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Research Paper

Psychological problems and resilience among Syrian adolescents exposed to war

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ABSTRACT

There are very few holistic studies that consider a resilience and risk-oriented approach to Syrian adolescent refugees living in Turkey, and most of these studies have been conducted with relatively small samples. Furthermore, dissociation as a universal response to childhood trauma has been neglected by researchers in the study of Syrian adolescents. Therefore, this study aimed to correct this omission by investigating the level of psychological problems (especially dissociation) and resilience with the predictors of those levels, as reported by 430 Syrian adolescents aged between 12 and 18 in Turkey. The prevalence of the participants who had higher than the cut-off value in dissociation was 47.2% and in PTSD was 61.3%. Additionally, in the proportion of medium to severe levels, 72.8% of the participants had anxiety symptoms and 51.5% had depressive symptoms. The level of resilience among the adolescents was about average with 60.7% of the participants displaying moderate to exceptionally high resilience.While the high number of traumatic experiences and use of negative religious coping methods came to the fore as predictors of psychological problems, social support from family and friends and positive religious coping methods were the common predictors for the assessment of higher resilience. The findings from this study may be of assistance to the development of preventive intervention programs for adolescent refugees in general and Syrian adolescent refugees in particular.

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Introduction

Since the outbreak of the civil war in Syria, the world has been witnessing one of the biggest refugee[1] crises of all times. As of January 2022, more than 5.4 million Syrians were registered as refugees or asylum seekers in various countries; among which 46.8% are under age 18 and 69.1% are currently hosted by Turkey (UNHCR, 2022). Since adolescence is a critical developmental period, experiencing potentially traumatic events during war and flight are likely to have profound implications for an adolescent's development, mental health and well-being (Lustig et al., 2004; Masten & Cicchetti, 2016). However, the focus of the research to date has mostly focused on trauma-related psychopathologies and risk factors.

According to previous research, post-traumatic stress disorder (PTSD), followed by depression and anxiety, is the most common psychopathology seen in refugee adolescents, and it is significantly higher than in the general population (Attanayake et al., 2009). Studies conducted among Syrian adolescents at schools in Istanbul indicated that the prevalence of a probable PTSD diagnosis ranged from 18.3% (Gormez et al., 2018) to 51.0% (Eruyar, Maltby & Vostanis, 2020). High levels of depression were noted with rates between 27.0 to 47.9% in different studies, with the highest prevalence rate coming from the study in a refugee camp in Eastern Turkey (Ataç et al., 2018; Kandemir et al., 2018; Yayan, Düken, Özdemir & Çelebioğlu, 2019). Additionally, anxiety symptoms have been reported to range from 29.5 to 69.1% (Gormez et al., 2018; Javanbakht, Rosenberg, Haddad & Arfken, 2018; Kandemir et al., 2018; Perkins, Ajeeb, Fadel & Saleh, 2018; Yayan et al., 2019). Different childhood traumas have also been found to be related to dissociative disorders (Myrick et al., 2012; Nilsson & Svedin, 2006; Sar, Önder, Kilincaslan, Zoroglu & Alyanak, 2014; Yanık & Özmen, 2002). Recent studies on refugee adolescents have indicated that the rates of pathological dissociation were approximately 40.0% (Gušić, Cardeña, Bengtsson & Søndergaard, 2017, 2018). Although dissociation is considered to be a universal response to traumatic experiences (Carlson & Rosser-Hogan, 1991), the research on dissociation, especially among children and adolescents, is limited (Gušić, Cardeña, Bengtsson & Søndergaard, 2016). To the best of our

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[1] Turkey only grants 'Temporary Protection' status to the Syrian refugees, but the term 'refugee' is chosen over other terms due to its practicality.

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knowledge, this is the first study investigating dissociation in Syrian refugee children and adolescents.

