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The Effect of Childhood Trauma on Posttraumatic Growth in Patients with Depression

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Abstract

Introduction: The relationship between depression and childhood traumas has been emphasized for many years. This study investigates the impact of childhood traumas on posttraumatic growth in patients with depression.

Materials and Methods: A total of 120 participants who had experienced childhood trauma at least once in their lives (75 patients with depression and 45 healthy controls) were included in the study. Participants were administered sociodemographic information form, Beck Depression Inventory (BDI), Childhood Trauma Questionnaire 28 (CTQ-28) and Posttraumatic Growth Inventory (PTGI).

Results: Childhood traumas and rates of posttraumatic growth were high in both the patient and control groups, and there was no statistically significant difference between them. The statistical analysis revealed that participants in the depression group had significantly higher scores on the physical abuse subscale of the CTQ-28 compared to the control group. Furthermore, significant negative correlations were observed in the control group between physical abuse of the CTQ-28 and changes in relationships with others in the PTGI, as well as between sexual abuse of the CTQ-28 and changes in relationships with others in the PTGI. In the study, to be female and level of physical abuse were found to increase the likelihood of belonging to the depression group.

Conclusion: This study found that childhood trauma associated with physical abuse was more frequent in patients with depression than controls. Traumatic experiences were found to be detrimental to communicating with others. It is appropriate to recommend interventions for social support and for the treatment of traumatic experiences in childhood in a variety of contexts.

Keywords: Depression; posttraumatic growth; adverse childhood experiences.

Introduction

Depression is a common mental illness that includes symptoms such as feeling unhappy, uninterested, having trouble sleeping or eating, feeling tired, having low self-esteem, and having trouble concentrating (1). Moreover, depression is a public health problem, causing loss of psychosocial functioning, reduced quality of life, and increased risk of death and disease (2). The 12-month prevalence of major depressive disorder varies from country to country, but it is around 6 per cent (3). The lifetime risk of depression is significantly higher, ranging from 15-18%, and nearly one out of every five people will experience a depressive disorder at some point in their lifetime (4). Biological, genetic, and psychosocial factors contribute to the development of depression, and there are significant interrelationships among these factors. Childhood trauma and early adverse life events are known risk factors for adult depression (5). Childhood trauma is an important factor influencing both incidence and characteristics of depressive disorder. When examining the association between childhood trauma and depressive disorder, it is crucial to investigate both the neurobiological mechanisms and psychosocial impacts of trauma. Studies have shown that individuals who experienced childhood trauma are at a greater risk of developing more severe and younger onset of depression. Furthermore, individuals with a history of childhood trauma are more prone to recurrent and persistent episodes of depression and are often unresponsive to psychotherapy, pharmacotherapy, or combined treatment approaches (6). The negative psychological effects of trauma such as post-traumatic stress disorder (PTSD), depression and anxiety disorders have been studied for many years. However, recent studies have shown that certain individuals can experience positive changes and profound transformations following trauma, in contrast to the typical negative effects on human

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psychology. The powerful factors in this process are believed to be not necessarily recovery from the negative effects of trauma, but rather the development of a new level of meaning, a transformed philosophical outlook that represents a valuable purpose, a redefined sense of self, and a changed relationship with the world in dealing with trauma and rebuilding one's life. Posttraumatic growth is the process by which individuals experience positive changes in their lives following traumatic events, including changing how they perceive themselves and others, as well as the quality of interpersonal relationships (7). The development of post-traumatic growth is influenced by numerous psychological factors and also posttraumatic growth is observed in various domains. These areas include reevaluating your life, forming meaningful relationships with those around you, improving your personality (changing how you see yourself), adjusting your life priorities, and enriching your spiritual life (7). There is a lack of adequate information in empirical studies that examine pathways to pathology and distress following childhood trauma. In addition, posttraumatic growth is one of the least studied areas, although childhood trauma has been well studied in patients with depression. Therefore, the purpose of this study was to examine the relationship between childhood trauma and posttraumatic growth in patients with depression. Based on previous theory and research, we hypothesized that childhood trauma would positively predict posttraumatic growth. Simultaneously, our aim was to investigate whether depression has a negative impact on posttraumatic growth or whether it co-occurs.

