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Posttraumatic stress disorder, posttraumatic growth and psychological resilience in Syrian refugees: Hatay, Turkey*

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ABSTRACT

Objective: *The aim of this study is to investigate the relationship between posttraumatic stress disorder, posttraumatic growth and resilience in Syrian refugees.* ***Methods:*** *The sample includes 310 Syrian refugees living in the Reyhanlı district of Hatay. Demographic Information Form, Impact of Events Scale, Harvard Trauma Questionnaire Section I, Post-Traumatic Growth Inventory and Connor-Davidson Resilience Scale were used as the data collection tools.* ***Results:*** *The rate of the posttraumatic stress disorder (PTSD) was 80%. Low monthly income and wishing to return to their home country were found to be risk factors for PTSD. Refugees with PTSD had higher war-related traumatic events. Posttraumatic growth is higher among refugees with PTSD, particularly in the areas of relating to others and spiritual change. Resilience and posttraumatic growth was found to be positively correlated and regression analysis showed that resilience promotes posttraumatic growth.* ***Conclusion:*** *After trauma, posttraumatic growth can be increased by strengthening the resilience of Syrian refugees.* ***(Anatolian Journal of Psychiatry 2019; 20(3):269-276)***

Keywords: *Syrian refugees, war-related traumatic events, post-traumatic stress disorder, post-traumatic growth, psychological resilience*

Suriyeli sığınmacılarda travma sonrası stres bozukluğu, travma sonrası büyüme ve ruhsal dayanıklılık: Hatay, Türkiye

ÖZ

Amaç: *Bu çalışmanın amacı, Suriyeli sığınmacılarda travma sonrası stres bozukluğu, travma sonrası büyüme ve dayanıklılık arasındaki ilişkiyi araştırmaktır.* ***Yöntem:*** *Örneklem Hatay'ın Reyhanlı ilçesinde yaşayan 310 Suriyeli sığınmacıdan oluşmuştur. Veri toplama aracı olarak Demografik Bilgi Formu, Olayların Etkisi Ölçeği (OEÖ-R), Harvard Travma Envanteri Bölüm I, Travma Sonrası Büyüme Envanteri ve Connor-Davidson Psikolojik Sağlamlık Ölçeği kullanılmıştır.* ***Sonuçlar:*** *Travma sonrası stres bozukluğu (TSSB) oranı %80'dir. Düşük aylık gelir ve ülkelerine dönme isteği, TSSB için risk etkeni olarak bulunmuştur. TSSB'li sığınmacılar savaşla ilgili daha fazla travmatik olay yaşamışlardır. Travma sonrası büyüme, TSSB'li sığınmacılar arasında, özellikle başkalarıyla ilişki kurma ve ruhsal değişim alanlarında daha fazladır. Dayanıklılık ve travma sonrası büyüme arasında pozitif korelasyon bulunmuş ve regresyon analizinde dayanıklılığın travma sonrası büyümeyi desteklediği gösterilmiştir.* ***Sonuç:*** *Travma sonrası, Suriyeli sığınmacılarda dayanıklılık güçlendirilerek travma sonrası büyüme artırılabilir.* ***(Anadolu Psikiyatri Derg 2019; 20(3):269-276)***

Anahtar sözcükler: *Suriyeli sığınmacılar, travmatik savaş olayları, travma sonrası stres bozukluğu, travma sonrası büyüme, ruhsal dayanıklılık*

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INTRODUCTION

Due to the Syrian conflict, 5.6 million Syrian had to leave their country and 6.6 million became internally displaced since March 2011.[1] Many countries have hosted Syrian refugees with Turkey hosting the highest number of refugees among these countries.[2]

Studies conducted with Syrian refugees in different countries reveal that Syrian refugees are at a risk group in terms of mental disturbances. In a study on Syrian refugees in Sweden it was found that depression was the most prevalent mental disorder with a rate of 40.2%, followed by low subjective well-being with 37.7%, anxiety with 31.8%, PTSD with 29.9%.[3] The limited studies on Syrian refugees in the literature reveal PTSD rate between 27.2% and 83.4%.[3-7] In another study with Syrian refugees in Sweden and Turkey it was also found that Syrian refugees settled in Turkey had higher trauma characteristics and PTSD levels than the Sweden sample.[8]

