The relationship between resilience, social support and post-traumatic growth among children of Iraqi martyrs: A cross-sectional study

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Abstract

The aim of the present study was to the relationship between resilience, social support and post-traumatic growth among children of Iraqi martyrs using a descriptive-correlation method. From the statistical population of the study, which included all the children of Iraqi families living in the border provinces of Iraq, 250 children were selected as the research sample using the convenience sampling method. The participants completed the resilience (RQ), social support (MSPSS) and post-traumatic growth (PTG) questionnaires. The obtained data were analyzed using Pearson's correlation and standard regression statistical methods in spss24. The results showed that there was a positive and significant correlation between resilience and social support

with post-traumatic growth in children of Iraqi martyrs (P<0.01). Also, resilience variable can uniquely explain 19% and social support 27% of post-traumatic growth variance. Based on the findings, it is suggested to pay attention to resilience training and social support for children who have experienced trauma.

Keywords: post-traumatic growth, trauma, resilience, social support.

Introduction

More than 70% of people worldwide experience a traumatic event during their lifetime (Benjet et al., 2016). Post-traumatic stress disorder (PTSD) is the problem most associated with exposure to traumatic events (Lee et al., 2020). PTSD is associated with greater levels of prior trauma exposure, neuroticism, rumination, behavioral disengagement, inflexible emotion regulation, and reduced mental health, functional impairment, suicidality, and physical health problems (Miller et al., 2020; Wild et al., 2016). In particular, the experience of war brings many negative results for the victims and leaves many psychological effects on their families and children, making them more vulnerable to mental disorders such as anxiety disorders, depression and post-traumatic stress disorder (Henkelmann et al., 2020; Şimşir et al., 2021).

While the negative consequences of trauma have received the most attention, the literature on post-disaster mental health and trauma research has shown that traumatic experiences, despite negative consequences, can even lead to positive emotional states and post-traumatic growth (Finstad et al. al., 2021). According to the researches of Tedeschi and Calhoun, the phenomenon of reaching a higher level of psychological functioning after an unfortunate event is known as post-traumatic growth, during which a person, with the help of his abilities and facilities, tries to reconstruct himself mentally and psychologically in order to return to the conditions makes ideal (Calhoun & Tedeschi, 2012). Research has shown that trauma survivors with PTSD show more PTG than those without PTSD (Schubert et al., 2016), and that PTG develops following adversity by myriad processes such as re-experiencing, focusing on the positive benefits of perception. supported by life injuries (Jin et al., 2014), setting life priorities, and adopting a healthy lifestyle (Mehrabi et al., 2015). However, other studies have reported a negative correlation between PTSD symptoms and PTG (Ai et al., 2005). More detailed research has shown that the relationship between the severity of PTSD symptoms and PTG is an inverted U

relationship (Shakespeare-Finch & Lurie-Beck, 2014; Tsai et al., 2015; Bayrami et al., 2012). Thus, there is likely to be an optimal intermediate level at which posttraumatic stress enhances PTG. Thus, the relationship between post-traumatic stress symptoms (PTSS) and PTG is unclear, and more research is needed to answer these contradictions and shortcomings (Marziliano et al., 2020).

It seems that resilience is one of the psychological variables that is related to post-traumatic growth (Brooks et al., 2020). Researchers have defined resilience as the process, ability or outcome of successful adaptation to threatening environmental conditions, which plays an important role in dealing with stress and threats to life and its adverse effects (Vella & Pai, 2019). So that people who have high resilience are more likely to achieve a positive meaning while experiencing stressful situations and more effectively face the challenges of their lives and adapt themselves to the stresses of their lives and even become healthier and more successful people in the future (Thakur & Cohen, 2022; Heshmati, & Ghorbani, 2016). Although resilience can be considered a PTG-enhancing factor, it may also enhance resistance to negative emotions and promote a "return" to baseline levels of post-traumatic functioning rather than growth. So the relationship between PTG and resilience is ambiguous (Pięta & Rzeszutek, 2023).

Another variable that can play a role in promoting the process and growth after the accident is social support (Wenchao & Xinchun, 2020). Social support can be defined as the availability of people to rely on or the amount of help received through interaction with others (Li et al., 2021). People who have more social support show high mental health (Bjørlykhaug et al., 2022). Social support is a key environmental resource for realizing positive change 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 (Zwahlen et al., 2016). However, further investigation of the relationship between social support and PTG in individuals who have experienced trauma is warranted.