Particularly in transition periods like adolescence, social support has been associated with increased well-being (Cicognani, 2011), better quality of life (Alsubaie, Stain, Webster & Wadman, 2019), life satisfaction (Kapıkıran, 2013) and resilience (Ozbay, Fitterling, Charney & Southwick, 2008). In the review conducted by Yaylaci (2018) on Syrian adolescents, it was noted that the lack of social support accelerated the emergence of psychological problems while the presence of social support was associated with resilience in adolescents. Coping is another factor, which plays an essential role for adolescents who are exposed to high risk factors. Religious coping methods involve making use of religious mechanisms to cope with problematic situations (Pargament, Feuille & Burdzy, 2011). Pargament, Smith, Koenig and Perez (1998) divided the religious coping methods they observed in their research into two categories: positive religious coping, which involves a secure relationship with God and a belief that there is meaning to be found in life; and negative religious coping, which involves a less secure relationship with God, and seeing the world as unimportant and ominous (García, Páez, Reyes-Reyes & Álvarez, 2017; Pargament et al., 1998, 2011). Religious forgiveness and purification, collaborative religious coping, seeking spiritual support, spiritual connection and benevolent religious reappraisal constitute positive religious coping methods while negative religious coping methods include reappraisal of God's power, punishing God reappraisals, demonic reappraisal, spiritual discontent, and interpersonal religious discontent (Pargament et al., 1998). Positive religious coping more reflects spiritual support and satisfaction. On the contrary negative religious coping is related to spiritual and interpersonal religious dissatisfaction (García et al., 2017). In a study conducted with Syrian refugees between the ages of 12−67, it was shown that there was a negative relationship between positive religious coping methods and depression (Ayten & Sağır, 2014).

The factors leading to different pathways of adaptation, and the risk factors of these pathways for adolescent and minor refugees, has long been the focus of research. However, protective factors and factors that positively impact the process of adaptation have been mostly neglected. Meanwhile, research on the influence of sex and age on the pathways of adaptation have been contradictory in nature (Fazel, Reed, Panter-Brick & Stein, 2012).

When we look at the research focused on refugee adolescents in Turkey, studies considering both risk factors as well as risk-oriented approaches and resilience are few in number (Ekinci, 2017; Gülersez, 2019). Further, these studies generally did not use a trauma scale, so the severity and intensity of traumatic experiences were not addressed. Moreover, the sample sizes were rather small, and they did not assess the probability of dissociation. Additionally, the different results in prevalence rates of psychological problems show that further research is needed with Syrian refugees in Turkey.

For this reason, while our research builds upon the previous literature regarding risk factors and resilience among refugee adolescents, we also aim to provide an examination of the mental health and well-being of Syrian adolescent refugees with a strength-based approach. In keeping with the strength-based focus, the main objective of this study was to reveal the levels of resilience, and related factors as well as the predictors of resilience in this population. Moreover, since the resilience perspective does not disregard deficits, the secondary objective of this study was to explore the levels of psychological problems as well as risks and the protective factors for the development of psychopathologies. In order to gain a comprehensive understanding on the well-being of Syrian adolescent refugees in Istanbul, underlying factors for both resilience and psychopathology will be examined in the same study (Masten, 2011).

Method

Participants

A total of 506 Syrian adolescent refugees between the age of 12 and 18 living in Istanbul who experienced the Syrian Civil War participated in this study. The participants were recruited from a non-governmental institution and nine middle schools, eight high schools and two temporary education centres in Istanbul affiliated with the Ministry of Education. Inclusion criteria included an age range of 12−18, being born in Syria and having emigrated to Turkey after the outbreak of the Syrian Civil War in 2011, being under temporary protection status in Turkey, and being literate. From all the participants who successfully completed the questionnaires (n = 506), due to the exclusion criteria (age, being born outside of Syria, and missing more than 15% data), in total the data of 430 adolescents was included in the study. The mean age of the participants was 15.5 (SD = 1.76). About 56.0% of the participants were female (n = 245) and a majority of the participants were high school students (73.4%, n = 316).

Procedure

A cross-sectional quantitative research was conducted from May to December 2019 in Istanbul. Ethical approval and necessary permissions for the study was issued by the Ethics Committee of Ibn Haldun University, Istanbul Directorate of National Education, and Istanbul Provincial Immigration Administration. In collaboration with the administration of each institution participating in the project, the study was conducted either in student classrooms or in designated meeting rooms. The informed consents were obtained either from the caregivers of the participants under the age of 18 or from 18-year-old participants themselves. Bilingual research assistants (Arabic-Turkish) supported the data collection process. Research assistants provided brief instructions to the participants regarding how to complete the scales and to clarify any unfamiliar language. No incentives were provided to respondents for participation.