Materials and Methods

One hundred and twenty individuals, comprising 75 individuals diagnosed with major depressive disorder and 45 healthy controls, participated in the study at a university hospital psychiatry outpatient clinic during the period of September 2019 to January 2020. Patients with depressive symptoms were evaluated with Structured Clinical Interview for DSM-IV Axis I disorders (SCID-1) and who had been diagnosed with major depressive disorder in accordance with DSM-5 criteria asked to complete the measures in the scale set. A complete psychiatric evaluation was performed to exclude any additional mental disorders. Study eligibility criteria required that subjects meet DSM-5 diagnostic criteria for depressive disorder, between the ages of 18 and 65 years, have no history of substance use disorder, not to be pregnant, and have no additional neurological, psychiatric, or physical health conditions. The sample size of the prospective study was calculated using the G*Power statistical program (ver.3.1.9.7)*. The resulting post-hoc power was determined to be 88 when considering the 45 control and 75 patient samples, an effect size of 0.6, and a type 1 error (α) of 0.05. The control group was selected from hospital employees and their family members who were matched for age, sex, marital status, and educational attainment.

Data Collection Tools

Sociodemographic Data Form: The researchers developed a form to ascertain individuals' characteristics, including their age, gender, marital status, education level, years of employment, type of occupation, and history of psychiatric illness in both their personal and familial backgrounds.

Beck depression inventory (BDI):

It is a measure of the severity of symptoms of depression and was developed by Beck (8). It is a 4-point self-rating scale of the Likert type. Cronbach's alpha coefficient was found to be 0.80 in the Turkish validity and reliability study of the form conducted by Hisli (9).

Childhood trauma questionnaire (CTQ-28):

It was developed by Bernstein and colleagues (10). The scale uses a 5-point Likert-type response format. It is a self-report scale consisting of 5 subscales for assessing different forms of abuse and neglect, including physical abuse, emotional abuse, sexual abuse, physical neglect, and emotional neglect. Scale items are scored on a range of 1 to 5. The 28-item scale in Turkish was successfully adapted, tested for validity and reliability, and a cut-off point of 35 points was recommended (11).

Posttraumatic growth inventory (PTGI):

It was developed by Tedeschi and Calhoun as an assessment of the potential benefits that may be available to individuals who have been through a trauma. The scale was originally composed of 34 items but was reduced to 21 items through analysis, comprising of 5 subscales. An increase in score on the scale is an indication of an increase in the traumatized individual's level of growth following the experience. The internal consistency (α) of the scale was 0.90, while the subscales had internal consistencies ranging from $\alpha = 0.67$ to $\alpha = 0.085$ (7). The adaptation of the scale into the Turkish language has been the work of Dürü. The reliability of the scale was examined using

Table 1: Comparison of sociodemographic characteristics of the depression and control groups

Group		Control (n=45)		Patient(n=75)			
		Mean±SD		Mean±SD		t	p
Age		29.84±8.02		30.11±9.5		-0.15	0.87
		n	%	n	%	X2	p
Gender	Male	14	31.1	31	68.9	1.254	0.26
	Woman	31	41.3	44	58.7		
Marital status	Single	29	41.4	41	58.6	1.39	0.49
	Married	15	31.3	33	68.8		
	Widowed divorced	1	50.0	1	50.0		
Education status	Middle School	6	35.3	11	64.7	3.73	0.29
	High School	4	28.6	10	71.4		
	Undergraduate Degree	8	26.7	22	73.3		
	Illiterate	27	45.8	32	54.2		
Mental illness	No	41	41.4	58	58.6	3.24	0.07
	Yes	4	20.0	16	80.0		
Mental illness in the family	No	39	41.9	54	58.1	3.47	0.06
	Yes	6	22.2	21	77.8		

the Cronbach alpha method, which yielded an internal consistency coefficient of $\alpha = 0.93$ (12). Three factors explaining 59% of the variance were obtained through the factor analysis. These changes were identified as alterations in interpersonal relationships, shifts in one's philosophical outlook, and transformations in self-perception (13).

Ethical consent: The research has been approved by the Harran University Non-Interventional Clinical Research Ethics Committee. The decision is dated 09.09.2019 and the number is E.1024. The study was conducted in accordance with the latest version of the World Medical Association's Declaration of Helsinki and the Good Clinical Practices Guide (GCP)/Good Laboratory Practices (GPL) criteria recently published by the Ministry of Health. Before administering the sociodemographic information form and the scales, the purpose of the study and the content of the scales were explained to the participants. Informed consent was obtained from participants who agreed to participate in the study.