Considering that the country of Iraq, which is one of the victims of many wars, has left a side and secondary impact on the lives of war survivors, most of whom suffer from multiple mental disorders such as post-traumatic stress disorder, and has been researched to a much lesser extent and has been reviewed (Molkari et al., 2013). Therefore, it is very important to identify and

investigate the factors affecting adjustment and growth after the accident among the survivors and children of the martyrs. Therefore, the aim of the present study is to investigate the relationship between resilience and social support with post-traumatic growth in children of Iraqi martyrs.

Research Method

This research was of a descriptive-correlation type. The statistical population of the research includes all children of witnesses of Iraqi families living in the border provinces of Iraq, whose number in the year (2022) was about 3274 children. The method of selecting the participants in this research was convenience sampling method. In this way, in the border provinces of Iraq in three parts of the country, north, northeast and east, the children of families who have experienced a severe bereavement such as the death (martyrdom) of a loved one such as father, mother in the last five years and in the Martyr Foundation These provinces had files, were identified and were evaluated based on the willingness to participate in the research and entry criteria such as elementary education and above and age 15 to 30 years. The measures used in the research are:

1- Post traumatic growth questionnaire(PTG)

  This questionnaire was developed by (Tedeschi & Calhoun, 1996) to assess positive outcomes experienced by people who have experienced trauma. The questionnaire has 21 questions and includes the components of new possibilities (5 questions: questions 3, 7, 11, 14 and 17), improved relationships (7 questions: questions 6, 8, 9, 15, 16, 20 and 21), Personal Strength (4 Question: questions 4, 10, 12 and 19), appreciation for Life (3 questions: questions 1, 2 and 13) and spiritual Growth (2 questions: questions 5 and 18). The scoring of the questionnaire is done in the form of a 6-option Likert scale and as a score of 0 (not at all), score 1 (very little), score 2 (low), score 3 (moderate), score 4 (a lot) and score 5 (very much). The range of scores is between 0 and 105, and the final score of this scale is calculated from the sum of scores in each component, and higher scores indicate higher post-traumatic growth in people. In Tedeschi and Calhoun's (1996) study, the overall alpha coefficient of the questionnaire was 0.90 and the range of Cronbach's alpha for each of the subscales was between 0.67-0.85. In the study of Seyed Mahmoudi and colleagues (2014) 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. In their study, the divergent and convergent validity of the questionnaire was confirmed (Seyed Mahmoudi et al., 2012).

2- Resilience questionnaire (RG)

This questionnaire was prepared by (Connor & Davidson, 2003). The producers of this scale are of the opinion that this questionnaire is well able to separate resistant people from non-resilient people in clinical and non-clinical groups and can be used in research and clinical situations. This questionnaire has 25 items that are graded on a Likert scale between zero (completely false) to five (always true). In this questionnaire, to obtain the overall score of the questionnaire, the total points of all questions are added together, the range of scores is from 0 to 100 and the cut-off point is 50, and the higher this score is, the greater the resilience of the respondent and conversely. Connor and Davidson reported the Cronbach's alpha coefficient of the resilience scale as 0.89. Also, the reliability coefficient obtained from the retest method was 0.87 at a time interval of 4 weeks. Also, Connor and Davidson's resilience scale scores had a positive and significant correlation with the stubbornness scale scores and a significant negative correlation with the perceived stress scale scores and the Sheehan stress vulnerability scale, which indicates the concurrent validity of this scale (Reza & Mahe, 2016).

3- Standard Questionnaire of Perceived Social Support (MSPSS)

This questionnaire was developed by (Zimet et al., 1988). This scale measures social support in three sources: family, friends, and important others. Questions 3-4-8-11 measure the family resource, questions 6-7-9-12 the friend resource, and questions 1-2-5-10 the source of support from significant others. The maximum score for each scale is 20 and the minimum score is 4. The scoring of the questionnaire is based on a five-point Likert scale from 1 (completely disagree) to 5 (completely agree). The reliability of the questionnaire for the three mentioned components was between 0.85 and 0.91 and the whole questionnaire was 0.88. Divergent validity had a negative and significant correlation with the depression questionnaire (Zimet et al., 1988). Numerous studies have examined its factor structure in various populations, including university students, normal adult populations, and individuals with chronic diseases, showing

excellent psychometric properties (Kliem et al., 2015, Dambi et al., 2016, 2018). This scale has been translated into different languages and adapted to the socio-economic conditions of different countries (Dambi et al., 2016, 2018).