Measures

In addition to the demographic form the Child and Youth Resilience Measure, the Cumulative Trauma Scale (Short Form, CTS-S), the Multidimensional Scale of Perceived Social Support (MSPSS), The Brief Religious Coping Scale (RCOPE), the Children's Revised Impact of Event Scale (CRIES-8), the Depression, Anxiety and Stress Scale-21 (DASS-21) and the Adolescent Dissociative Experiences Scale (A-DES) were used. All were provided in bilingual formats including Arabic and Turkish based on the preference of the participants. Validated translations were used for all questionnaires except the A-DES in which a translation and back-translation method was applied by our native Arabic speaking assistants to provide reliability and validity of the questionnaire.

Demographic form

We measured two main variables with the demographic form: demographic information and information regarding trauma and migration.

Cumulative trauma scale (CTS-S)

The self-report trauma scale developed by Kira (2001) consists of 32 items with three additional items added to the adolescent version. The CTS-S is a comprehensive measure that provides information about occurrence, frequency, type, appraisal, and age of different types of traumatic events (Kira et al., 2008). While occurrence indicates how many different types of trauma have been experienced, frequency indicates how many trauma experiences from different types of trauma have been experienced in total. Since trauma is an

experience that will have different effects on different people, beyond the numbers, there is also an assessment of “appraisal”, that is, how individuals are affected by each trauma. In the present study, because of the age range of our sample, the 28th, 29th and 30th items that are related to spouse, having children or being in work were removed. Also, three items covering sexual abuse were removed based on the sensitivity of the subject and feedback provided from the Provincial Directorate of National Education. These were replaced by two items from the Childhood Trauma Questionnaire Short Form, which is a widely-used scale in Turkey that investigates childhood trauma. Thus, the scale for measuring trauma used in the current study consisted of 31 items in total. It was expected that participants would respond to each item on a five-point Likert type scale ranging from 0 (never) to 4 (many times). If any traumatic event has occurred, questions regarding the age of the participants and impact of the events are answered as well. CTS-S shows sufficient reliability with Cronbach's alpha coefficient between 0.80 to 0.92 (Kira et al., 2012, 2013). The scale was used in different studies with Syrian refugees (Ibraheem, Al, Kira, Aljakoub & Ibraheem, 2017; Kira, Shuwiekh, Rice, Al Ibraheem & Aljakoub, 2017) and also in different Arabic speaking refugee samples including adolescents (Kira et al., 2008, 2012). The Cronbach’s alpha coefficient was .89 for total CTS-S score in this study.

Multidimensional scale of perceived social support (MSPSS)

In order to measure perceived social support from different resources, the MSPSS was developed as a 12-item self-report scale. The items are grouped into three subscales, which elicits information about three different sources of social support; family, friends and significant others (Zimet, Dahlem, Zimet & Farley, 1988). Participants were asked to rate their experience using a seven-point Likert scale (1: very strongly disagree, 7: very strongly agree). Higher scores indicate higher perceived social support. Scores obtained from items pertaining to each subscale are added and divided into four. As a result, the range of scores for subscales are between 3 and 21. In the original Turkish adaptation of the scale, the items with significant others were detailed as “dating, engaged, relative, neighbor, doctor”. However, in our study, the words "flirt" and "engaged" were excluded from the scale, considering the age group. The Arabic translation was taken from a study conducted with Lebanese participants (Merhi & Kazarian, 2012) and reliability was .87 Cronbach’s alpha for 12 items. The scale has been used in different cultures (Laksmita, Chung, Liao & Chang, 2020; Wilson, Yendork & Somhlaba, 2017) including with Syrian adolescent refugees (Sleijpen, Haagen, Mooren & Kleber, 2016). The Cronbach’s alpha coefficient was .90 for total MSPSS score in this study.

Children’s revised impact of event scale (CRIES-8)

An eight-item self-report scale was used to evaluate symptoms of posttraumatic stress disorder among children over eight years old (Perrin, Meiser-Stedman & Smith, 2005). It was developed from the original “Impact of Events Scale” (Horowitz, Wilner & Alvarez, 1979) by the Children and War Foundation (www.childrenandwar.org). The scale consists of intrusion and avoidance subscales, each containing four items. The participants rate their symptoms over the last week on a four-point Likert scale (0 = not at all, 1 = rarely, 3 = sometimes, 5 = often). The score obtained from the scale ranges between 0 and 40 and the cut off value is 17. Arabic and Turkish scales were used in this study. The internal consistency of Arabic CRIES-8 is sufficient with .71 Cronbach's alpha coefficient (Eruyar, Maltby & Vostanis, 2018). The Arabic version was previously used with Syrian refugee youth living in different countries (Özer, Şirin & Oppedal, 2013; Perkins et al., 2018; Sleijpen et al., 2016). In this study, the Arabic scale was edited according to the Turkish scale in order to create coherence between the Turkish and Arabic scales. The Cronbach’s alpha coefficient was .82 for total CRIES-8 score in this study.

