention to resilience training, emotion regulation and support for people who have experienced trauma.

**Keywords**---resilience, post-traumatic growth, emotion regulation strategies, social support.

## Introduction

During his social life, human beings always experience many and various traumatic events directly and indirectly, therefore, trauma is considered an inseparable part of human life <sup>(1)</sup>. In particular, the experience of war causes several negative results for the victims and creates stress for people from various psychological, sociological, political and economic aspects, which is different from other traumatic experiences <sup>(2)</sup>. Martyrdom, injury, disability and disappearance of fighters leave many psychological complications and effects on their families and children <sup>(3)</sup> and it makes them more vulnerable to mental disorders such as anxiety disorders, depression and post-traumatic stress disorder <sup>(4)</sup>. Despite all the negative consequences of wars, sometimes exposure to trauma leads a person to a positive outcome, which is known as post-traumatic growth <sup>(5)</sup>. Based on Tedeschi and Calhoun's (1994) researches, post-traumatic growth (PTG) has been described differently as a gain, growth and flourishing related to stress, during which a person tries to reconstruct his mental and psychological self with the help of his abilities and facilities. It aims to return to ideal conditions <sup>(6)</sup>. The changes caused by post-traumatic growth, such as increasing the value of life and priorities and increasing spirituality, are both intrapersonal and interpersonal, such as improvement in interpersonal relationships with family members and friends, increased expressiveness and self-disclosure <sup>(6,7)</sup>.

Previous research has shown that post-traumatic growth is more associated with life-threatening traumas, injuries, and illnesses than with other types of trauma such as separation trauma or financial losses <sup>(8,9)</sup>. The development of PTG, following adversity, by countless processes such as re-experiencing, focusing on the perceived positive benefits of life trauma <sup>(10)</sup>, adjusting life priorities, and adopting a healthy lifestyle <sup>(11)</sup> is supported. As a result, both intrapersonal and interpersonal factors play a significant role in the occurrence of post-traumatic growth <sup>(12)</sup>.

It seems that resilience is one of the psychological variables within an individual that is related to post-traumatic growth <sup>(13)</sup>. Researchers have defined resilience as a process, ability or outcome of successful adaptation to threatening environmental conditions, which plays an important role in dealing with stresses and threats to life and its adverse effects <sup>(14)</sup>. It is important to pay attention to resilience in a context dominated by trauma, adversity, and hardship, because resilient people have the capacity for positive experiences and emotions and can delay experiences of disruption in their daily functioning <sup>(12)</sup>. In addition, the impact of resilience on adverse experiences can also increase the richness of studies <sup>(15)</sup>. Although PTG is often associated with stress symptoms, resilience is negatively associated with stress symptoms and promotes individual well-being. Because of their distinct association with stress symptoms, the relationship between PTG and resilience has been ambiguous <sup>(16)</sup>.

Another variable that can play a role in promoting the process and outcome of post-traumatic growth is social support <sup>(17)</sup>. Social support can be defined as the availability of people to rely on or the amount of help received through interaction with others <sup>(18)</sup>. Social support is known as the strongest and most powerful coping forces for people to face successfully and easily when dealing with stressful

situations, and it facilitates the tolerance of problems for people, and people who have more social support show high mental health <sup>(19)</sup>. Social support is a key environmental resource for understanding positive changes in response to life crises. As a leading factor in personal growth, this factor promotes positive behaviors and leads to successful adaptation following negative events <sup>(20)</sup>. However, it is necessary to further investigate the relationship between social support and PTG in people who have experienced trauma <sup>(21)</sup>.

According to the findings of Calhoun and Tedeschi, People who face an accident use emotion regulation strategies to make that event bearable, and in the meantime, adaptive strategies cause people to face negative events and prevent them from becoming victims and surrendering to accidents <sup>(22)</sup>. Empirical evidence suggests that emotion regulation strategies that are activated following a trauma may be effective mediators of variables such as social support and resilience in post-traumatic growth <sup>(13, 23)</sup>. The study of Nishi, Matsuoka and Kim <sup>(24)</sup> shows that the two components of personal strength and new possibilities of post-traumatic growth have a strong relationship with resilience, which is one of the consequences of achieving positive emotion regulation strategies. Also, people who are more inclined to use adaptive emotion regulation strategies in the face of stressful situations, experience more resilience, which will ultimately lead to post-traumatic growth <sup>(25)</sup>. On the other hand, the use of ineffective strategies are negatively predictive of resilience, while adaptive strategies are positively predictive of resilience <sup>(26)</sup>. Social support also causes personal growth under the influence of emotional strategies <sup>(27)</sup>. For the relationships that are formed between the person experiencing trauma and family members and friends, supports are provided for the person, and the amount and way of realizing these supports may be different according to the cognitive emotion regulation strategies that people take <sup>(28)</sup>.