Data analysis

The data were processed using SPSS version 24. Descriptive statistics such as the frequency, percentage, mean and standard deviation of the variables were acquired. The association between the variables was investigated using Pearson's correlation coefficient. To examine whether resilience and social support were associated with post-traumatic growth levels among children of Iraqi martyrs, a regression analyses were administered. Prior to running the analyses, the assumptions of regression method were checked on data.

Results

The participants included 250 people (117 girl and 133 boy). To better describe the participants, their demographic characteristics are presented in Table 1.

Table 1. Descriptive statistics of sample demographics (n =250).

Variables		F	%
	Associate	86	34.4
Education	Undergraduate	138	55.2
	Graduate	26	10.4
	High	23	9.2
Socioeconomic status	Middle	208	83.2
	Low	19	7.6
	Married	48	19.2
Marital status	Single	187	74.8
	Widow	15	6
	Employed	162	64.8
Job	Unemployed	88	35.2
	Retired	0	0
Age Mean (SD)		21.9 (5.7)	

To examine the relationship between resilience, social support and post-traumatic growth, the correlation matrix between the variables is shown in Table 2.

Table2. Descriptive Statistics and Correlation Coefficients

Variables	M	SD	(1)	(2)	(3)
1. Post-Traumatic Growth	52.89	3.68	1.000		
2. Resilience	78.69	5.66	0.543***	1.000	
3. Social Support	43.41	2.81	0.575***	0.251*	1.000

The contents of Table 2 show that there was a positive and significant correlation between resilience and post-traumatic growth in children of Iraqi martyrs (p<0.001; r=0.543). Also, there is a positive and significant relationship between social support and post-traumatic growth (p<0.001, r=0.675). That is, high levels of resilience and social support are associated with high levels of posttraumatic growth in Iraqi control children.

In the following, standard regression was used to determine the unique contribution of each predictor variable in explaining growth after the accident. First, the assumptions of this method were examined. The results of checking the assumption of normality of the distribution of variables were checked using the Kolmogorov–Smirnov test, and the calculated z values for all variables were not significant at the P<0.01 level thus the assumption of normality was confirmed, the assumption of homogeneity of variance according to the Levin's test was checked and the results showed that the f values calculated for the variables are not significant at the P<0.01 level. So the variance of the research variables is homogeneous in the studied groups.

Table3. Multivariate regression model in predicting PTG

Variables	R	R^2	Sig	SD	SB	USB
Resilience	0.436	0.19	0.001	2.4	0.32	0.39
Social Support	0.52	0.27	0.001	3.61	0.42	0.47
Total Model	0.67	0.45	0.001	4.28	0.48	0.53

Standard Beta (SB), Un standard Beta (USB)

Table 3 shows that resilience variable has a significant role in predicting post-traumatic growth (p<0.001) and can uniquely explain 19% of post-traumatic growth variance. Also, the social support variable has a positive and significant role in predicting post-traumatic growth and can

uniquely explain 27% of post-traumatic growth variance. According to the general model, two variables of resilience and social support can significantly predict 45% of the variance of post-traumatic growth.

Discussion

The aim of the present study was to investigate the role of social support and resilience in predicting post-traumatic growth in in children of Iraqi martyrs. The obtained results showed that there is a positive and significant relationship between resilience and growth after the accident. This finding is consistent with the results of researches (Aafjes-van Doorn et al., 2022; Ahmadi & Mehrabi, 2020; Chen et al., 2022; Duan et al., 2015; Kiani et al., 2020; Shi et al., 2022; Ssenyonga et al., 2013) and inconsistent with the research results (Levine et al., 2008) which showed that high levels of resilience are associated with the lowest post-traumatic growth scores.

According to developmental psychologists, resilience is a coping strategy that helps trauma survivors to recover from the later effects of stressful factors (Leipold & Greve, 2009). So that resilience is associated with less PTSD symptoms (Connor & Davidson, 2003). People who have high resilience; The stressful experience probably helps people to achieve positive meaning and effectively face their life challenges, reduce the negative effects of the traumatic event, and adjust themselves to life stressors (Lee et al., 2013; Heshmati et al., 2010). Many studies report that resilience may be related to feelings of competence. In particular, those who feel they have high resilience seem to have adequate preparedness in a crisis situation and are less at risk of developing mental health symptoms (Brooks et al., 2020). Research suggests that challenging situations may provide opportunities for individuals to cope with incremental amounts of adversity, which can help strengthen resilience to future difficult situations and enhance post-traumatic growth (Liu et al., 2018).

