

Risk and resilience for psychological distress amongst unaccompanied asylum seeking adolescents

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Background: To investigate the level of posttraumatic stress and depressive symptoms, and background risk and protective factors that might increase or ameliorate this distress amongst unaccompanied asylum-seeking children and adolescents (UASC). **Methods:** Cross-sectional survey carried out in London. Participants were 78 UASC aged 13–18 years, predominantly from the Balkans and Africa, compared with 35 accompanied refugee children. Measures included self-report questionnaires of war trauma, posttraumatic stress and depressive symptoms. **Results:** UASC had experienced high levels of losses and war trauma, and posttraumatic stress symptoms. Predictors of high posttraumatic symptoms included low-support living arrangements, female gender and trauma events, and increasing age only amongst the UASC. High depressive scores were associated with female gender, and region of origin amongst the UASC. **Conclusion:** UASC might have less psychological distress if offered high-support living arrangements and general support as they approach the age of 18 years, but prospective studies are required to investigate the range of risk and protective factors. **Keywords:** Depressive symptoms, high support, posttraumatic stress symptoms, refugees, unaccompanied asylum-seeking children, war trauma. **Abbreviations:** UASC: unaccompanied asylum-seeking children; ARC: accompanied asylum-seeking and refugee children; HTQ: Harvard trauma questionnaire; IES: Impact of Event Scale self-report questionnaires; BDRS: Birlson Depression Self-Rating Scale.

Across the world there are large but unknown numbers of displaced and unaccompanied refugee children (Human Rights Watch, 2006). They are sent away from their families, or flee from their communities because of fear of, or experience of, persecution, organised violence or war (UNHCR, 1994). There is a continuing flow of unaccompanied asylum-seeking children into resettlement countries. Estimates of the numbers in the UK in the first part of the decade, 2000–2006, suggest there are approximately 5,500 (Refugee Council & BAAF, 2001; Wade, Mitchell, & Baylis, 2005). Other resettlement countries including the Netherlands (Bean, Derluyn, Eurelings-Bontekoe, Broekaert, & Spinhoven, 2007a) and the USA (Geltman et al., 2005; McKelvey & Webb, 1995) have also received large numbers of unaccompanied asylum-seeking children and adolescents.

Young people who experience war events and displacement have elevated rates of psychopathology, especially posttraumatic stress disorder (Fazel, Wheeler, & Danesh, 2005). Specific factors appear to be associated with different symptom clusters: exposure to violent events and maltreatment increase the risk of posttraumatic symptoms (Heptinstall, Sethna, & Taylor, 2004; Smith, Perrin, Yule, Hacam, & Stuvland, 2002; Thabet, Abed, & Vostanis, 2004), while experience of losses and ongoing stressors and

problems in resettlement countries increase risk of depression (Heptinstall et al., 2004; Sack, Clarke, & Seeley, 1996). Unaccompanied asylum-seeking children and adolescents (UAS) (defined as those aged under 18 years) are a group who may have experienced a high level of adversity, and thus would appear to be at increased risk of psychiatric disorder. The large numbers of children involved indicate the importance of identifying the causes of psychological distress and ameliorating factors.

Previous studies of UASC have investigated those in resettlement countries from diverse countries and cultural backgrounds. Reasons for leaving home countries include a high level of persecution or witnessing of killings and war acts (Thomas, Thomas, Nafees, & Bhugra, 2004). This war exposure, as well as the separation from family, increases the risk of psychopathology (Bean et al., 2007a; McKelvey & Webb, 1995). Furthermore, after arrival in resettlement countries the quality and type of support such as living arrangements is important. Same ethnic group contact has been found to reduce posttraumatic stress and depressive symptoms (Geltman et al., 2005; Porte & Torney-Purta, 1987). A recent large study from the Netherlands found that those living in residential settings (with 24-hour supervision, such as foster care and small living groups) reported less distress (internalising symptoms) than those living in large reception centres (Bean, Eurelings-Bontekoe, & Spinhoven, 2007b).

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Nevertheless, living arrangements accounted for only a very small proportion of the risk for psychological distress, probably because most of the adolescents had support, and few lived independently or in unsupported arrangements.

Earlier studies have not investigated whether UASC have experienced a higher level of war trauma in their countries of origin than an accompanied comparison group. Risks may operate at a later stage during journeys or upon arrival in resettlement countries. When they reach resettlement countries, the level of support and care arrangements may reduce the psychological distress caused by past adversities. The effect of family separation, and the extent to which supportive living situation might ameliorate the distress caused by past traumatic events, is uncertain. In view of the high numbers in England living independently and with low support (Wade et al., 2005), this is an important aspect of public mental health. Furthermore, no previous studies have been carried out into the psychological adjustment of UASC in the UK.