Considering the inevitable occurrence of accidents and incidents in human life, it seems necessary to lay the groundwork for transforming the stressful consequences of post-traumatic stress disorder into post-traumatic growth. In particular, people who have experienced war-related hardships are good candidates for promoting post-traumatic growth. Because Iraq has been involved in various wars. The children of Iraqi martyrs and martyrs worry about the future and also review the past, and this review of the past or worry about the future is associated with many mental problems and disorders <sup>(29)</sup>. Therefore, it is very important to identify and study the factors affecting the adaptation and growth after the accident among the survivors. therefore, the researcher's main concern is to investigate the relationship between resilience and social support with post-traumatic growth, considering the mediating role of emotion regulation strategies in children of Iraqi witnesses.

## **Materials and Methods**

The current research design is one of descriptive-correlational research. The statistical population of the research includes all the children of witnesses of families living in the border provinces of Iraq, whose number was 3274 according to the statistics obtained from the Martyrs Organization of Iraq in 2021. Based on Morgan's table, a sample of 250 people between the ages of 15 and 30 was

selected from among the research population. The criteria for entering the study include children who have experienced a severe bereavement such as the loss (martyrdom) of a loved one such as a father or mother in the last two years and have a file in the Shahid Foundation.

## **Data Collection Tools**

### **Posttraumatic Growth Inventory (PTGI)**

The PTGI measures the level of posttraumatic growth in persons who have survived a traumatic event <sup>(30)</sup>. It consists of 21 items, each of which falls under one of the five factors: (1) relating to others, (2) new opportunities, (3) personal strength, (4) spiritual change and (5) understanding of life. Participants are asked to indicate the degree to which they have or have not experienced a particular change using a scale ranging from 0 to 5. A higher score indicates a higher level of posttraumatic growth. Examples of items: (1) I'm more aware that I can handle difficulties, (2) I'm putting more effort into my relationships or (3) I've found out how great people are. The PTGI does not measure specific changes in behavior, but subjectively evaluated changes in the concept of the world, relationships with other people, and the self. The Slovak version of the PTGI was created by two independent experts in the field of psycho traumatology and one psychologist, then back-translated into English by a licensed translator. All versions were compared and discussed and a consensus on the final version was reached. The reliability of the whole scale (one-factor) was  $\omega_{\text{total}} = 0.98$ , while the reliabilities of the subscales ranged from  $\omega_{\text{total}} = 0.86$  to 0.96. in the study of Seyed Mahmoudi et al <sup>(31)</sup> in Iran, the factor structure of this questionnaire was investigated on Iranian students. The reliability coefficient of the questionnaire with a time interval of one week was 0.94 and Cronbach's alpha was 0.92 for the whole scale.

### **Connor-Davidson Resilience scale (CD-RISC)**

This scale was prepared by Connor and Davidson <sup>(32)</sup>. The producers of this scale are of the opinion that this questionnaire was well able to separate resistant people from non-resilient ones in clinical and non-clinical groups and can be used in research and clinical situations. Connor and Davidson's resilience questionnaire has 25 items that are scored on a Likert scale between zero (completely false) and five (always true). In this questionnaire, to obtain the overall score of the questionnaire, the total points of all the questions are added together and this score ranges from 0 to 100. The higher the score, the more resilient the respondent is. Connor and Davidson reported Cronbach's alpha coefficient of resilience scale as 0.89. Also, the reliability coefficient obtained from the retest method in a 4-week interval was 0.87. Also, Connor and Davidson's resilience scale scores had a significant positive correlation with the stubbornness scale scores and significant negative correlation with the perceived stress scale scores and Sheehan's stress vulnerability scale, which indicates the concurrent validity of this scale <sup>(33)</sup>.

### **Multidimensional Perceived Social Support Scale (MSPSS)**

This scale performs a subjective assessment of the adequacy of social support, which was designed by Zimet et al <sup>(34)</sup>. This scale measures perceptions of the adequacy of social support in three sources (family, friends, and significant others). It includes 12 questions. Each question is graded on a five-point spectrum from completely disagree (1) to completely agree (5). The reliability of the questionnaire for the three mentioned sources was between .85 and .91 and the whole questionnaire was 0.88. Divergent validity had a significant negative correlation with depression questionnaire (34). Several studies have studied its factor structure in different populations such as university students, normal adult population and people with chronic diseases, which show excellent psychometric properties. This scale has been translated into different languages and adapted to socio-economic conditions in different countries <sup>(35)</sup>.