Instead of identifying the factors that lead to PTSD, recent researchers have focused on the positive aspects of the psychological trauma[9-12] for applying interventions that are more effective. In this context, posttraumatic growth (PTG) has increased importance in terms of leading positive change in one's life after traumatic events. PTG is defined as 'the experience of positive change that occurs as a result of the struggle with highly challenging life crises'.[13] There are different views on the relationship between PTG and PTSD. According to one opinion PTG is positively related with different types of trauma as well as war-related traumatic events.[14] Studies have shown that veterans and former prisoners of war with PTSD reported higher levels of PTG than those without PTSD[15] and PTG is associated with the severity of the traumatic experience.[16,17] In a study among psychiatric outpatients with immigrant backgrounds, the results showed that increased exposure to traumatic events and the length of time after the traumatic events contributed to the level of PTG.[10] According to a different study while PTG is not associated with PTSD, the two coexist[18] and PTG is positively correlated with life satisfaction.[19] Studies conducted with refugees show that separation from family and severely traumatizing events are negatively correlated and satisfaction about present living conditions and perceived support are positively correlated with PTG.[20] In another study with multiple traumatized refugees, it was determined that PTG was the most powerful variable affecting quality of life.[10] In a study conducted with Syrian refugees, there was an increase in PTG with adequate financial income and humanitarian assistance.[21]

Another important concept in trauma studies is resilience which protect individuals from negative outcomes after traumatic events.[22] 'Resilience is the personal qualities that enable one to thrive in the face of adversity'.[23] Resilience is particularly associated with the health condition of the individuals exposed to traumatic events and people with high resilience characteristics have better health conditions.[24] Studies in the literature show different results regarding the relationship between PTSD and resilience. It was stated that resilience was associated with PTSD[24] while other studies have revealed there was no association with traumatic events.[25]

The findings in the literature about the relationship between resilience and PTG are controversial. One idea is that resilience and PTG are not static properties but are qualities that can be changed over time.[26] The results of a study conducted on a large sample of war and terror victims revealed that PTG and resilience had an inverse relationship and healthy resilient individuals show little distress or PTG.[27] On the other hand some studies have a found a positive correlation between PTG and resilience but no correlation between these variables and war-traumatic events.[25,28] Studies about the relationship between PTSD, PTG and resilience among refugees are limited. For that reason the aim of this study is to investigate the relationship between PTSD, PTG and resilience among Syrian refugees who live outside of the refugee camps.

METHODS

Participants

The population of the study consists of Syrian refugees who were forced to migrate due to the civil war in Syria and the sample of this study is drawn from the Syrian refugees who live in the Reyhanlı district of Hatay in Turkey. The sample was drawn from persons aged 18 or older and informed consent was taken from each participant. The present study included 164 (52.9%) male and 146 (47.1%) female participants-three hundred and ten Syrian refugees. In terms of age 118 (38.1%) were between 18-29 years of age, 102 (32.9%) were between 30-39 and 90 (29%) were above the age of 40. In regard of educational level 141 (45.5%) had graduated from

primary school, 68 (21.9%) from high school and 101 (32.6%) were graduates from university or above. A total 178 (57.4%) were married and 132 (42.6%) were single, 104 (33.5%) of the participants had children and 192 (61.5%) of the participants were unemployed. While 263 (84.8%) reported that they did not receive any financial support, only 47 (15.2%) reported that they receive such support. Time of residence for 157 (50.6%) of the participants was 3 years or more and 1-2 years for the other 153 (49.4%).

Procedures and materials

The data was collected as a household survey study. From each household only one person was taken in the survey. An Arabic speaking psychologist conducted interviews.

Demographic Information Form: This form was prepared in Arabic language by the researchers. It includes questions about gender, marital status, duration of residence in Turkey, having children, number of people living in the same house, employment status, education level, monthly income, financial support, cigarette use, alcohol use, and views on returning to their own country.

Impact of Events Scale (IES-R): The IES-R was developed by Weiss to measure subjective distress caused by any traumatic event.[29] It includes 22 items and is rated on a five point scale ranging from 0 to 4. The best cut-off point of IES-R total score was found to be 33.[30] The Arabic version of IES-R was developed and the confidence level was found to be 0.93.[31] In this study, the Arabic version of IES-R was used and the Cronbach's alpha coefficient of the IES-R total score was found to be 0.86.