Also, positive factors such as resilience can increase PTG by using positive psychological resources. Resilience is considered a coping strategy in the face of life's adversities and refers to the ability to maintain stable psychological functioning when exposed to a stressful or traumatic event, especially one that lasts for a long time refers to (Li et al., 2019). High resilience shows that a person has the ability to positively regulate his physical and mental health in the face of challenges and can bring more positive resources to strengthen PTG (Ding et al., 2020). Hence,

for people who inevitably experience distress or traumatic stress, resilience can help them quickly "recover" from stressful experiences and reduce distress symptoms. Previous literature also points out that positive resources can help people cope with traumatic problems through the resilience process, thereby increasing PTG (Adjorlolo et al., 2022).

Regarding the hypothesis of the relationship between social support and post-traumatic growth, the research results showed that there is a direct and significant relationship between social support and post-traumatic growth. These findings are consistent with the results of researches (Ahmadi & Mehrabi, 2020; Mo et al., 2022; Pournaghash Tehrani & Mortazavifar, 2020; Prati & Pietrantoni, 2009; Tian & Wang, 2022; Zhou et al., 2017).

In explaining and explaining this finding based on the theoretical basis, among all the factors related to PTG, social support is one of the things suggested by the theoretical models of PTG. Joseph and Linley's (2005) organismic appraisal theory suggests that Social support can facilitate the emotional-cognitive process to reconstruct a new belief system, which integrates trauma-related information in a growth direction. Another recent model, the social context framework, suggests that significant social interactions in themselves can directly lead to positive change after adversity and trauma (Mancini, 2019). According to Tedeschi and Calhoun (2018), 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 experiences, victims are more trusted and accepted than people who have experienced similar traumas, and are more likely to be willing to disclose (Tedeschi et al., 2018; Heshmati et al., 2022), this Self-disclosure provides shared social support that may help traumatized individuals. They acquire new schemas and allow them to see things from other perspectives, more useful and compatible (Kazemi et al., 2023). Also, perceived social support by promoting adaptive strategies such as cognitive reappraisal can divert the attention of injured people from 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 (Zhou et al., 2017).

Also, based on meta-analyses (Prati & Pietrantoni, 2009), 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 (Zwahlen et al., 2016). Social support contributes to the development of cognitive emotion regulation strategies used by traumatized individuals, protecting them in traumatic situations (Richards et al., 2003). 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 focus them on the positive aspect. Then it is possible for vulnerable people to change their understanding of themselves and their interpersonal relationships and to find the meaning of the world after trauma and trauma so that growth after trauma can be realized (Zadafshar et al., 2022).

Conclusion

The results of this cross-sectional study provide positive and appropriate evidence for the relationship between the variables of social support, resilience and post-traumatic growth. This study showed that resilience and social support play a decisive role in post-traumatic growth.Therefore, in terms of practical importance, the findings of this research, in addition to paying attention to resiliency training and supporting injured people for recovery after trauma and helping to develop post-traumatic growth of injured people, provide clinical and practical horizons to experts and it places researchers and provides the necessary background for the design and implementation of other researches.

There are some limitations of the present study. First of all, this study was part of a cross-sectional research design, and therefore it was not possible to determine the causal relationship between the variables. Secondly, due to its availability, the research sample did not have enough similarities and similarities with other people, and this limits the ability to generalize the results. Thirdly, the research data was obtained using a self-report scale, which may be influenced by the participants' bias for social acceptability. According to the findings of this research, it is suggested that other researches be conducted in other regions of Iraq and on other traumas to check the generalizability of the research to others. Also, based on the first limitation, it is necessary to conduct longitudinal research in order to investigate the positive effects of resilience and social support on PTG.

References

Aafjes-van Doorn, K., Békés, V., Luo, X., Prout, T. A., & Hoffman, L. (2022). Therapists' resilience and posttraumatic growth during the COVID-19 pandemic. Psychological Trauma: Theory, Research, Practice, and Policy, 14(S1), S165 .