### **Emotion Regulation Questionnaire (ERQ)**

The emotion regulation questionnaire was developed by Gross in 2003. This questionnaire is a 10-item measure of two emotion regulation strategies, cognitive reappraisal and expressive suppression. 6 items evaluate the re-evaluation strategy and 4 items evaluate the suppression strategy. Each item includes a 7-point Likert scale (completely disagree to completely agree). Gross has reported the validity and reliability of the above questionnaire with an internal consistency coefficient of 0.73 and a retest coefficient of 0.69 for both strategies <sup>(36)</sup>.

### **Data analysis**

The participants were evaluated according to the principle of confidentiality and informed consent. The data obtained from the research were tested and analyzed using Pearson's correlation method and the structural equation model in SPSS24 and AMOS24.

### **Results**

The participants in the present study were children of Iraqi witnesses. Their demographic information is shown in Table 1.

Table1 Demographic information

Gender	Frequency	Mean age	Percentage
Male	133	19.6	53.2
Female	117	18.2	46.8
Total	250	18.9	100

Table 2 shows the mean, standard deviation and correlation between the variables.

Table 2. Descriptive Statistics and Correlation Coefficients

Variable	M	SD	(1)	(2)	(3)	(4)
Post-Traumatic Growth	52.89	3.68	1.000			
Resilience	78.69	5.66	0.543***	1.000		
Social Support	43.41	2.81	0.575***	0.251*	1.000	
Emotion Regulation Strategies	46.63	1.64	0.391**	0.468***	0.196*	1.000

The contents of Table 2 show that there is a significant correlation between all variables ( $p < .05$ ).

Table 3. Goodness indicators of fitting the proposed research model

Fit Indexes	$\chi^2$	$\chi^2/df$	RMSEA	CFI	GFI	IFI	AGFI	p
Model's Fit Indexes	2.21	1.32	.031	.96	.92	.95	.98	.32

As it is clear in table 3, the chi-square index value of 2.21 is not significant. The chi-square ratio on the degree of freedom (1.32) is within the acceptable range of the fit (1 to 3) and is acceptable. Comparative fit indices, CFI, GFI, IFI, AGFI (acceptable distance, greater than 0.9) indicate the fit of the data with the original model. Also, the value of 0.03 for the RMSEA index (acceptable value: less than 0.08) means the fit of the data with the model and its final approval. So, the fit indices of the proposed model have a good and acceptable fit with the data.

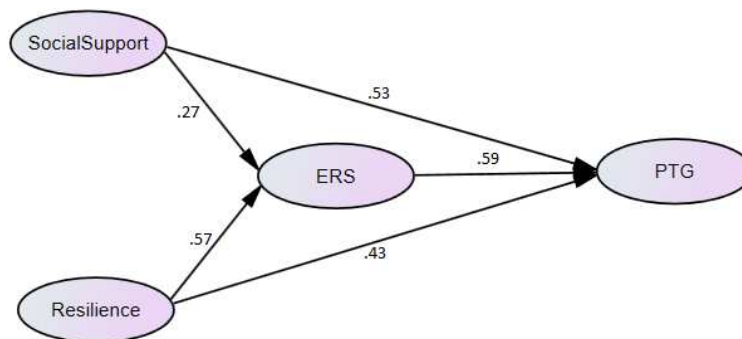


Figure 1. Research model and results of test of hypotheses

Table 4. Direct, indirect and total effect for path analysis

predictor variables	Mediator	Dependent Variable	Direct Effect	Indirect Effect	Total Effect
Social Support	ERS	PTG	.53***	.16*	.69***
Social Support	ERS		.27**		
Resilience	ERS	PTG	.43***	.34**	.77***
Resilience	ERS		.57***		

Bootstrap command was used in AMOS software to estimate and determine the significance of paths. Table 4 shows the standard direct and indirect coefficients and the total effect of the variables in the model. As can be seen, the direct effects of social support and resilience variables on post-traumatic growth are positive and significant. Also, social support and resilience through emotion regulation strategies have a significant indirect effect on post-traumatic growth. Therefore, the research hypothesis is confirmed.

## Discussion

The present study was conducted with the aim of investigating the mediating role of emotion regulation strategies in the relationship between social support and resilience with post-traumatic growth. The results showed that there was a direct and significant relationship between social support and post-traumatic growth. Also, emotion regulation strategies significantly mediate the relationship between social support and post-traumatic growth. These findings are consistent with the results of Tedeschi, Calhoun (22, 30), Ahmadi et al. (13) and other studies (17-21).

