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Prevalence of Aggression in Displaced Syrian Adolescents Attending Afternoon Public Schools in Beirut

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We assessed aggression in displaced Syrian adolescents, aged 11 years and above, enrolled in Beirut's public schools during 2017–2018. Of 729 parental consent forms distributed in nine randomly selected schools, 368 (50.5%) parents accepted to involve their children. Eventually, the revised Buss-Perry aggression questionnaire was used to assess physical aggression, verbal aggression, anger, and hostility in 178 boys and 182 girls. Scores were interpreted based on the adolescents' age, sex, year of arrival to Lebanon, and Syrian governorate from which they migrated last. Twenty four percent of participants scored high on aggression measurements. Boys had significantly higher scores than girls on verbal aggression ($p=0.001$), hostility ($p=0.003$) and total aggression ($p=0.007$). When other variables were held constant, adolescents who fled to Lebanon in the early days of the Syrian war had significantly higher levels of verbal aggression ($p=0.044$), hostility ($p=0.028$) and total aggression ($p=0.007$) than those who arrived later. Anger scores were not particularly affected by variables in our regression model. Adolescents from Idlib, Daraa, and Aleppo were predicted to have increased physical aggression scores. Verbal aggression scores were predicted to rise for adolescents from Daraa and Aleppo while other districts had a protective effect. These adolescents have witnessed the harshness and inhumanity of war, and have survived life-changing traumatic events. In view of our results, we recommend the introduction of a school-based universal cognitive behavioral intervention to reduce aggression in this vulnerable group both in Lebanon and upon their return to Syria.

Keywords: Syrian refugees, war, Lebanon, aggression, public schools, adolescents

Introduction

Since the outbreak of civil war in Syria (population est. 18.43 million) in 2011, close to 6.6 million civilians have been internally displaced, and 5.6 million have fled to neighbouring countries (United Nations High Commissioner for Refugees (UNHCR) Operational Data Portal 2018). The latest reports showed that there were 2,992,567 registered refugees in Turkey, 1,011,366 in Lebanon and 660,315 in Jordan as the main countries to which Syrian refugees relocated (UNHCR Operational Data Portal 2018). Lebanon now has the highest density of Syrian refugees, accounting for one-quarter of the population of Lebanon; most (58 per cent) are living in extreme poverty, with 76 per cent of households having less than \$3.84 per person per day (United Nations Children's Fund (UNICEF) *et al.* 2017). In addition to war and forced migration, the precarious conditions of these displaced people gives cause for concern about the potential for long-lasting impact on their wellbeing.

Our research examined aggression in Syrian adolescents, aged 11 years and above, who fled to Lebanon due to the Syrian crisis. We sought to analyse the variables that correlated with the types and level of aggression in adolescents enrolled in public schools in Beirut. We adopted Colman's definition of aggression (Colman 2009), where aggression is 'behavior whose primary or

sole purpose or function is to injure another person or organism, whether physically or psychologically'. Types of aggression might be physical or verbal, anger or hostility. Physical aggression is expressed, for instance, by making a fist to another person or punching a wall. Verbal aggression includes yelling, shouting, arguing or showing sarcasm. Anger is described as the feeling and the physiological arousal, which ensue from being in danger, mistreated or jealous (Ahsan 2015). Finally, hostility is defined as actions triggered by anger with the aim of harming others.

The psychological injuries of Syrian refugee children have induced a level of stress termed 'toxic stress' resulting from prolonged exposure to war (Save the Children 2017). This term relates to the fact that stress and adverse childhood experiences have moved to another, more debilitating level where children are constantly afraid, angry and anxious over their future. They experience nightmares and bedwetting, and fight with siblings and classmates. Similarly, an assessment of post-traumatic stress disorder (PTSD) prevalence in Syrian refugees in camps in Lebanon revealed that PTSD point prevalence was 27.2 per cent while lifetime prevalence was 35.4 per cent (Kazour *et al.* 2017). These estimates fall within the upper range reported in the international literature on populations exposed to conflicts and forced displacement, where PTSD mean prevalence was 30.6 per cent.

Although not a signatory to the 1951 Refugee Convention (Buckner *et al.* 2017), Lebanon has established a progressive and inclusive policy for providing education to Syrian refugees. The Ministry of Education and Higher Education (MEHE) launched a national strategy called 'Reach All Children with Education', which aims to deliver education to all children in Lebanon, including refugees, regardless of their legal status. MEHE and non-governmental organizations have been providing education to displaced Syrians with classes implemented in public schools as a second shift programme (El-Ghali *et al.* 2016). According to the United Nations High Commissioner for Refugees, there were 157,984 Syrian children officially registered in Lebanon in 2015–16, of whom 92,094 were enrolled in this afternoon programme (UNHCR 2016). Around 13.3 per cent of them were 12–17 years old (UNHCR Operational Data Portal 2018). However, an alarmingly high dropout rate of 70 per cent was reported in 2011–12 (El-Ghali *et al.* 2016). Among the obstacles faced were the cost of transportation to school, the opportunity cost of going to school, mixed-sex education and the language barrier (sciences classes being taught in French instead of Arabic). In the absence of schooling, children were at increased risk of such negative coping strategies as child labour, child marriage and other forms of exploitation.