The specific aims of this study were to investigate, first, whether UASC had experienced a higher level of past adversities and war trauma than accompanied asylum-seeking and refugee children (ARC), and second, whether the UASC had higher levels of psychological distress. The third aim was to identify whether past adversities, including war trauma, might be associated with higher levels of distress, and what factors including living arrangements ameliorate their effects.

Methods

Sample

1 Unaccompanied asylum-seeking adolescents. They were recruited through the City of Westminster local authority Department of Social Services, during 2002–3. They were aged 18 years or less, and all resided in London. Eighty-one unaccompanied asylum-seeking children were identified. One of this group refused to participate in the study. For four individuals incomplete data were collected, so they were excluded. Almost complete data were obtained on 76 children. In addition, two adolescents from the school sample (see below) were UASC so they were included in the unaccompanied group, giving a total of 78.

2 Accompanied asylum seeking and refugee adolescents. This sample was a subgroup from a study of adolescent mental health carried out with pupils at a secondary school in the City of Westminster. This school was known to have a multiethnic population of pupils, with many from asylum-seeking and refugee backgrounds. They lived predominantly in North London, with the majority in the central boroughs of Kensington and Chelsea, Westminster and Camden.

The data were collected in three waves, during 2003–4, for pupils in school years 9, 10 and 12 (aged 13–19 years). There were a possible 623 pupils eligible to be included, but for 64 pupils parents refused con-

sent to participate. One hundred and ninety-nine pupils did not complete the questionnaires for many reasons, such as school absence on the day of its administration (work experience, sickness, school refusal or truanting) and did not complete questionnaires when requested individually. Overall 347 completed questionnaires were collected out of a possible 610, giving a response rate of 56.9%. Of the questionnaires returned, 70 were completed by pupils who indicated they were from asylum-seeking or refugee backgrounds. Since the study aims included the investigation of past war trauma, only asylum-seeking and refugee adolescents who had migrated to the UK aged 10 years or older were included, as it was thought that migration at an earlier age would result in unreliable reporting of war events and other past refugee experiences. From the 70 questionnaires returned by asylum-seeking or refugee pupils, there were 35 by pupils who had migrated since the age of 10 years or over, and this constituted the comparison group.

Procedures

The study was approved by St Mary's Local Research Ethics Committee.

1 Unaccompanied asylum seeking adolescents. The unaccompanied group were identified by accessing social work registers from City of Westminster local authority Department of Social Services. They were supported by either the asylum team, the looked-after children's team or the team for care leavers. Recruitment to the study was facilitated by the involvement of the allocated social workers for the young people, who were able to introduce the investigator to many, or discuss the study prior to the investigator contacting them. The interviews and assessments took place either at their place of residence or at social work offices. Apart from two individuals from Kosovo who spoke Albanian, all members of this group spoke at least intermediate English, did not need interpreters and could answer the questionnaires in the English language. The proformas and questionnaires of psychological distress were completed by the participant, or the investigator when there were literacy difficulties.

2 School sample. The questionnaires were administered in classroom settings to the majority of pupils. Those who had little or no spoken English completed the questionnaires in a separate room, where they received their usual teaching. Only one child in the accompanied group required translation of the questionnaires (into Chinese). Pupils who did not attend the classrooms to complete the questionnaires were sent them and 29 were obtained in this way.

Measures

For the UASC background data regarding age, cultural, family, and migration background, care histories, and living arrangements were assessed by structured interview with one of the investigators (AC). This information was confirmed from social work case notes and recorded on a pro forma. In view of the anticipated difficulty for

the participants in reporting parental occupation, and the uncertain meaning of this for people who grew up outside the UK as an indicator of socioeconomic background, information was obtained that reflects affluence: family ownership of car, fridge and television. These indicators of socioeconomic background have been established in international child and adolescent mental health research (Curie, Elton, Todd, & Platt, 1997; von Rueden, Gosh, Rajmil, Bisegger, Ravens-Sieberer, and the European KIDSCREEN group., 2006).

Adolescents also completed the following self-report questionnaires.