Adolescent dissociative experiences scale (A-DES)

The A-DES is a 30-item self-report questionnaire developed by Armstrong, Putnam, Carlson, Libero and Smith (1997) to measure 30 different dissociative experiences in 11 to 17 year-old adolescents. Participants respond to the questions based on the frequency of their experiences with a 11-point Likert scale (0 = Never, 10 = Always). The A-DES score is calculated by taking the mean of the total scores. Thirty different experiences in the A-DES are examined in four groups; dissociative amnesia, absorption and imaginative involvement, passive influence, and depersonalization and de-realization. The Turkish adaptation study yielded a Cronbach’s alpha of .93 for each group (Zoroglu, Sar, Tuzun, Tutkun & Savas, 2002). The cut-off score was determined as 3.0 for the Turkish version (Sar et al., 2014). The Arabic version of the A-DES was formed via a translation back-translation method by native Arabic speakers. The CFA yielded good model fit indices (CFI = .91, TLI = .90, $RMSEA$ = .05, $SRMR$ = .05, $\chi 2$ = 745.89, p > .05). The Cronbach's alpha coefficient was .93 for total A-DES score in this study.

Depression anxiety stress scale-21 (DASS-21)

The DASS-42 was developed by Lovibond and Lovibond (1995) as a 42 question scale in order to assess depression, anxiety and stress and was later shortened into 21 items. The DASS-21 consists of three subscales: depression, anxiety and stress. Each subscale has seven items. Participants rate their experiences over the last week on a four-point Likert scale (0: did not apply to me at all, 3: applied to me very much or most of the time). The subscale scores are calculated by summing up related items and multiplying them by two. The total score is calculated by summing all subscale scores. The higher scores reflect higher depression, anxiety or stress levels. Cut-off scores for each subscale are presented in Table 1. The Arabic version was taken from a study with Arabic speaking immigrants in Australia (Moussa, Lovibond, Laube & Megahead, 2017). Depression and anxiety subscales were utilized in the present study. The both subscales show high reliability with Cronbach’s alpha of .93 and .90 for depression and anxiety respectively. The Arabic scale was used in different studies with Syrian adult refugees (Kubitary & Alsaleh, 2017; Sim, Fazel, Bowes & Gardner, 2018), Syrian youth refugees (Kheirallah et al., 2019) and Syrian university students (Al Saadi, Zaher Addeen, Turk, Abbas & Alkhatib, 2017). The DASS has been administered to adolescents who are older than 14, yet it was stated that it could be used with younger adolescents who are aged down to 12 (Patrick, Dyck & Bramston, 2010). The Cronbach’s alpha coefficient was .82 for total DASS-21 score in this study.

The brief religious coping scale (Brief RCOPE)

As one of the most common self-report measures, the 14-item Brief RCOPE (Pargament et al., 1998) was utilized in order to assess to what extent Syrian adolescents use religious coping methods when they face traumatic events. The Brief RCOPE consists of two subscales: positive religious coping and negative religious coping with seven items in each subscale. Participants were asked to rate their experiences on a four-point Likert scale response ranging from 0 (not at all) to 3 (a great deal). In this study, we used Turkish and Arabic versions of the scale taken from a study with Syrian refugees between the ages of 12 and 67 living in Turkey (Ayten & Sağır, 2014). The Cronbach’s alpha coefficient was .72 for positive religious coping, .53 for negative religious coping and .67 for overall religious coping. One of

Table 1
Cut-off points for DASS-21.

	Normal	Mild	Moderate	Severe	Extremely Severe
Depression	0 – 9	10 – 13	14 – 20	21 – 27	28+
Anxiety	0 – 7	8 – 9	10 – 14	15 – 19	20+

Table 2
Summary of linear regression models for predicting resilience, PTSD and dissociation.