Harvard Trauma Questionnaire (HTQ): The HTQ was developed by Mollica and colleagues to assess the traumatic events such as torture after mass violence or war and to measure the traumatic stress symptoms among refugees.[32] The most important feature of the scale is that it is a cross-cultural instrument. The first part of the questionnaire includes 42 items and measures the number of traumatic events during the mass violence or war. In the present in order to determine the war related events the Arabic version of the Section I of the HTQ was used.[33]

Post-Traumatic Growth Inventory (PTGI): PTGI was developed to assess changes in individuals' lives after a specific traumatic event.[34] In the present study the Arabic version of the PTGI was used.[31] It includes 21 items and is rated on a six point scale ranging from 0 to 5. The PTGI also includes five subscales; relating to others, new opportunities, personal strength, appreciation of life and spiritual change. The Cronbach's alpha coefficient of the scale was 0.90 and for the subscales it ranged between 0.67 and 0.85. In the present study, the Cronbach's alpha of the PTGI total score was found to be 0.88.

Connor and Davidson Resilience Scale (CD-RISC): CD-RISC was developed to measure stress coping ability and it includes 25 items with a five-point rated scale.[23] The highest score shows the highest resilience.[23] The Arabic version of the CD-RISC was used in the present study.[35] In the present study the Cronbach's alpha was found to be 0.90.

Statistical analyses

For comparison of the HTQ-section I mean scores in terms of demographic variables t-test analysis or one-way ANOVA was used. For comparison of PTSD status in terms of demographic variables, the Chi-square test was used. Odds ratio analysis was used to determine the effect of the variables on PTSD. The PTGI total and its subscale means scores, HTQ-section I and CD-RISC mean scores of two groups with and without PTSD were compared by Independent Sample t-test analyze. The Pearson correlation test was used to analyze correlation between scores of PTGI total and its subscales with CD-RISC. Linear regression was used to show the effect of resilience on PTG.

RESULTS

Demographic characteristics

Two hundred and forty-eight (80%) out of the 310 of the participants had an IES-R score higher than the cut-off point of 33 and were classified as the PTSD group. Among the war-related traumatic events, the HTQ Section I mean score was 18.80±7.66. The most frequent traumatic events reported by the participants in HTQ Section I were as follows: 91.3% of the participants reported to have 'Witnessed shelling, burning, or razing of residential areas or marshlands', 85.8% said they were 'Forced to flee your country', 79% said they were 'Forced to leave your hometown and settle in a different part of the country with minimal services', 75.5% said they had been 'Exposed to combat situation (explosions, artillery fire, shelling) or landmine', 75.2% were 'Confined to home because of chaos and violence outside'. When the traumatic event and demographic characteristics of the participants were compared, male participants

were found to have experienced more traumatic events than female participants (t=2.29, p=0.023). The number of traumatic events experienced did not differ according to age groups (F=1.98, p=0.140), marital status (t=1.55, p=0.123), income (t=1.29, p=0.199) or educational level (F=1.69, p=0.186).

Comparative characteristics and risk factors of PTSD and non-PTSD Syrian refugee groups

A comparison of the PTSD status in terms of demographic characteristics as shown in Table 1 revealed that demographic characteristics did not significantly differ according to PTSD status except low monthly income and desired to return to their country. In odds ratio analysis it was also found that the wish to return to the home country and income variables were risk factors for PTSD (Table 2).