Adjorlolo, S., Adjorlolo, P., Andoh-Arthur, J., Ahiable, E. K., Kretchy, I. A., & Osafo, J. (2022). Post-traumatic growth and resilience among hospitalized COVID-19 survivors: A gendered analysis. International Journal of Environmental Research and Public Health, 19(16), 10014 .

Ahmadi, Z., & Mehrabi, H. A. (2020). Relationship between social support and resilience with posttraumatic growth: the mediating role of stress coping styles. Journal of Psychology New Ideas, 5(9), 1-13 .

Ai, A. L., Cascio, T., Santangelo, L. K., & Evans-Campbell, T. (2005). Hope, meaning, and growth following the September 11, 2001, terrorist attacks. Journal of interpersonal violence, 20(5), 523-548 .

Benjet, C., Bromet, E., Karam, E. G., Kessler, R. C., McLaughlin, K. A., Ruscio, A. M., Shahly, V., Stein, D. J., Petukhova, M., & Hill, E. (2016). The epidemiology of traumatic event exposure worldwide: results from the World Mental Health Survey Consortium. Psychological medicine, 46(2), 327-343 .

Bjørlykhaug, K. I., Karlsson, B., Hesook, S. K., & Kleppe, L. C. (2022). Social support and recovery from mental health problems: A scoping review. Nordic social work research, 12(5), 666-697 .

Brooks, S., Amlot, R., Rubin, G., & Greenberg, N. (2020). Psychological resilience and post-traumatic growth in disaster-exposed organisations: overview of the literature. BMJ Mil Health, 166(1), 52-56 .

Calhoun, L. G., & Tedeschi, R. G. (2012). Posttraumatic growth in clinical practice. Routledge .

Chen, X.-Y., Liu, X., Shi, X., Chen, H., & Fan, F. (2022). Psychological resilience and posttraumatic growth in adolescent survivors of earthquake: A 10-year cohort study. Journal of psychiatric research, 155, 331-337 .

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). Depression and anxiety, 18(2), 76-82 .

Dambi, J. M., Corten, L., Chiwaridzo, M., Jack, H., Mlambo, T., & Jelsma, J. (2018). A systematic review of the psychometric properties of the cross-cultural translations and adaptations of the Multidimensional Perceived Social Support Scale (MSPSS). Health and quality of life outcomes, 16(1), 1-19 .

Dambi, J. M., Jelsma, J., Mlambo, T., Chiwaridzo, M., Dangarembizi-Munambah, N., & Corten, L. (2016). An evaluation of psychometric properties of caregiver burden outcome measures used in caregivers of children with cerebral palsy: a systematic review protocol. Systematic reviews, 5, 1-6 .

Ding, J., Jia, Y., Zhao, J., Yang, F., Ma, R., & Yang, X. (2020). Optimizing quality of life among Chinese physicians: the positive effects of resilience and recovery experience. Quality of Life Research, 29, 1655-1663 .

Duan, W., Guo, P., & Gan, P. (2015). Relationships among trait resilience, virtues, post-traumatic stress disorder, and post-traumatic growth. PloS one, 10(5), e0125707 .

Finstad, G. L., Giorgi, G., Lulli, L. G., Pandolfi, C., Foti, G., León-Perez, J. M., Cantero-Sánchez, F. J., & Mucci, N. (2021). Resilience, coping strategies and posttraumatic growth in the workplace following COVID-19: A narrative review on the positive aspects of trauma. International Journal of Environmental Research and Public Health, 18(18), 9453 .

Henkelmann, J.-R, de Best, S., Deckers, C., Jensen, K., Shahab, M., Elzinga, B., & Molendijk, M. (2020). Anxiety, depression and post-traumatic stress disorder in refugees resettling in high-income countries: systematic review and meta-analysis. BJPsych open, 6(4), e68 .

Jin, Y., Xu, J., & Liu, D. (2014). The relationship between post traumatic stress disorder and post traumatic growth: gender differences in PTG and PTSD subgroups. Social psychiatry and psychiatric epidemiology, 49, 1903-1910 .

Kazemi, K., Esfahani, H., Amiri, H., Tavan, A., & Farahmandnia, H. (2023). Post-traumatic growth and perceived social support in young adolescents during the COVID-19 pandemic. Journal of Emergency Practice and Trauma, 9(1), 38-43 .

Kiani, L., Rafeipoor, A., Mashayekh, M., Tajbakhsh, R., & Pouyamanesh, J. (2020). The Relationship between Resilience and Post Traumatic Growth in Patients on Hemodialysis. Health Psychology, 8(32), 93-104 .