Syrian families have been under economic and social stressors following the drastic changes that have taken place in their lives. Migration, in itself, may lead to aggression. This was observed in a Ukrainian study in which higher scores for aggression were reported in migrants than among indigenous residents (Atramentova *et al.* 2018). When refugee families witnessed increased

violence, their children became more aggressive as they went into adulthood (Mueller-Bamouh *et al.* 2016). Their brain architecture changed, gradually leading to physical and mental difficulties. This phenomenon was explained by the ‘cycle of violence’ that extended through generations (Catani 2010). An important risk factor and predictor of familial violence was increased hostility and aggressiveness experienced during wartime. Familial violence took the form of verbal, psychological or physical abuse that started in childhood and adolescence, thus provoking more violent behaviour (Mueller-Bamouh *et al.* 2016). Children not only became emotionally scarred by living the war, suffering shortages in food and basic amenities, and lacking access to health care and education; they were also subject to different forms of violence that greatly impacted their behaviour, particularly as they experienced social isolation and daily hostility. In situations of persistent political violence, children manifested cognitive, emotional and physiological responses in order to adapt and mentally survive (Hassan *et al.* 2015). As children internalized these conditions, they entered the ‘cycle of violence’ that turned them into both victims and perpetrators of aggression.

Other types of violence, which have been documented to spread in refugee camps, were sexual and gender-based. These have been associated with the patriarchal societal model in which men were expected to provide for their families (Catani 2010). Aggressive behaviour was a result of their inability to do so, as women sought ways to meet their families’ needs with a resulting shift in gender roles (Mueller-Bamouh *et al.* 2016). This sort of aggression was found to be excused in these societies (El Masri *et al.* 2013). In addition, women did not oppose out of fear of being sent back to Syria (Charles and Denman 2013). Early marriage also increased among refugee communities because of the inability to provide for children or to protect the family honour to the extent that a girl may be forced to marry the man who assaulted and raped her (Catani 2010). This practice has been found to bring about increased violence and sexual abuse against girls with a devastating effect on their educational attainment and future. In extreme cases, the difficulty of life in camps and the lack of resources have steered children and women towards prostitution (Charles and Denman 2013).

Methods

Study Design

This cross-sectional survey was designed to examine the level and type of aggression in Syrian adolescents enrolled in public schools in Beirut. Formal approval from the University’s Institutional Review Board and the MEHE of Lebanon was obtained before conducting the survey. Private schools were not included because they did not provide a second shift programme. Similarly, public schools that did not propose a second shift for displaced Syrians in 2017–18 were excluded from the sampling frame. From the remaining 123

public schools in Beirut, 10 schools were randomly selected. Children of both sexes, aged 11 years and above, were invited to take part in the survey.

Questionnaire

The Buss–Perry aggression questionnaire has been widely used to determine aggression in clinical and research settings. It was first developed and administered to a sample of undergraduate students (Buss and Perry 1992). It consisted of 29 questions, translated into at least seven languages, including Arabic (Diamond and Magaletta 2006), and is considered free of gender bias (Diamond and Magaletta 2006; Abd-El-Fattah 2007). The questionnaire provided a good prediction of future behaviour and correlated aggression types with future aggressive action (Archer and Webb 2006). However, the test was criticized for using low factor items and having low marginal fit (Archer *et al.* 1995). Another critique was that it was used on college students only (Williams *et al.* 1996). In 2009, the test was used on a sample of 2,208 boys and girls, aged 9–11 years and 14–17 years in 27 schools in Madrid (Santisteban and Alvarado 2009), and showed a good overall fit.

Amendments in the Buss–Perry aggression questionnaire have focused on limiting the number of factors or questions. The different models have been compared by administering them to 1,522 prisoners who had undergone cognitive behavioural therapy for aggression and violence (Gallagher and Ashford 2016). The prisoners completed seven versions of the questionnaire. The best two models were: The Bryant and Smith (2001) version, which consisted of 12 questions divided into four factors, and the Diamond *et al.* (2005) version, which was almost identical except for one question.

Since our study targeted displaced Syrian adolescents, the Arabic version of the questionnaire was used. This translation is considered reliable, accurate and valid for people of Arabic origin (Aljurany 2013). Questions measured four factors: Q1, Q4, Q8 and Q10 for physical aggression; Q2, Q5 and Q9 for verbal aggression; Q6 and Q12 for anger; and Q3, Q7 and Q11 for hostility. Each question was rated from 1 to 5, with 1 being not characteristic and 5 being highly characteristic of the participant. In our data analysis, responses to questions constituted our dependent variables. Scores on each question were added and compared to the mean scores obtained in Diamond *et al.* (2005). Total scores above the median score of 36 represented a higher tendency towards aggressive behaviour.