Table 1. Comparison of demographic characteristics and PTSD status

		Non-PTSD		PTSD			
		n	%	n	%	χ^2	p
Age groups						0.66	0.720
	29 and below	21	17.8	97	82.2		
	30-39 age	21	20.6	81	32.7		
	40 and above	20	22.2	70	77.8		
Gender						0.12	0.733
	Male	34	20.7	130	79.3		
	Female	28	19.2	118	80.8		
Marital status						0.48	0.491
	Married	38	21.3	140	78.8		
	Not married	24	18.2	108	81.1		
Duration of Turkey residence						2.35	0.125
	1-2 years	36	23.4	117	76.5		
	3 and above	26	16.6	131	83.4		
Having children						1.60	0.207
	No	25	24.0	79	76.0		
	Yes	37	18.0	169	82.0		
Number of people living with						1.29	0.255
	1 person	21	24.1	66	75.9		
	2 or more	41	18.4	182	81.6		
Employment						0.03	0.861
	Employed	23	19.5	95	80.5		
	Unemployed	39	20.3	153	79.9		
Educational level						0.95	0.621
	Primary or secondary	25	17.7	116	82.3		
	High	14	20.6	54	79.4		
	University or higher	23	22.8	78	77.2		
Monthly income						8.10	0.004
	Less than 500 TL	19	13.1	126	86.9		
	500 TL and higher	43	26.1	122	73.9		
Wishing to return						7.19	0.027
	Yes	47	17.9	216	82.1		
	No	15	31.9	32	68.1		
Alcohol use						1.27	0.260
	User	5	100				
	Non-user	62	20.3	243	79.7		
Cigarette use						0.06	0.808
	User	21	20.8	80	79.2		
	Non-user	41	19.6	168	80.4		

As shown in Table 3, refugees with PTSD reported higher scores on HTQ Section I ($p<0.05$) and PTGI total scores than the non-PTSD group ($p<0.05$). In addition, refugees with PTSD re-

Table 2. Odds ratio and confidence intervals of some demographic variables

	Odds Ratio	Non-PTSD/PTSD 95% CI
Age (35 and below/36 and above age)	1.014	0.903-1.139
Gender (female/male)	0.981	0.878-1.096
Marital status (single/married)	0.961	0.860-1.074
Duration of Turkey residence (1-2/3 and above years)	0.916	0.819-1.025
Having children (yes/no)	0.926	0.817-1.050
Employment (yes/no)	1.010	0.902-1.132
Education (primary, secondary/high school and above)	1.053	0.943-1.177
Income (less than 500TL/500TL or more)	1.206	0.984-1.479*
Wishing to return (yes/no)	1.175	1.052-1.312*
Smoking (yes/no)	0.985	0.874-1.111
Alcohol (yes/no)	1.255	1.186-1.328

**: p<0.05 significant level; CI: Confidence Interval*

Table 3. Comparison of PTSD status and HTQ section I, PTGI total and subscales, and CD-RISC mean scores

	Non-PTSD Mean±SD	PTSD Mean±SD	t	p
HTQ Section I	16.48±8.22	19.37±7.42	-2.68	0.008
PTGI-total	56.68±20.90	62.54±18.54	-2.17	0.031
Relating to others	16.08±8.15	18.78±7.43	-2.51	0.013
New possibilities	13.47±5.44	14.37±5.40	-1.18	0.242
Personal strength	13.08±5.32	13.97±5.40	-1.34	0.183
Spiritual change	6.24±3.12	7.03±2.56	-2.08	0.039
Appreciation of life	7.81±3.64	8.37±3.67	-1.09	0.276
CD-RISC	58.16±19.96	60.45±16.60	-0.93	0.352

**: p<0.05 significant level*

Table 4. Correlation between PTGI total score and its subscale score with CD-RISC

	1	2	3	4	5	6	7
PTGI-total	1	0.80**	0.85**	0.80**	0.70**	0.78**	0.46**
Relating to others			0.56**	0.39**	0.45**	0.43**	0.26**
New possibilities				0.64**	0.48**	0.65**	0.41**
Personal strength					0.57**	0.66**	0.46**
Spiritual change						0.51**	0.29**
Appreciation of life							0.44**
CD-RISC							1

p<0.05 p<0.001** significant level*

ported higher scores on the subscales of relating to others (p<0.05) and spiritual change (p<0.05) of the PTG scale. The two groups' CD-RISC mean scores were not statistically different.

Resilience and posttraumatic growth relation

The results of the Pearson's correlation analysis showed that CD-RISC had a positive moderate correlation with the PTGI total score, a positive weak correlation with relating to others and spiritual change, a positive moderate correlation with

Table 5. Coefficients variables resulting from simple regression analysis

	Unstandardized coefficients		Standardized coefficients		
	B	St. error	Beta	t	p
Constant	31.207	35.054		8.91	<0.001
CD-RISC score	0.503	0.056	0.455	89.54	<0.001

new possibilities, personal strength and appreciation of life (Table 4).