	Dependent Variables											
	Resilience				PTSD				Dissociation			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
Independent Variables	*β*	*SE B*	*B*	*SE B*	*β*	*SE B*	*β*	*SE B*	*β*	*SE B*	*β*	*SE B*
Gender (female)	.76*	.81			1.53	.95			.33	.17		
Age (middle school)	1.62	.89	1.67***	.89	−3.37***	1.05	−3.46***	1.04	−.38**	.19	−.38**	.19
Departing from Syria (year)					−.38	.36	−.60*	.27				
Living in Turkey (year)					−.36*	.37						
Cumulative Trauma –Occurrence	−.40*	.19	−.49**	.11	.47***	.21	.56***	.13	.18***	.05	.11***	.02
Negative Appraisal of Trauma	−.03	.08			.05	.09			−.03	.02		
Positive Appraisal of Trauma									−.05*	.04		
Social Support from Family	3.09***	.31	3.02***	.29					−.1*	.07	−.12**	.06
Social Support from Friends	1.68***	.26	1.66***	.23					−.05	.05		
Social Support from Special Others	−.10	.28							.03	.06		
Positive Religious Coping	.34***	.09	.36***	.08	.32***	.11	.37***	.11	−.02*	.02		
Negative Religious Coping					.53***	.12	.49***	.11	.13***	.02	.12***	.02
R^2	.48	.51		.21	.21	.21	.20					
F for Change in R^2	55.47***	110***		14.24***	21.91***	11.01***	25.68***					

*$p < .05$, **$p < .01$, ***$p < .001$.

the items, "Questioned the power of God", was removed from the scale due to low factor load and the remaining analysis was conducted with the 13-item version. The Cronbach's alpha coefficient was .79 for total Brief RCOPE score in this study.

Child and youth resilience measure (CYRM-R)

Resilience in childhood and youth was evaluated by the CYRM-R, the 17-item version of the CYRM-28 (Jefferies, McGarrigle & Ungar, 2018; Ungar, 2008). The CYRM-R consists of two subscales: intra/interpersonal resilience and caregiver resilience. Participants were expected to answer each item on a five-point Likert type scale (1 = not at all, to 5 = a lot). Total score ranged between 17 and 85. According to Resilience Research Centre, 2019, the total score was evaluated as < 63 low resilience, 63 - 70 moderate resilience, 71 – 76 high resilience and ≥ 77 exceptional resilience. The higher the scores, the greater the resilience. Since the 17-item version was not used on Syrian refugees before, we applied a factor analysis for this scale. The results of confirmatory factor analysis (CFA) showed a good model-data fit (*CFI* = .92, *TLI* = .91, *RMSEA* = .06, *SRMR* = .05, $\chi 2$ = 268.03, $p >$ .05). The Cronbach's alpha coefficient was .86 for total CYRM score in this study.

Data analysis

All statistical analyses were performed with RStudio 1.3.1093 (RStudio Team, 2020). Descriptive analysis and Pearson Correlation Coefficient were utilized. Stepwise Linear Regression was also used to determine which variables predict resilience status, PTSD, dissociation, depression and anxiety levels. For each dependent variable, linear regression models were run with independent variables that have a significant correlation among each other. As shown in Tables 2 and 3, at step 1 (Model 1), correlated predictive variables were analysed. At Step 2 (Final Model) the principle of multicollinearity was considered and nonsignificant variables were excluded (Tables 2 and 3).

Results

Descriptive statistics

The majority of the participants (75.5%) were high-school students. Around 92% of the participants had never resided in a refugee camp, and 84% reported living with their parents. On average,

Table 3
Summary of linear regression models for predicting depression and anxiety.

	Dependent Variables							
	Depression				Anxiety			
	Model 1		Model 2		Model 1		Model 2	
Independent Variables	*β*	*SE B*	*β*	*SE B*	*β*	*SE B*	*β*	*SE B*
Gender (female)	.25	.43			.84	.45		
Age (middle school)	−.70**	.48			−1.43***	.48	−1.46***	.48
Departing from Syria (year)	−.23*	.13	−.24*	.13				
Living in Turkey (year)								
Cumulative Trauma –Occurrence	.28***	.10	.34***	.06	.45***	.10	.32***	.06
Negative Appraisal of Trauma	.04	.04			−.06	.04		
Positive Appraisal of Trauma	−.72***	.17	−.77***	.14	−.49***	.17	−.45***	.14
Social Support from Family	−.11	.14						
Social Support from Friends	−.03	.15			.09	.14		
Social Support from Special Others					.00**	.05		
Positive Religious Coping	.24***	.05	.24***	.05	.30***	.05	.29***	.05
Negative Religious Coping	.24	.24			.53***	.12	.49***	.11
R^2	15.33***	33.77***		.24	.23			
F for Change in R^2	55.47***	110***		16.35***	31.01***			