1. Harvard trauma questionnaire. Past war trauma events were assessed using the Harvard trauma questionnaire (HTQ) completed by the adolescent (Mollica et al., 1992). This questionnaire covers 17 types of maltreatment and war events, which are rated on the basis of proximity to the event (experienced, witnessed, heard about, and no involvement). The HTQ score can be used to derive a score for the total number of war events experienced, and also a total score based on the summation of values for the number of war events experienced, witnessed, or heard about (total trauma events). The questionnaire was originally developed with a scale of posttraumatic symptoms, for investigation of South East Asian refugees. The instrument has good reliability for trauma-related events, with inter-rater reliability of .93, test-retest reliability over one week using Pearson correlation of .92, internal consistency Cronbach coefficient alpha of .90, and sensitivity of 78% and specificity of 65% (Mollica et al., 1992). It has been translated into many languages and been used with adults and adolescent populations from many countries, including the Balkans (Jones & Kafetsios, 2005).

2. Impact of Event Scale. Psychological symptoms were assessed using the shortened Impact of Event Scale self-report questionnaires (IES) to assess post-traumatic symptoms (Horowitz, Wilner, & Alvarez, 1979; Stallard, Velleman, & Baldwin, 1999). This 15-item questionnaire is composed of two subscales, with 7 items for intrusion and 8 items for avoidance. Combined, the scale has a threshold for high risk of disorder of 35, and has good discrimination for cases, with a sensitivity of 66.7% and specificity of 92.4% and positive predictive value of .722 (Stallard et al., 1999).

3. Birlson Depression Self-Rating Scale (BDSR). This is an 18-item scale, scored on a 3-point scale (with 8 items reversed for scoring). Good internal consistency has been reported (Birlson, 1981). A cut-off score of 15 and above is six times more likely to be associated with a diagnosis of depression, and the scale has good discrimination for depressed and non-depressed cases, with specificity of 77% and sensitivity of 64% (Birlson, Hudson, Buchanan, and Wolff, 1987).

Statistical analyses

The data was analysed using SPSS version 14 & 15. Differences between groups for continuous variables were assessed using *t*-tests for independent samples and non-parametric tests for skewed samples. Cat-

egorical data were assessed using the Chi squared statistic, with Yates correction for two by two contingency tables. To avoid analysis with small cell sizes, for region, those in the Asian and South American groups (mainly Christian and/or spoke European languages) were merged with the European group to give three regions of origin (see Table 1). Living arrangement fell into seven categories (see Table 1), but in view of the small numbers of those living in children's homes, this group was merged with those living in semi-independent accommodation (as they were both high-support arrangements); those living with one parent were merged with those living with other family members (as they will all have experienced losses/separations from significant family). The general linear model for univariate analysis was used to identify associations with the outcome variables IES total scores and BDRS. Fixed factors were group (unaccompanied or accompanied), gender, region of origin, and living arrangements. Covariates for the analysis were total trauma events, age and months lived in the UK. For each dependent variable, there was firstly analysis using fixed factors group and gender, and then region of origin. Then group (unaccompanied or accompanied) was substituted by living arrangements, investigated with a general linear model for univariate analysis by contrasts, using Sidak correction, with gender and covariates total trauma events, age and months lived in the UK. Finally, in order to investigate the most important predictors of IES and BDRS scores, hierarchical regression analysis was carried out. Statistics where $p < .05$ and 95% confidence intervals are given.

Results

Sociodemographic background

The sociodemographic characteristics of the two groups are given in Table 1.

There were 78 UASC and 35 ARC, both groups having the same median age of 17.00 years, and no significant differences with regard to gender for the groups. Children from both groups came from many countries but when grouped into regions there were significantly more UASC from Europe and Africa, and fewer from the Middle East, Chi square 21.642, $p = .000$. This is also reflected in the fact that a higher proportion of the UASC were Christian and more of the ARC were Moslem (Chi square 8.809, $p = .012$). Attempts were made to assess the socioeconomic background of the young people by inquiring about parental occupation, but some did not know their father's occupation or they had been killed or disappeared, and others were described as businessmen or self-employed but it was unclear what this represented with regard to economic status. Mothers were predominantly housewives, 43/75 (57.3%) for the UASC and 14/29 (48.3%) for the ARC. There is a suggestion that the UASC came from less affluent homes as a lower proportion had fridges, Chi square 4.593, $p = .066$. The UASC had spent significantly less time in the UK, mean 22.37 months (SD 16.966) compared with ARC 48.56 months (SD

Table 1 Sociodemographics of the unaccompanied asylum-seeking and accompanied refugee children