Kliem, S., Mößle, T., Rehbein, F., Hellmann, D. F., Zenger, M., & Brähler, E. (2015). A brief form of the Perceived Social Support Questionnaire (F-SozU) was developed, validated, and standardized. Journal of clinical epidemiology, 68(5), 551-562.

Lee, D., Yu, E.-S., & Kim, N. H. (2020). Resilience as a mediator in the relationship between posttraumatic stress and posttraumatic growth among adult accident or crime victims: the moderated mediating effect of childhood trauma. European journal of psychotraumatology, 11(1), 1704563 .

Lee, J. E., Sudom, K. A., & Zamorski, M. A. (2013). Longitudinal analysis of psychological resilience and mental health in Canadian military personnel returning from overseas deployment. Journal of occupational health psychology, 18(3), 327 .

Leipold, B., & Greve, W. (2009). Resilience: A conceptual bridge between coping and development. European Psychologist, 14(1), 40-50 .

Levine, S. Z., Laufer, A., Hamama-Raz, Y., Stein, E., & Solomon, Z. (2008). Posttraumatic growth in adolescence: Examining its components and relationship with PTSD. Journal of traumatic stress, 21(5), 492-496 .

Li, F., Luo, S., Mu, W., Li, Y., Ye, L., Zheng, X., Xu, B., Ding, Y., Ling, P., & Zhou, M. (2021). Effects of sources of social support and resilience on the mental health of different age groups during the COVID-19 pandemic. BMC psychiatry, 21, 1-14 .

Li, Y., Qiao, Y., Luan, X., Li, S., & Wang, K. (2019). Family resilience and psychological well-being among Chinese breast cancer survivors and their caregivers. European journal of cancer care, 28(2), e12984 .

Liu, Y., Kumar, M., Katul, G. G., & Porporato, A. (2018). Reduced resilience as a potential early warning signal of forest mortality. 2018 ESA Annual Meeting (August 5--10) ,

Mancini, A. D. (2019). When acute adversity improves psychological health: A social–contextual framework. Psychological Review, 126(4), 486 .

Marziliano, A., Tuman, M., & Moyer, A. (2020). The relationship between post-traumatic stress and post-traumatic growth in cancer patients and survivors: A systematic review and meta-analysis. Psycho-Oncology, 29(4), 604-616 .

Mehrabi, E., Hajian, S., Simbar, M., Houshyari, M., & Zayeri, F. (2015). Post-traumatic growth: a qualitative analysis of experiences regarding positive psychological changes among Iranian women with breast cancer. Electronic physician, 7(5), 1239 .

Miller, O., Shakespeare-Finch, J., Bruenig, D., & Mehta, D. (2020). DNA methylation of NR3C1 and FKBP5 is associated with posttraumatic stress disorder, posttraumatic growth, and resilience. Psychological Trauma: Theory, Research, Practice, and Policy, 12(7), 750 .

Mo, Y., Tao, P., Liu, G., Chen, L., Li, G., Lu, S., Zhang, G., Liang, R., & Huang, H. (2022). Post-traumatic growth of nurses who faced the COVID-19 epidemic and its correlation with professional self-identity and social support. Frontiers in Psychiatry, 12, 562938 .

Molkari, B., Karmian, N., Farahbakhsh, K., & Esmaili, M. (2013). Qualitative Analysis ofEmotional and Familial Situations of Injured Victims of Sardasht Chemical Air Attack. Clinical Psychology Studies, 4(13), 107-120 .

Pięta, M., & Rzeszutek, M. (2023). The role of resilience in daily experiences of posttraumatic growth, affect, and HIV/AIDS stigma among people living with HIV. Scientific reports, 13(1), 796 .

Pournaghash Tehrani, S. S., & Mortazavifar, S. (2020). The effect of social support and emotion regulation strategies on predicting the mental health of people with multiple sclerosis. Journal of psychologicalscience, 19(89), 529-539 .

Prati, G., & Pietrantoni, L. (2009). Optimism, social support, and coping strategies as factors contributing to posttraumatic growth: A meta-analysis. Journal of loss and trauma, 14(5), 364-388 .

Reza, H. M., & Mahe, N. (2016). Intercultural comparison of resilience construct. PSYCHOMETRY, 4(16), 1-12 .