A simple linear regression was calculated to predict PTGI based on CD-RISC. A significant regression equation was found ($F_{(1,308)}$=80.25, p<0.001) with an R^2 of 0.207. Participants' predicted PTGI is equal to 31.207+0.503 (CD-RISC) score when CD-RISC is measured. PTGI increases by 0.503 for each unit of CD-RISC (Table 5).

DISCUSSION

In the present study, high ratio of PTSD was found among Syrian refugees. The importance of this study is it is made as household survey. There were limited studies about mental health problems of Syrian refugees, and most of the recent studies were conducted at refugee camps. There is no information in the literature about the mental health of Syrian refugees who live outside of the camps. Although this study is not a prevalence study, it points high ratio of PTSD among Syrian refugees. The results of different studies conducted with Syrian refugees show significant differences in terms of rates of PTSD, between 27.2% and 83.4%.[3-7] Different rates can be due to the methodological differences and use of different scales.

The number of war-related traumatic events is found to be higher among refugees with PTSD. This result is consistent with the findings of other studies.[4,36] There are studies in the literature that have not identified any risk factor for PTSD[5] or identified some risk factors such as being female, highly educated, married,[37] a history of psychiatric disorder and a history of psychiatric disorder in the family[4] among Syrian refugees. In the present study, low income and desire to return to the home country variables were found to be risk factors for PTSD. The factors that affect the desire to return to home country among Syrian refugees were reported as being female, refugee location, family ties and property in Syria[38] and especially income or livelihoods opportunities in the host country.[39] Refugees who do not have good living conditions want to return.

It was found that PTG was higher in Syrian refugees with PTSD. PTG can be considered as a positive way of coping up with the traumatic event and PTSD symptoms. In some studies PTG and PTSD were found to be either not correlated[18,19] or negatively correlated.[9,12] On the other hand Pietrzak and colleagues showed higher PTG scores among Iraq veterans with PTSD,[17] Levine et al. showed a quadratic relationship between growth and PTSD symptoms and showed that growth is highest with average PTSD scores.[40]

In the present study, resilience was found to be positively related with PTG. Other studies have also shown a positive correlation between resilience and PTG.[25,28,41,42] Resilience was not found to be significantly different between the groups with PTSD and without PTSD. Another study among Congolese refugees in camp also did not show any significant difference in resilience among refugees with or without PTSD.[43] Additionally, another study found that resilience is an inverse predictor for psychological distress but not for PTSD.[44] Almendo and Glandon argued that resilience is not the absence of PTSD.[45] According to the result of this study, it can be suggested that the severity of the trauma may cause a normal response like PTSD to this abnormal situation, even if the person is resilient. It is important to address PTG, resilience and PTSD concepts with refugees. This is because the refugees, who are forced to migrate due to the war in their country, are not only suffering the negative consequences of war-related traumas but also having trouble of living in a culturally different country.

The high PTSD level in this study show that Syrian refugees suffer from the negative consequences of war-related traumatic events. In addition, it can be said that not only war-related trauma but also being a refugee is another factor that has effect on continuance of PTSD symptoms. PTG after traumatic events is an expected positive outcome and is known to enhance the

quality of life after traumatic events.[10] For Syrian refugees in Turkey who live outside the camps, who are exposed to war-related trauma, it is important to improve their resilience to promote PTG. Clinical interventions and social support programs should focus on increasing resilience. To improve successful coping and to achieve adequate functioning, a supportive environment is important. Having financial and social resources to respond to the demands of the difficult situation of being a refugee will be helpful to increase resilience.

The generalizability of the results of this study is limited to a group of refugees living outside of the camps in Turkey. This study has a cross-sectional design and does not show the development of psychological growth or symptoms over time. Convenient sampling is preferred for practical reasons, as Syrian refugees have settled in various places in Turkey. The data was collected by self-report instruments and not by clinical assessment.

There are limited number of studies in the literature that have investigated the relationship between PTSD, PTG and resilience, particularly among refugees. Future research may focus on especially current life events, social-financial support they receive, the acceptance from the host community and their adaptation to the new culture.

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