	Unaccompanied asylum-seeking children <i>n</i> = 78	Accompanied asylum-seeking and refugee children <i>n</i> = 35	Statistics MW U-test Chi squared <i>p t</i> -test
Age in years median (range)	17.00 (13–18)	17.00 (14–19)	MW test 1344.000 <i>p</i> = .839
Gender			Chi square
male (%)	52 (66.7)	17 (48.6)	3.327 df 1, <i>p</i> = .068
female	26 (32.9)	18 (52.9)	
<i>Region and nationality</i>			
Number (%)			
Europe	26 (33.4)	8 (22.9)	
Kosovo	21 (26.9)	7 (20.0)	
Macedonia	2 (2.6)	0 (0)	
Albania	3 (3.8)	0 (0)	
Moldova	0 (0)	1 (2.9)	
Africa	43 (55.2)	9 (23.7)	
Ethiopia	20 (25.6)	1 (2.9)	
Eritrea	4 (5.1)	0 (0)	
Somalia	4 (5.1)	6 (17.1)	
Sudan	0 (0)	1 (2.9)	
Kenya	1 (1.3)	0 (0)	
Congo	2 (2.6)	0 (0)	
Angola	8 (10.1)	0 (0)	
Liberia	1 (1.3)	0 (0)	
Guinea	1 (1.3)	0 (0)	
Rwanda	1 (1.3)	1 (2.9)	
Burundi	1 (1.3)	0 (0)	
Middle East	7 (9.0)	19 (54.3)	
Iran	4 (5.1)	5 (14.3)	
Afghanistan	2 (2.6)	3 (8.6)	
Saudi Arabia	1 (1.3)	5 (14.3)	
Iraq	0 (0)	5 (14.3)	
Lebanon	0 (0)	1 (2.9)	
Asia	1 (1.3)	2 (5.7)	
China	1 (1.3)	1 (2.9)	
Philippines	0 (0)	1 (2.9)	
South America	1 (1.3)	2 (5.7)	
Brazil	1 (1.3)	0 (0)	
Colombia	0 (0)	2 (5.7)	
<i>Religion</i>			
Christian	40 (51.3)	8 (22.9)	Chi 8.809, df 2, <i>p</i> = .012
Muslim	37 (47.4)	27 (77.1)	
Falung Gong	1 (1.3)	0 (0)	
<i>Affluence: Before coming to UK:</i>			
Family had car	34/74 (45.9)	20/35 (57.1)	Chi 1.192 df 1, <i>p</i> = .375
Fridge	61/74 (82.4)	33/35 (97.1)	Chi 4.593, df 1, <i>p</i> = .066
Television	64/74 (86.5)	34/35 (97.1)	Chi 2.974, df 1, <i>p</i> = .166
Attended school in country of origin	67/76 (88.2)	33/35 (94.3)	Chi 1.008, df 1, <i>p</i> = .508
Time in UK mean (SD)	22.37 (16.966)	48.56 (20.681)	<i>t</i> = -6.962 <i>p</i> = .000
<i>Current living arrangement</i>			
Independent	26 (33.3)	0 (0)	
Semi-independent	17 (21.8)	0 (0)	
Foster care	32 (41)	0 (0)	
Children's home	3 (3.8)	0 (0)	
Living with both parents	0 (0)	18 (51.4)	
Living with one parent	0 (0)	2 (5.7)	
Living with other family member	0 (0)	15 (42.9)	

20.681) $t = -6.962$, $p = .000$. The living situation given is that at the time of the study, and indicates that nearly half of the UASC had high-support living arrangements (living in foster families or children's homes), but it also shows that nearly half (48.6%) of the ARC had experienced significant separations and losses from family members.

Past war trauma

The numbers of children who experienced the range of war trauma events assessed with the HTQ is given in Table 2.

It can be seen that the UASC had experienced a much higher level of total traumatic events. The total

Table 2 Experience of war trauma amongst unaccompanied asylum-seeking and accompanied refugee children [derived from Harvard Trauma Questionnaire]