Statistical analysis: Data analysis was performed using SPSS 26.0. Descriptive statistics for continuous variables were expressed as mean and standard deviation. Categorical variables were expressed as number and percentage. Because the scale and subscale scores did not show a significant deviation from normal, the t-test was used to compare groups by demographic variables. The sociodemographic characteristics of the depression and control groups were compared using chi-squared analysis. The Pearson correlation analysis was used to show the relationship between the continuous variables. Binary Logistic regression analysis was performed to determine risk factors that may affect trauma. In the analyses, the significance level was 0.05.

Results

The mean age of the patients with depression who participated in the study was 30.11±9.5 years, while the mean age of the control group was 29.84±8.02 years. 58.7% of the patients diagnosed with depression and 41.3% of the

control group were women. Table 1 compares whether there is a relationship between gender, marital status, level of education, presence of mental illness in the family and in the background according to the presence of participants in the depression and control groups. No significant relationship was found between the variables. The comparison made to determine whether the scores obtained by the participants in the healthy group and the participants with depression from the subscales

Table 2: Comparison of the scores of the BDI, CTQ-28 and PTGI total and subscales in patient and control groups

	Group	N	□X	Sd.	t	p
BDI	Control	45	7.71	7.06	-6.52	0.01
	Patient	75	21.72	13.31		
Emotional abuse	Control	45	10.97	2.51	0.324	0.75
	Patient	75	10.81	2.79		
Emotional neglect	Control	45	23.26	2.91	1.898	0.06
	Patient	75	22.12	3.36		
Physical abuse	Control	45	11.40	3.88	-2.428	0.01 *
	Patient	75	12.86	2.72		
Sexual abuse	Control	45	10.17	2.52	-1.843	0.06
	Patient	75	11.09	2.70		
Physical neglect	Control	45	17.53	3.54	0.565	0.57
	Patient	75	17.13	3.88		
CTQ-28 Total	Control	45	76.75	11.82	-0.477	0.63
	Patient	75	77.70	9.77		
PTGI Total	Control	45	54.93	23.00	0.407	0.68
	Patient	75	53.29	20.37		
Change in Self-Perception	Control	45	29.04	12.46	0.084	0.93
	Patient	75	28.85	11.78		
Change in Life Philosophy	Control	45	15.69	7.92	0.786	0.43
	Patient	75	14.61	6.83		
Change in Human Relation	Control	45	10.20	5.42	0.377	0.70
	Patient	75	9.82	5.15		

Note: *p<0.05 **BDI:** Beck Depression Inventory, **CTQ-28:** Childhood Trauma Questionnaire
PTGI: Posttraumatic Growth Inventory

of the CTQ-28 and PTGI scales show a significant difference according to the groups is given in Table 2. It was found that the scores of the physical abuse subscale of the CTQ- 28 subscale showed a statistically significant difference according to the groups (t=-2.28*; p<0.05)*. The scores of the participants in the patient group (`x=12.87) were significantly higher than those in the control group (`x=11.40). There was no statistically significant relationship between the other subscales of the childhood trauma scale and the posttraumatic growth scale and its subscales in the depression and control groups. Table 2. Pearson correlation analysis was performed to assess the existence of significant associations between the total score and subscales of the CTQ-28 and the PTGI scores and subscales among participants in both the depression and control groups. In the control group, there were significant negative correlations between physical abuse on the CTQ-28 and change in PTGI relationships with others (r=-0.313, p<0.05), and between sexual abuse on the CTQ-28 and change in PTGI relationships with others (r=-0.298, p<0.05). No statistically significant relationships were observed between the other dimensions in the control group (p > 0.05).

Table 3: Correlations between the subscales of the CTQ and PTGI in the control and patient groups

Group		1	2	3	4	5	6	7	8	9	10
Control	**CTQ-TS**	1									
	CTQ-EA	0.707**	1								
	CTQ-EN	0.532*	0.234	1							
	CTQ-PA	0.854**	0.514**	0.161	1						
	CTQ-SA	0.891**	0.602**	0.319*	0.795**	1					
	CTQ-PN	0.911**	0.469**	0.468**	0.765**	0.809**	1				
	PTGI-TS	0.069	0.098	0.017	0.035	-0.067	0.140	1			
	PTGI-CSP	0.193	0.140	0.079	0.169	0.064	0.249	0.949**	1		
	PTGI-CLP	0.015	0.049	-0.093	0.051	-0.091	0.095	0.889**	0.762**	1	
	PTGI-CHR	-0.175	0.025	0.027	-0.313*	-0.298*	-0.117	0.763**	0.617**	0.559**	1
Patient	**CTQ-TS**	1									
	CTQ-EA	0.684**	1								
	CTQ-EN	0.598**	0.118	1							
	CTQ-PA	0.536**	0.294*	0.089	1						
	CTQ-SA	0.705**	0.598*	0.180	0.261*	1					
	CTQ-PN	0.716**	0.251*	0.633**	0.134	0.293*	1				
	PTGI-TS	0.065	0.162	-0.061	-0.078	0.138	0.033	1			
	PTGI-CSP	0.031	0.121	-0.091	-0.119	0.139	-0.001	0.934**	1		
	PTGI-CLP	0.105	0.152	0.043	0.039	0.060	0.058	0.841**	0.675**	1	
	PTGI-CHR	0.048	0.162	-0.089	-0.087	0.150	0.057	0.704**	0.515**	0.460**	1