Among all the factors associated with PTG, social support is one of the ones suggested by theoretical models of PTG. Organismic appraisal theory (37) suggests that social support can be an affective-cognitive process to reconstruct a new belief system, which informs about the trauma towards the development of another recent model, the social context framework, which suggests that Significant social interactions in themselves can directly lead to positive changes after adversity and trauma (38). According to Tedeschi and Calhoun (22), through seeking help from others and self-disclosure, people discover positive aspects of trauma that they are not aware of. Social support increases between people who share their experience, victims have more trust and acceptance than those who have experienced the same trauma, and they are more likely to be willing to self-disclose, this self disclosure provides shared social support that may help affected individuals acquire new schemas, allowing them to see things from other, more helpful, and adaptive perspectives (39).

According to meta-analyses (40), social support is considered as a predictor of post-traumatic growth in adults, which can increase the effectiveness of coping strategies that have positive outcomes. it has. In fact, people who seek support from others are more likely to use active coping strategies. So, it can be said that post-traumatic growth is not directly the result of the accident itself, but the type of reaction and coping strategy that a person uses to deal with the accident determines post-traumatic growth or post-traumatic stress disorder. (41). Helgeson et al. (42) showed that positive reappraisal and acceptance have a positive relationship with post-traumatic growth, while the relationship of post-traumatic growth with catastrophizing, self-blame and others was negative. According to the post-traumatic growth theory, when faced with a traumatic event, people must adjust their basic assumptions about themselves, others, and the world according to the event. It is also necessary to face the distressing feelings caused by the traumatic event in order to achieve meaning (43). In this process, cognitive reappraisal may lead to understanding the meaning of that event in life, making more informed choices, ultimately reducing the negative consequences of the traumatic event and relief of post-traumatic symptoms (44);

while negative beliefs lead to negative physical and mental reactions. Also, when people suppress their emotions and ruminate, symptoms After trauma, more depression and social anxiety and more negative emotions develop <sup>(45)</sup>. Social support protects him from traumatic situations with the help of cognitive emotion regulation strategies that a person uses. Perceived social support by promoting adaptive strategies such as cognitive reappraisal can divert the attention of the affected people from the negative and traumatic aspects and keep them focused on the positive aspect. Then this possibility is created for vulnerable people so that they can change their self-perception and interpersonal relationships and find the meaning of the world after injury and trauma, so that growth after injury can be realized <sup>(46)</sup>.

Another finding of the research showed that resilience has a positive and significant relationship with post-traumatic growth both directly and indirectly through emotion regulation strategies. This finding is consistent with the research results of Adjorlolo et al <sup>(12)</sup>, Ahmadi and Mehrabi <sup>(13)</sup>, Zadafshar et al. <sup>(46)</sup> and Finstad et al. <sup>(47)</sup>. that the ability to adapt to unpleasant situations and recover quickly from trauma through resilience structures, PTG and coping strategies has been studied. Many researches indicate that the variable of resilience as a dynamic process makes people face stressful issues in life in an appropriate way <sup>(12, 47)</sup>. Resilience gives people the ability to face problems and even consider these situations as an opportunity to improve and grow their personality <sup>(48)</sup>. Resilience includes the ability to adapt to an unpleasant and dire situation, which indicates its importance as a type of personality factor that protects people in stressful situations. High resilience seems to be a protective factor against psychological problems, By embracing psychological resilience, we face the world with exploration and openness and are better able to respond to events in favor of our chosen values. <sup>(49)</sup>.

Greup et al. <sup>(50)</sup>, reviewed thirteen articles on resilience and post-traumatic growth and found that patients who had higher resilience also reported higher post-traumatic growth. In explaining this relationship, they state that stress is one of the important factors that prevent people from reaching growth after an accident, and resilience by protecting a person from stress provides the basis for growth and excellence in stressful conditions. In fact, the existence of resilience causes people to evaluate events as positive and controllable and not to get confused when faced with difficulties related to difficult experiences. Compared to people who have low resilience, resilient people perceive the situation as less stressful, feel less helpless and actively try to adapt and solve problems. As a result, with this feature, they will have more opportunities to achieve growth after the accident <sup>(51)</sup>.

The present study has several limitations. First of all, the studied sample of martyrs' families has a specific culture from Iraq, which limits the possibility of generalizing the results to other people. The data collection tool is self-reported. For this reason, there are no problems and biases in answering. It is necessary to conduct more research with longitudinal methods and experimental design in order to determine the real cause and effect relationships. In terms of practical importance, as shown in this study. Social support and resilience can facilitate post-traumatic growth in victims' families through emotion regulation strategies,

therefore, support for the victims and training for resilience and emotion regulation should be considered.

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