Item (Did the child ever experience....)	Unaccompanied asylum-seeking children <i>n</i> = 78 Number (%)	Accompanied asylum-seeking and refugee children <i>n</i> = 35	Statistics Chi squared <i>p</i>
Lack of food or water	29 (37.2)	1 (2.9)	12.888 <i>p</i> = .000
Ill health without medical access	28 (36.4) ¹	1 (2.9) ¹	11.974 <i>p</i> = .000
Lack of shelter	21 (27.6) ³	1 (2.9)	7.923 <i>p</i> = .005
Imprisonment	14 (17.9)	2 (5.7)	2.054 <i>p</i> = .152
Serious injury	25 (32.5)	5 (14.3)	3.052 <i>p</i> = .081
Combat situation	35 (45.5)	4 (12.1) ²	9.524 <i>p</i> = .002
Brain washing	20 (26.7)	3 (8.8) ¹	3.138 <i>p</i> = .077
Rape or sexual abuse	9 (11.7) ¹	1 (2.9) ¹	1.264 <i>p</i> = .261
Forced isolation from other people	19 (25.7) ⁴	2 (6.1) ²	4.393 <i>p</i> = .036
Close to death	43 (55.8) ¹	4 (11.8)	17.710 <i>p</i> = <.000
Forced separation from family members	55 (72.4) ²	2 (5.9) ¹	38.970 <i>p</i> = <.000
Murder of family or friends	44 (58.7) ³	5 (14.7)	17.274 <i>p</i> = <.000
Unnatural death of family or friend	47 (64.4) ⁴	7 (20.6) ¹	16.089 <i>p</i> = <.000
Murder of stranger(s)	34 (44.2) ¹	2 (6.1) ²	13.546 <i>p</i> = .000
Lost or kidnapped	21 (28.0) ³	1 (2.9) ¹	9.504 <i>p</i> = .002
Torture	30 (38.5)	1 (2.9)	13.648 <i>p</i> = .000
Any other situation that was frightening or your life was in danger	62 (82.7) ³	3 (9.7) ⁴	.265 <i>P</i> = .607

Missing data for number of cases in each cell: ¹ = 1 case.

number of events experienced by the UASC group was mean 6.83 (SD 3.87), median 6.50, range 0–16, and for the ARC mean 1.29 (SD 2.037), median 1.00, range 0–10, ($Z = -7.039$, $p = .000$). For the UASC group the total number of trauma events was mean 28.06 (SD 10.496), median 29.00, range 7–48, and for the ARC mean 12.00 (SD 9.292), median 11.00, range 0–42, ($Z = -6.306$, $p = .000$).

Posttraumatic stress symptoms

The UASC and ARC were investigated for posttraumatic symptoms for each gender separately. Male UASC children had total IES score mean 36.98 (SD 12.974) and male ARC scored 15.33 (SD 20.580), $t = 3.859$, $p = .001$. The impact of events avoidance subscale score for male UASC was 21.00 (SD 6.831) and male ARC 7.80 (SD 10.009), $t = 4.796$, $p = .000$. The impact of events intrusion subscale score was 16.00 (SD 9.182) for UASC males and 7.53 (SD 11.351) for ARC males, which were significantly different, $t = -2.981$, $p = .004$. Female UASC children had total impact of events score mean 42.27

(SD 14.487) and female ARC scored 21.88 (SD 16.594), $t = 4.260$, $p = .000$. The impact of events avoidance subscale score for female UASC was 21.46 (SD 7.112) and female ARC 11.00 (SD 8.853), $t = 4.280$, $p = .000$. The impact of events intrusion subscale score was 20.81 (SD 9.516) for UASC females and 10.88 (SD 9.232) for female ARC, $t = -3.383$, $p = .002$.

When expressed categorically in terms of high risk for posttraumatic stress disorder, 32/52 (61.5%) of male UASC had high risk, and only 2/14 male ARC, which were significantly different, Chi square 8.059, $p = .005$. For females significantly more UASC 19/26 (73.1%) than female ARC 6/17 (35.3%) had high risk for posttraumatic stress disorder, Chi square 4.577, $p = .032$.

Predictors of posttraumatic stress symptoms

Analysis of covariance was conducted to assess the effect of being unaccompanied or accompanied on posttraumatic stress symptoms (impact of events scale score). The independent variables were group

(UASC compared with ARC) and gender, and covariates were age, total trauma events, and duration of settlement in the UK. Group was significantly related to impact of events scale score, $F(1, 99) = 4.372$, $p = .039$ with moderate effect size (partial eta squared = .042). Gender was significantly related to impact of events scale score, $F(1, 99) = 7.694$, $p = .007$, with moderate effect size (partial eta squared = .072). There was a significant interaction effect between group and age, $F(1, 99) = 7.369$, $p = .008$ with moderate effect size (partial eta squared = .069). This showed that for the UASC group impact of events scale score increased with greater age, but for the ARC group impact of events scale score decreased with greater age (parameter estimates $B = 5.534$, standard error 2.039, $t = 2.715$, $p = .008$, confidence interval 1.489 to 9.579). There was no association between region of origin and posttraumatic stress symptoms.