* : $p<0.05$; ** : $p<0.01$,
CTQ-TS: CTQ Total Score 1
CTQ-EA: Emotional Abuse 2
CTQ-EN: Emotional Neglect3
CTQ-PA: Physical Abuse 4
CTQ-SA: Sexual Abuse 5
CTQ-PN: Physical Neglect 6
PTGI-TS: PTGI Total Score 7
PTGI-CSP: Change in Self-Perception 8
PTGI-CLP: Change in Life Philosophy 9
PTGI-CHR: Change Human Relations 10

In the analysis of the patient group, no significant correlation was found between the total score and the sub-dimensions of the CTQ-28 and the scores obtained from the PTGI and its sub-dimensions ($p > 0.05$). The results are presented in Table 3.

Binary logistic regression to identify predictor variables: The binary logistic regression analysis carried out in this study revealed a significant regression model that includes variables such as gender, marital status, educational status, family and personal history of mental illness, childhood traumas, depression, and posttraumatic growth scores, as predictors of depression (X^2 (14)=60.547, $p< 0.01$). The model accounted for 54% of the variance predicted by Nagelkerke R^2 and correctly categorized 77.5% of all participants. Among the independent variables, gender ($p<0.05$), physical abuse

Table 4: Intended Results of Model Estimation

	B	S.E.	Wald	df	p	Exp(B)
Gender	-1.399	0.572	5.989	1	0.014	0.247
Marital Status	0.221	0.411	0.288	1	0.592	1.247
Education status	-0.270	0.275	0.964	1	0.326	0.763
Mental illness in the family	1.129	0.742	2.311	1	0.128	3.092
Mental illness	-1.026	0.965	1.132	1	0.287	0.358
Emotional abuse	-0.204	0.138	2.185	1	0.139	0.816
Emotional neglect	-0.069	0.114	0.367	1	0.545	0.933
Physical abuse	0.222	0.113	3.875	1	0.049	1.248
Sexual abuse	0.268	0.186	2.074	1	0.150	1.307
Physical neglect	-0.131	0.119	1.208	1	0.272	0.877
Change in self-perception	-0.011	0.031	0.131	1	0.718	0.989
Change in Life philosophy	-0.010	0.052	0.034	1	0.853	0.990
Change in human relations	0.067	0.063	1.161	1	0.281	1.070
BDI	0.144	0.034	17.919	1	0.001	1.155
Constant	1.619	3.252	0.248	1	0.618	5.050

BDI: Beck Depression Inventory

($p<0.05$) and depression level ($p<0.05$) were significant predictors. In summary, the likelihood of being in the depression group is higher for females and for those who have a history of physical abuse (Table 4).

Discussion

In the study, patients with depressive disorder had significantly higher scores on the physical abuse subscale of the CTQ-28 compared to healthy controls. Many studies suggest a correlation between childhood traumatic experiences and elevated psychopathology, specifically depression onset in adulthood. It is crucial to note that the relationship is not causal. It is widely recognized that adverse childhood experiences can be extremely traumatic and have long-lasting effects. The prevalence of childhood trauma in patient populations diagnosed with depression has been reported in numerous studies (14, 15). According to a number of studies, patients with major depressive disorder have a significantly higher rate of history of physical abuse (16, 17). In our study, the scores for childhood traumas were elevated among both the group diagnosed with depression and the control group. However, research has shown that not all individuals are affected by trauma in the same way, and that those with higher levels of resilience are better equipped to cope with trauma and experience improved mental health outcomes despite the negative consequences and associated psychiatric disorders (18). Posttraumatic growth can manifest itself in a variety of ways, with individuals displaying. Although an individual may experience positive development in one domain, this does not necessarily translate into positive development in another domain, or may even result in negative development (19). Recent studies have shown that individuals who have experienced trauma exhibit post-traumatic growth, particularly in three key areas: self-perception, philosophy of life, and interpersonal relationships (13). Information on the impact of childhood trauma on PTGI processes in adulthood is inadequate. In our research, high rates of post-traumatic growth were observed in both the depression group and the control group, along with childhood trauma, and the statistical analysis did not show a significant difference between them. PTG has been reported in various cultures after the experience of physical ailments such as cancer, terrorism, war, and migration (20, 21).