Richards, J. M., Butler, E. A., & Gross, J. J. (2003). Emotion regulation in romantic relationships: The cognitive consequences of concealing feelings. Journal of social and personal relationships, 20(5), 599-620 .

Schubert, C. F., Schmidt, U., & Rosner, R. (2016). Posttraumatic growth in populations with posttraumatic stress disorder—A systematic review on growth-related psychological constructs and biological variables. Clinical psychology & psychotherapy, 23(6), 469-486 .

Seyed Mahmoudi, S., Rahimi, K., & Mohammadi, J. (2012). Psychometric properties of Post-Traumatic Growth Questionnaire (PTGI). Psychological Methods and Models, 12(3), 93-108 .

Shakespeare-Finch, J., & Lurie-Beck, J. (2014). A meta-analytic clarification of the relationship between posttraumatic growth and symptoms of posttraumatic distress disorder. Journal of anxiety disorders, 28(2), 223-229 .

Shi, J., Sznajder, K. K., Liu, S., Xie, X., Yang, X., & Zheng, Z. (2022). Resilience and posttraumatic growth of patients with breast cancer during the COVID-19 pandemic in China: The mediating effect of recovery. Frontiers in Psychology, 12, 811078 .

Şimşir, Z., Dilmaç, B., & Özteke Kozan, H. İ. (2021). Posttraumatic growth experiences of Syrian refugees after war. Journal of Humanistic Psychology, 61(1), 55-72 .

Ssenyonga, J., Owens, V., & Olema, D. K. (2013). Posttraumatic growth, resilience, and posttraumatic stress disorder (PTSD) among refugees. Procedia-Social and Behavioral Sciences, 82, 144-148 .

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. Journal of traumatic stress, 9, 455-471 .

Tedeschi, R. G., Shakespeare-Finch, J., Taku, K., & Calhoun, L. G. (2018). Posttraumatic growth: Theory, research, and applications. Routledge .

Thakur, H., & Cohen, J. R. (2022). Short-term and long-term resilience among at-risk adolescents: The role of family and community settings. Journal of Clinical Child & Adolescent Psychology, 51(5), 637-650 .

Tian, L., & Wang, T. (2022). The Effect of College Students' Self-Efficacy on Post-Traumatic Growth Based on SPSS Data Analysis: The Mediating Role of Social Support. 2022 3rd International Conference on Artificial Intelligence and Education (IC-ICAIE 2022) ,

Tsai, J., El-Gabalawy, R., Sledge, W. H., Southwick, S. M., & Pietrzak, R. H. (2015). Post-traumatic growth among veterans in the USA: Results from the National Health and Resilience in Veterans Study. Psychological medicine, 45(1), 165-179 .

Vella, S.-L. C., & Pai, N. B. (2019). A theoretical review of psychological resilience: Defining resilience and resilience research over the decades. Archives of Medicine and Health Sciences, 7(2), 233-239 .

Wenchao, W., & Xinchun, W. (2020). Mediating roles of gratitude, social support and posttraumatic growth in the relation between empathy and prosocial behavior among adolescents after the Ya'an earthquake. Acta Psychologica Sinica, 52(3), 307 .

Wild, J., Smith, K., Thompson, E., Béar, F., Lommen, M., & Ehlers, A. (2016). A prospective study of pre-trauma risk factors for post-traumatic stress disorder and depression. Psychological medicine, 46(12), 2571-2582 .

Zadafshar, S., Kheradmand, M., Kazemian, H., & Akrami, N. (2022). Predicting Covid-19 Traumatic Stress and Post-Traumatic Growth in Nurses of Coronavirus Patient Care Unit Based on Perceived Social Support: The Mediating Role of Self-Compassion and Cognitive Emotion Regulation. Journal of Applied Psychological Research, 13(3), 327-341 .

Zhou, X., Wu, X., & Zhen, R. (2017). Understanding the relationship between social support and posttraumatic stress disorder/posttraumatic growth among adolescents after Ya'an earthquake: The role of emotion regulation. Psychological Trauma: Theory, Research, Practice, and Policy, 9(2), 214 .

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. Journal of personality assessment, 52(1), 30-41 .

Zwahlen, R., Rajandram, R., & Jenewein, J. (2016). Post-traumatic growth in oral cavity cancer in relation to positive coping strategies, hope and optimism. Comprehensive guide to post-traumatic stress disorder .