Further analysis of covariance was carried out substituting the variable group for living arrangement, with gender as fixed factor and the covariates age, total trauma events, and duration of settlement in the UK. There was a significant main effect for living arrangement, $F(4, 97) = 7.391$, $p = .000$, with large effect size (partial eta squared = .234), gender, $F(1, 97) = 10.463$, $p = .002$, with moderate effect size (partial eta squared = .097), and trauma events $F(1, 97) = 4.319$, $p = .040$, with moderate effect size (partial eta squared = .043). Repeated contrasts showed that impact of events scale scores were significantly elevated for those not living with family members. Pairwise comparisons, using living with both parents as baseline, found no difference for living with one parent or other family member; there was a suggestion that foster care was associated with higher scores (mean difference -14.090 , standard error 5.396, $p = .100$, confidence interval -29.548 to 1.369), while semi-independent accommodation was associated with significantly higher scores (mean difference -20.324 , standard error 5.987, $p = .010$, confidence interval -37.474 to -3.173), and independent living was also associated with high scores (mean difference -27.073 , standard error 6.163, $p = .000$, confidence interval -44.474 to -9.417). With foster care as baseline for contrast, living with one parent or other family member was associated with significantly lower scores (mean difference 15.979, standard error 5.201, $p = .027$, confidence interval 1.078 to 30.880), and living independently was associated with significantly higher scores (mean difference -12.983 , standard error 4.395, $p = .039$, confidence interval -25.573 to -3.394). The contrasts taking into account gender are shown in Figure 1.

Finally regression analysis was carried out to investigate the contribution of each predictor variable to the IES. The findings are given in Table 3.

This showed that group, UASC or ARC, was retained in the initial models but was displaced

Estimated marginal means of total impact of events score

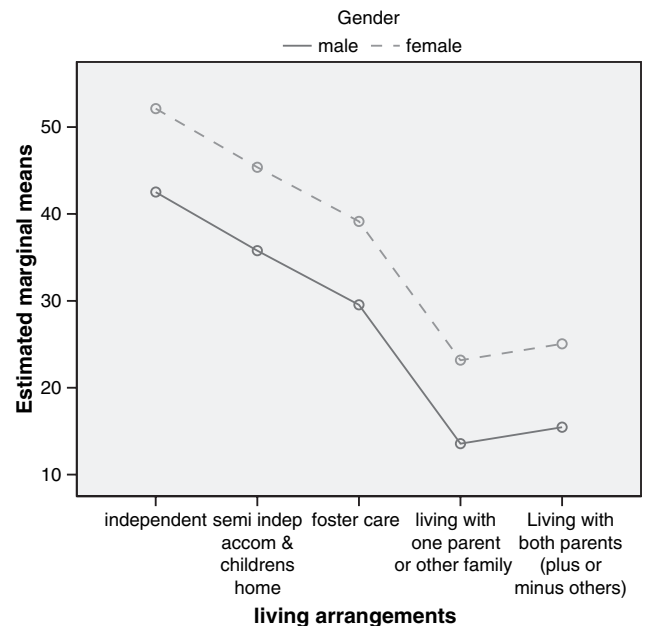


Figure 1 Mean posttraumatic symptom scores according to living arrangement and gender, adjusted for age, duration of settlement in the UK and past trauma events

Table 3 Hierarchical regression analysis for variables predicting impact of events scale

	B	SE B	Beta	significance
Step 1				
Constant	60.801	4.309		
Group UAS or ARC	-21.481	3.145	-.556	.000
Step 2				
Constant	52.499	5.312		
Group UAS or ARC	-23.078	3.128	-.598	.000
Gender	7.424	2.909	2.552	.012
Step 3				
Constant	45.769	5.837		
Group UAS or ARC	-11.204	5.638	-.290	.050
Gender	9.431	2.948	.263	.002
Living arrangements	-3.119	1.245	-.377	.014
Step 4				
Constant	33.132	8.329		
Group UAS or ARC	-6.839	5.925	-.177	.251
Gender	9.492	2.901	.264	.001
Living arrangements	-3.081	1.225	-.372	.014
Trauma events	.283	.135	.198	.039
Step 5				
Constant	26.469	6.013		
Gender	9.893	2.885	.276	.001
Living arrangements	-4.187	.765	-.506	.000
Trauma events	.337	.127	.236	.009

$R^2 = .310$ for step 1, $p = .000$; Change $R^2 = .041$ for step 2, $p = .012$; Change $R^2 = .038$ for step 3, $p = .014$; Change $R^2 = .025$ for step 4, $p = .039$; Change $R^2 = -.008$ for step 5, $p = .251$.

when living arrangement is included. Model 5 is the final and most parsimonious model, requiring only three variables to account for 40.6% of the variance

in impact of events score. Main predictors of IES were total trauma events, gender, and living arrangement. Excluded variables were group (UASC or ARC), age, region and duration of settlement in UK.