Depression and anxiety may have a negative impact on posttraumatic growth. It is believed that individuals with diagnosed mental illness may exhibit posttraumatic growth, similar to those who have undergone other traumatic experiences (22). For example, research has shown that patients who experience their first episode of psychosis also experience posttraumatic growth. Taking into account an individual's level of purpose in life, coping self-efficacy, core beliefs, and recovery, PTG has also been associated with psychosis symptomatology, posttraumatic stress, and self-expression (23). Various reasons have been given for the fact that posttraumatic growth may also be related to mental health problems. Childhood trauma is one of the important factors that mediates this process. While some studies have indicated that depression has a detrimental impact on posttraumatic growth, others have found a positive correlation between posttraumatic growth and depression. For instance, a study that followed 316 survivors of the L'Aquila earthquake in Italy for two years found that posttraumatic growth was positively correlated with moderate depression levels (24). This suggests that moderate levels of depression and distress may help people cope with the psychological consequences of a traumatic event. Similarly, increased posttraumatic growth correlated with decreased PTSD and increased depression among 186 Iraqi students who had experienced an average of 13 adverse war-related traumatic events (25). Longitudinal research is needed to gain a full understanding of the relationship between reports of posttraumatic growth and depression during the recovery process from a traumatic event. In this study, one of the explanations for the high PTGI scores in the control group as well as in the depression group is the age of the participants. It is hypothesized that younger individuals are more courageous and adaptive in making important changes in their lives. As a result, they exhibit more posttraumatic growth. A greater number of traumatic experiences is unlikely to be viewed as beneficial by older adults (26). In this trial, both groups were young on average. One significant finding from the study indicates a negative correlation between physical and sexual abuse recorded on the childhood traumas scale and the PTGI subscale for changes in the individual's relationships with others in the control group. As previously stated, post-traumatic growth manifests in three primary domains: alterations in self-perception, interpersonal connections, and overall outlook on life. Some changes in interpersonal relationships after an event are manifested in the domain of self-disclosure and emotional expression. Talking about traumatic events with someone can help you cope and realize the importance of strong relationships. Following the traumatic event, individuals reported an increase in effort, empathy, and commitment to interpersonal relationships. Positive changes in the individual's social relationships result from increased sensitivity to the feelings and needs of others and increased efforts to improve relationships (27, 28). A significant negative correlation between physical and sexual abuse and changes in relationships with others was found. It is possible that this finding results from damage to the sense of trust or other reasons. In the study, gender and physical abuse were found to be predictors of depression, with females and those experiencing higher levels of physical abuse being more likely to be in the depression group. This study provides additional support for the relevance of posttraumatic growth when it comes to individuals facing depression and other mental health concerns, including those groups that have yet to be studied. In the field of mental health, it has been reported that promoting posttraumatic growth makes an important contribution to supporting recovery (29). To explore the implications for mental health care processes, it is necessary to identify clinical subpopulations with childhood trauma in which a posttraumatic growth approach is particularly needed, and to develop and evaluate manualized treatment approaches that facilitate positive psychological change. Therefore, in addition to medication and other psychotherapies, it is important to consider that treatment for depression and other psychopathologies requires an active process of seeking personal meaning, re-engaging with life, and learning to manage the demands of relationships with others (29).

Study limitations: The study is limited by a small sample size, the use of self-report measures, a cross-sectional design, and a lack of investigation into posttraumatic stress disorder. The results will not reflect the general results due to the fact that the study was conducted in a single center and that a cause-effect relationship cannot be established due to the cross-sectional nature of the study.

Conclusion

It's important to identify and acknowledge childhood traumatic experiences, as well as

potential future mental health problems. This is critical to developing effective treatment and follow-up plans. For this reason, it is advisable to propose the treatment of childhood trauma in a variety of settings. Preventive interventions for individuals at risk of poor mental and social adjustment should be a priority.

Ethical approval: The study received approval from the Harran University Clinical Research Ethics Committee on September 9th, 2019, decision number E.1024.

Conflict of interest: The authors declare no conflicts of interest related to this investigation.

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