*$p < .05$, **$p < .01$, ***$p < .001$.

participants migrated to Turkey from Syria 4.75 years ago. Approximately one third of the participants had to leave at least one family member behind because of the war. The mean number of potentially traumatic events experienced was around 5 with a range between 0 and 29. In terms of satisfaction with the living situation in Turkey, 40% of the participants with regard to themselves and 45% of the participants with regard to their parents responded as being satisfied. Moreover, approximately 63% of the participants believe that they will experience good things in the future. Around 21% of the adolescents reported having previous psychological problems and 9% of them reported that their parents had psychological problems.

In terms of psychological problems, 47.2% of the participants scored above the A-DES cut-off for dissociative experiences (M = 3.01, SD = 1.86), 51.4% had moderate to severe levels of depression (M = 14.55, SD = 9.90), 72.7% scored moderate to severe levels of anxiety (M = 15.68, SD = 9.81). 61.2% of the participants scored higher than the cut-off value of CRIES-8 (M = 13.36, SD = 9.89). In terms of resiliency, 60.7% of the participants had moderate to exceptionally high resilience (M = 64.52, SD = 10.98).*Relationships among variables*

Resilience has a positive correlation with perceived social support from family (r = .61, p < .001), perceived social support from friends (r = 0.48, p < .001), and perceived social support from significant others (r = .42, p < .001). Additionally, resilience is positively correlated with positive religious coping (r = .22, p < .01). On the other hand, resilience was negatively correlated with depression (r = −.42, p < .001), occurrence of traumatic events (r = −.34, p < .001), negative appraisal of trauma (r = −.26, p < .01), dissociation (r = −.27, p < .01), and anxiety level (r = −.30, p < .001).

This study has identified PTSD, dissociation, depression and anxiety as the critical psychological problems. Furthermore, the results have shown that all these factors were closely related to each other. However, negative religious coping was significantly correlated with PTSD (r = .31, p < .001), dissociation (r = .31, p < .01), depression (r = .39, p < .01) and anxiety (r = .46, p < .001). Yet, positive religious coping was also correlated with PTSD (r = .31, p < .001). Moreover, occurrence of traumatic events was also significantly correlated with PTSD (r = .26, p < .01), dissociation (r = .30, p < .01), depression (r = .37, p < .001) and anxiety (r = .35, p < .001). Negative appraisal of trauma was also correlated with PTSD (r = .23, p < .01), depression (r = .30, p < .001), anxiety (r = .25, p < .001), and dissociation (r = .23, p < .01). In contrast, adolescents' perceived social support from family, friends and significant others were negatively correlated with depression (r = −.34, p < .001; r = −.16, r = −.19, p < .05), anxiety (r = −.26, p < .001; r = −.12, p < .05; r = −.11, p < .05) and dissociation (r = −.21, p < .01; r = −.12; r = −.12, p < .05). The duration of living in Turkey was negatively correlated with PTSD level (r = −.13, p < .05) and the duration after departing from Syria was negatively correlated with depression (r = −.15, p < .05). Finally, age was positively correlated with PTSD (r = .22, p < .05) and dissociation (r = .13, p < .05).

Predicting variables

The summary of linear regression models predicting resilience, PTSD, dissociation, depression and anxiety are represented at Tables 2 and 3. The Final Model of linear regression model predicting resilience explained 48% of the total variance by the independent variables (F (4, 425) = 110, p < .001). Receiving high social support from family (β = 3.02, p < .001) and friends (β = 1.66, p < .001), being younger (attending middle school) (β = 1.67, p < .001), using more positive religious coping methods (β = 0.36, p < .001) and experiencing less trauma (β = −0.47, p < .001) were significant predictors of resilience.

Of the total variance at the final model, 19% was explained by PTSD (F (5, 424) = 20.13, p < .001), 20% was explained by dissociation (F (4, 425) = 25.68, p < .001), 24% was explained by depression (F (4, 425) = 33.77, p < .001) and 23% was explained by anxiety (F (4, 425) = 31.01, p < .001).