Depressive symptoms

For males, the scores of the BDRS amongst the UASC was mean 9.02 (SD5.278), and amongst the ARC mean 6.59 (SD 4.570), not significantly different. Amongst female UASC mean was 13.10 (SD 5.810), and amongst the ARC mean 14.24 (SD 7.361), not significantly different. When expressed categorically in terms of high risk for depression, amongst males for the UASC group 6/52 (11.5%) and for the ARC group 1/17 (5.9%) had high risk of disorder, not significantly different. Amongst females for the UASC group 6/26 (23.1%) and for the ARC group 9/17 (52.9%) had high risk of disorder, Chi square with continuity correction 2.828, $p = .093$.

Predictors of depressive symptoms

A 2 by 2 between-group analysis of covariance was conducted to assess the effect of group membership, UASC or ARC, on the BDRS. The fixed factors were the group and gender, and covariates were age, total trauma events, and duration of settlement in the UK. The initial analysis showed no effect for group membership, UASC or ARC, so this was substituted by region of origin. Gender was significantly related to BDRS score, $F(1, 98) = 28.850$, $p = .000$, with large effect size (partial eta squared = .227), such that females had higher scores. Region of origin was significantly related to BDRS score, $F(2, 98) = 4.166$, $p = .018$, with moderate effect size (partial eta squared = .078), such that those from the Middle East had higher scores than those from Europe (parameter estimates B -6.664, standard error 2.720, $t = -2.450$, $p = .016$, confidence interval -12.063 to -1.266) or Africa (parameter estimates B -7.002, standard error 2.444, $t = -2.865$, $p = .005$, confidence interval -11.852 to -2.153).

There was an interaction effect between gender and region of origin (parameter estimates B 6.067, standard error 2.968, $t = 2.044$, $p = .044$, confidence interval .176 to 11.957), such that BDRS was significantly higher amongst males from the African region rather than Europe or the Middle East. There was no effect of living arrangement, age, and duration of settlement in the UK or total trauma events on BDRS.

Finally regression analysis was carried out to investigate the contribution of each predictor variable to the level of BDRS scores. The findings are given in Table 4.

This showed that gender accounted for 15.6%, region of origin an additional 4.3%, and living

Table 4 Hierarchical regression analysis for variables predicting depressive symptoms using the Birlerson Depression Self-Rating Scale

	B	SE B	Beta	Significance
Step 1				
Constant	3.555	1.682		
Gender	5.014	1.140	.394	.000
Step 2				
Constant	.360	2.121		
Gender	4.880	1.117	.384	.000
Region	1.819	.761	.210	.019
Step 3				
Constant	1.237	2.117		
Gender	5.572	1.139	.438	.000
Region	1.997	.751	.230	.009
Living arrangements	-.581	.259	-.202	.027

$R^2 = .156$ for step 1, $p = .000$; Change $R^2 = .044$ for step 2, $p = .019$; Change $R^2 = .037$ for step 3, $p = .027$.

arrangements an additional 3.8% of the variance for depressive symptoms.

Discussion

This study of UASC, predominantly from the Balkans and Horn of Africa, found that they had experienced a very high level of war trauma and family losses compared with accompanied refugees with a similar age. The UASC were predominantly living in foster families or semi-independent or fully independent arrangements. They had very high levels of posttraumatic stress symptoms, with over half being at risk of posttraumatic stress disorder, much higher levels than occurred amongst the accompanied group. Analysis of covariance confirmed that the UASC had higher posttraumatic stress symptoms, but these were higher amongst females in both groups. There was an interesting interaction with age such that this was associated with more posttraumatic symptoms amongst the unaccompanied group but less amongst the accompanied group. Posttraumatic stress symptoms were significantly higher amongst those in low-support living arrangements, ie were living independently or semi-independently. Depressive symptoms were higher amongst females and regression analysis found that depressive symptoms were also associated with region of origin and living arrangements.

There are relatively few studies of UASC, and few have used standardised instruments to assess past war trauma. The study of UASC boys originally from the Sudan living in the USA, whose age was similar and included the Harvard War Trauma (Geltman et al., 2005), revealed similar proportions reporting witnessing killings, or experiencing torture. The large survey from the Netherlands also found similarly high levels of war trauma (Bean et al., 2007a). From the UK, the survey of 100 UASC, the majority of whom were from Africa and half females,

using interview assessment found that fewer had witnessed killings but a higher proportion (32%) reported rape, which might have reflected the gender composition (Thomas et al., 2004).