Being older (attending high school) was a significant predictor of PTSD (β = −3.46, p < .001), dissociation (β = −.38, p < .001) and anxiety (β = −1.43, p < .001). Experiencing more trauma was a significant predictor of PTSD (β = .56, p < .001), dissociation (β = .11, p < .001), depression (β = .34, p < .001) and anxiety (β = .32, p < .001). Using more negative religious coping methods was a predictor of PTSD (β = .49, p < .001), dissociation (β = .12, p < .001), depression (β = .24, p < .001) and anxiety (β = .29, p < .001). Using more positive religious coping methods was also a predictor of PTSD (β = .37, p < .001). Receiving less social support from family was a predictor of dissociation (β = −.12, p < .001), depression (β = −.77, p < .001), and anxiety (β = −.45, p < .001). More recently departing from Syria was a predictor of PTSD (β = −.60, p < .05), depression (β = −.24, p < .05).

Discussion

The main purpose of this research was to determine the levels of resilience and the predictors of resilience among Syrian refugee adolescents who were forcibly displaced from Syria to Turkey after the commencement of the war. The resilience level of the present sample can be considered as average or slightly above the average. Protective factors that predict higher resilience in this study were: perceived social support from family, social support from friends, positive religious coping methods, and the lack of traumatic experiences. Perceived social support from family was notably high (Zimet et al., 1988) in this study, which also serves as a resilience increasing mechanism despite the risks adherent in this population. According to a systematic review on refugee children, as the perceived social support increases, the resilience also increases (Fazel et al., 2012). In another study comparing the coping methods used by Palestinian adolescents, religious coping methods were found to be the most powerful and widely used strategy in dealing with loss (Kira, Alawneh, Aboumediene, Lewandowski & Laddis, 2014).

The secondary objective of this study was to determine the level of psychological problems and the characteristics of Syrian adolescents who develop psychological problems. In the present study, approximately 63% of the participants had symptoms of post-traumatic stress disorder. The rate in our study seems to be higher than a previous study conducted with Syrian children aged 8–17 in Turkey using the same scale (Eruyar et al., 2020). Being an older age was identified as a predictor of PTSD in our study and the older sample (12 to 18) of the present study could be a possible explanation of higher PTSD scores. Moreover, age also has been found to have an effect on dissociation, and anxiety. According to the results of the present study, PTSD, dissociation and anxiety tendency of high school students is higher than middle school students. Here, we think that the cumulative effect of exposure to risk factors increases with the increasing age. One potential explanatory factor here that should be considered is that Syrian adolescents who were attending middle school at the time of investigation were very young during the war and migration. This might have protected them from increased rates of exposure to risk factors that impacted the high school respondents in our study. Observing such high prevalence rates of PTSD in the high school population, especially considering the length of time since leaving Syria was around five years, is alarming. In addition, as the number of years spent in Turkey increased, the rates of PTSD decreased.

Almost half of our participants scored above the clinical cut off in the A-DES. The high rates of dissociative experiences in the sample could be explained by high numbers of traumatic experiences (Dalenberg et al., 2012; Ghannam & Thabet, 2014). High dissociative experiences could be a sign of dissociative disorders (DD) (Santo & Abreu, 2009; Sar et al., 2014; Tutkun et al., 1998). Considering that DD has a unique treatment protocol, specific and more comprehensive DD studies should be conducted with refugee adolescents. In the present study, the mean score of A-DES is calculated as 3.2, which is

similar to Ghannam and Thabet's (2014) study on Palestinian war exposed adolescents that reported as A-DES as 2.6. Gušić, Malešević, Cardeña and Søndergaard (2018) reported that 40% of refugee adolescents in Sweden had pathological dissociation measured by the same measure (A-DES). The only difference in the Swedish study was the sample size, as theirs was much smaller due to the semi-structured interviews conducted as the second step of their study. In the present study, 51.5% of the participants had depressive symptoms and 72.8% had anxiety symptoms, all of which indicates at least moderate to severe levels of these factors. Similar to our findings, in another study conducted with Syrian refugee children and adolescents living outside the camps in Turkey, depressive symptoms were found in almost half (47.9%) of the participants, and anxiety symptoms in 53.2% (Kandemir et al., 2018). The anxiety rates in our study were comparable to another study (69.0%), which was conducted with Syrian refugees in Istanbul (Gormez et al., 2017).