The association between experience of past war trauma and posttraumatic stress and depressive symptoms has been found in numerous studies with adolescent refugees in many regions (Paardekooper, de Jong, & Hermans, 1999; Smith et al., 2002; Thabet et al., 2004), including those who were unaccompanied and living in resettlement countries (Bean et al., 2007a). Since different instruments were used in the studies it is difficult to compare the levels of posttraumatic and depressive symptoms. However, higher levels of posttraumatic symptoms were associated with greater exposure to war trauma, female gender and being unaccompanied (Bean et al., 2007a), consistent with the findings in our study. Our study of UASC in the UK who live independently makes possible the inclusion of youngsters with a very low level of support. Indeed, the finding that posttraumatic stress symptoms are increased in lower-support living arrangements suggest that foster family living and high support may ameliorate posttraumatic stress, as well as provide general support, which has been reported previously (Bean et al., 2007b; Geltman et al., 2005).

The finding that increasing age is associated with increased posttraumatic symptoms only for the UASC group highlights the importance of the transitions for that group at the age of 18 years. They will be moved to more independent living arrangements if they had previously lived in foster families, children's homes or semi-independent living arrangements. Furthermore, their legal status will be reviewed and they will be aware of uncertainty regarding their future right to remain in the UK (Wade et al., 2005). The legal processes may increase their fear of, and preoccupation with, the war, violence and other stressors which they had experienced in their countries of origin and to which deportation may be threatened. By contrast, the accompanied group, whose posttraumatic stress symptoms diminish as they get older, will experience the passage of time and approach of age 18 years with less fear of deportation as many of them will have refugee status and the right to reside in the UK (Sack et al., 1996; Wade et al., 2005).

The levels of depressive symptoms are overall higher than the levels found in British normative data (mean 8.53, SD 4.43) (Yule, 1998). However, the levels are especially high for females, but the small numbers may prevent adequate exploration of the range of risk factors for this. The higher levels for females probably relate to the greater propensity for depression that occurs in adolescent females, but this study did not investigate whether gender-related specific kinds of loss or daily hassles and ways of coping contribute to these elevated levels. The

finding of elevated depressive symptoms amongst those from the Middle East, and males from Africa, might arise as many came from countries with long duration of war and socioeconomic adversities. There may also be unidentified stressors experienced in the UK, such as linguistic or social isolation, or family relationship difficulties, which are known to increase risk of depression in young refugees (Heptinstall et al., 2004; Sack et al., 1996).

The study has a number of strengths. It appears to be the first study that compares unaccompanied asylum-seeking and accompanied refugee children living in the same city. Other strengths are that a nearly complete sample of all the unaccompanied asylum-seeking children from one local authority was included. The cultural and background heterogeneity of this group suggests it is similar to UASC supported by other local authorities in the UK and other countries, so the findings may be generalised to other areas (Bean et al., 2007a; Thomas et al., 2004; Wade et al., 2005). Regarding the English language fluency of the young people who participated in the study, practically all had good understanding of English as they had been in the UK for many months before participating in the study, and the use of interpreters for three participants would not have significantly influenced sample recruitment and the results. However, larger sample sizes and inclusion of interview measures of psychopathology would have strengthened the study further. Given the study was cross-sectional, the direction of causality between the associations could not be proven. Doubt may be cast on the interpretation that high-support living situations cause less posttraumatic stress symptoms; it might be argued that social workers place only less distressed adolescents in foster families. However, previous work in the UK has shown that social workers often have comparatively little knowledge of the children's needs and symptoms (Wade et al., 2005).

There are a number of implications of the study. From the clinical perspective, it is important for those working with unaccompanied asylum-seeking adolescents to be aware of the high level of past war trauma, including injuries and sexual assault, that might affect their physical well-being. Mental health practitioners need to be aware of the high risk of posttraumatic stress disorder. Together with professionals in the child welfare agencies they should contribute to early detection for those who are very distressed and whose difficulties appear to be persistent. Furthermore, for child welfare agencies the very striking association between higher levels of posttraumatic stress symptoms does suggest that there may be a causal association. Anecdotally, many asylum-seeking adolescents report more psychological distress when moved to more independent living arrangements. Implications for further research include the need for longitudinal study designs. Investigation of a larger range of

protective and risk factors that might promote well-being would also be useful, such as the duration of past periods of stable family life and educational experience, the individuals' appraisal of adversity, and the extent to which same ethnic or language group fostering or social networks are important. Given the large numbers of unaccompanied asylum-seeking children who continue to arrive in resettlement countries, a stronger evidence base for care and interventions is needed.

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