In our study, we concluded that exposure to trauma and negative religious coping methods are among the factors that increase the risk of developing PTSD, dissociation, depression and anxiety. Concerning the negative religious coping methods, similar to our study, Carpenter, Laney and Mezulis (2012) found that it strengthens the relationship between stress and depression. The result of a meta-analysis also shows that there is a positive relationship between negative religious coping and depression, anxiety, and stress (Ano & Vasconcelles, 2005). Both the negative and positive religious coping methods showed symptom-enhancing effects on levels of PTSD in the present study. Aflakseir and Coleman (2009) found similarly that negative religious coping methods correlate positively with PTSD. One unanticipated finding of the present study was the positive association between positive religious coping methods and PTSD. However, this result is consistent with those of Ayten and Sağır (2014) who also worked with Syrian adolescents in Turkey. According to this study, as the use of positive and negative religious coping methods increased, their depressive tendencies also increased. In addition, the results of Ayten and Sağır (2014) further support our findings that negative religious coping methods are a stronger predictor of psychological problems than positive religious coping methods. However, in another study conducted with the Arab refugees in Turkey, positive correlation was found between positive (not negative) religious coping methods and mental health symptoms (Karakaya Aydın, 2019). Karakaya Aydın (2019) explained that the unexpected finding stemmed from the increased exposure to trauma of the participants in the study which had led them to increase their coping methods. Our study similarly found a significant positive correlation between positive religious coping methods and increased trauma experience. The frequency of traumatic experiences among the participants in our sample varies widely; however, the average number of such experiences is not low. Adolescence, which is the transition period from childhood to adulthood, contains unique difficulties in terms of developmental features. Additional war related difficulties, post-migration living difficulties and temporary protection status in Turkey may increase the risk of developing psychopathology for this group. As the number of traumatic experiences increase, the more symptoms of PTSD, depression, stress, and anxiety appear (Kheirallah et al., 2019).

In addition to the factors listed above, the duration of time since leaving Syria has emerged as a significant predictor of depression and more recent arrival in Turkey as a predictor of PTSD. Depressive tendencies decrease as the duration of time since leaving Syria increases. Similarly, PTSD tendencies decrease as the duration of living in Turkey increases. Consistent with previous research, perceived social support received from the family was found to be a predictor associated with depression and stress (Oppedal, Özer & Şirin, 2018) and PTSD (Gottvall, Vaez & Saboonchi, 2019). In line with another study with Syrian adolescents in Turkey, girls in our sample have a greater tendency to become distressed (Kandemir et al., 2018).

This study has a number of limitations. First of all, due to the cross-sectional survey design, we were not able to delineate any causal relationship between study variables. Moreover, some of the instruments were not previously validated for Syrian adolescents. However, good psychometric properties were displayed. One of the other main challenges was related to language. Many of the participants wanted to fill in the questionnaires in their native language (Arabic); however, most had not received formal education in Arabic.

Conclusion

Although war, migration and resettlement experiences are likely to increase the risk of developing psychological problems, resilience was a common phenomenon among the adolescent Syrian refugees in Turkey who participated in this study. Resilience building factors such as perceived social support from family and friends, positive religious coping methods and lack of traumatic experiences came to the fore. The study has identified being in an older age group, the number of traumatic events, and using negative religious coping methods as the common risk factors for PTSD, dissociation, depression and anxiety. Moreover, the duration of time since leaving Syria has been identified as a significant predictor of depression and more recently settling in Turkey as a predictor of PTSD. For this reason, it would be useful to identify those who should be prioritized in the prevention and intervention programs according to the age, intensity of the trauma experience, duration of time since leaving Syria as well as recently settling in Turkey in order to raise awareness about negative religious coping mechanisms.

Considering that most of the Syrian refugees settled in Turkey and approximately 45% of them are under the age of 18, the findings of our study are thought to contribute to the formation of an important infrastructure for preventive programs and intervention programs in order to improve the resilience and prevent psychological problems that may occur in adulthood. Finally, we hope that our study contributes to the research on the prevalence of dissociative experiences among war-traumatized Syrian adolescents.

Author contrubution statements

BU, MY and CA were involved in study conception and design. FT, ET and EA collected the data. BU and FT completed the data analysis. BU, FT, ET and EA wrote the first draft. All authors interpreted the results and reviewed the final manuscript.

Declaration of Competing Interest

All authors declare that they have no competing interests.

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