Implementation

We conducted a pilot study in three classes of displaced Syrians in one of the randomly chosen schools in order to test and refine our methodology. We observed that children in the same classroom were of varying ages, receptiveness and reading proficiency. As a result, we decided that, in our actual survey, we would read each question aloud and provide guidance when requested.

Several meetings were held with the school headmasters to present the project and solicit assistance. Due to the young age of our target population and the sensitive nature of the information to be collected, permission was sought from the children's legal guardians through a parental consent form written in Arabic. In addition to their signature, parents were asked to indicate the year of displacement to Lebanon, the governorate in Syria they were forced to leave last and the name, date of birth and sex of their child.

The questionnaires were administered at the school premises between December 2017 and March 2018. The children, whose parents had signed the consent form, were invited to class at the time of the survey; the others were given a longer recess by their teacher. This was done to prevent those who were not participating from feeling left out or being coerced. We joined the students in class and presented the project to them. We informed them that participation was voluntary and that they were free to withdraw at any time. We distributed the questionnaires with the child assent form in Arabic. We read each question aloud, explained it and answered students' queries. We also asked one of the students to say to the class, using their own words, what they understood from the question. In general, the students did not indicate any difficulty understanding the content of the questionnaire. When there was no request for clarification, we waited for the students to mark their responses individually before moving to the next survey question. At this stage, the questionnaires were coded so that the name of the schools would not appear on the forms. Students were not asked to write their names or any kind of identification.

The data were analysed using IBM SPSS Statistics 25. Descriptive statistics were performed to summarize the data. As inferential statistics, multiple linear regression was used to explain the relationship between our dependent variables (scores on physical aggression, verbal aggression, hostility, anger and total aggression) and our independent factors (age, sex, year of arrival to Lebanon and governorate in Syria from which the child was displaced last).

Results and Discussion

A total of 729 children were asked to hand their parents the consent form and return it to their teacher after signature. Out of these, 368 parents (50.5 per cent) gave permission to include their children in the study. Additionally, six children were absent on the day of the survey. In all, 178 males (49.2 per cent) and 182 females (50.3 per cent), mean age (13 ± 1.5) years, completed the questionnaire. Table 1 describes the participants' characteristics. The difference between participants and non-participants could not be analysed because only 8 per cent of parents of non-participating children had indicated, on the consent form, the date of migration to Lebanon and the governorate of origin; none had provided the child's age. However, Little's missing completely at random test (MCAR) was non-significant for our dataset. Our

Table 1

Characteristics of a Sample of Displaced Syrian Adolescents, Aged 11 and Above, Enrolled in Lebanese Public Schools					
Parental consent	Yes	No	Not specified		
	368 (50.5%)	337 (46.2%)	24 (3.3%)		
Sex of the child	Male	Female	Not specified		
	178 (49.2%)	182 (50.3%)	2 (0.6%)		
Age of child (in years)	Mean (standard deviation)				
	13 (± 1.5)				
Year of arrival to Lebanon	Total	2011–13	2013–18	Not specified	
	348	117 (32.3%)	231 (63.8%)	14 (3.9%)	
Place of displacement	Daraa	Aleppo	Idlib	Others*	Not specified
	69 (19.1%)	111 (30.7%)	39 (10.8%)	110 (30.4%)	33 (9.1%)

*Includes Tartus, Deir-Ez-Zour, Al-Hassakah, Lathakia, Raqqa, Damascus, Homs, Hama, Swayda and Quneitra.

questionnaire had good internal consistency, with a Cronbach's alpha of 0.706.

Total aggression (TA) was calculated by adding the scores in all 12 questions and a median score of 36 was used as a cut-off point in the assessment. Whereas 24 per cent of participants ($n=87$) scored 36 and above on TA, 69.9 per cent ($n=253$) scored below 36. There was missing data for 6.1 per cent of the adolescents in our sample ($n=22$).

The box plots, in Figure 1, provide the median and interquartile ranges of the dependent variables in our sample. The data was non-normally distributed. The Mann–Whitney U test revealed a significant difference between sexes with respect to median scores on verbal aggression, hostility and TA (see Table 2). Moreover, Spearman's correlation showed a statistically significant weak negative correlation between year of arrival to Lebanon and TA ($r=-0.112$, $p=0.044$).

We conducted a multiple linear regression analysis to predict physical aggression (PA) scores based on age, sex, year of arrival to Lebanon and governorate from which children arrived either Idlib, Daraa, Aleppo or Other. A significant regression equation was found ($F(8,308)=3.480$, $p=0.001$) with an R^2 of 0.083. The linear regression model with the independent variables explained 8 per cent of the variance in PA scores. Idlib ($p=0.001$), Daraa ($p=0.027$) and Aleppo ($p=0.02$) were significant predictors of PA scores. While statistically controlling for other independent variables, being from Idlib, Daraa and Aleppo were predicted to result in

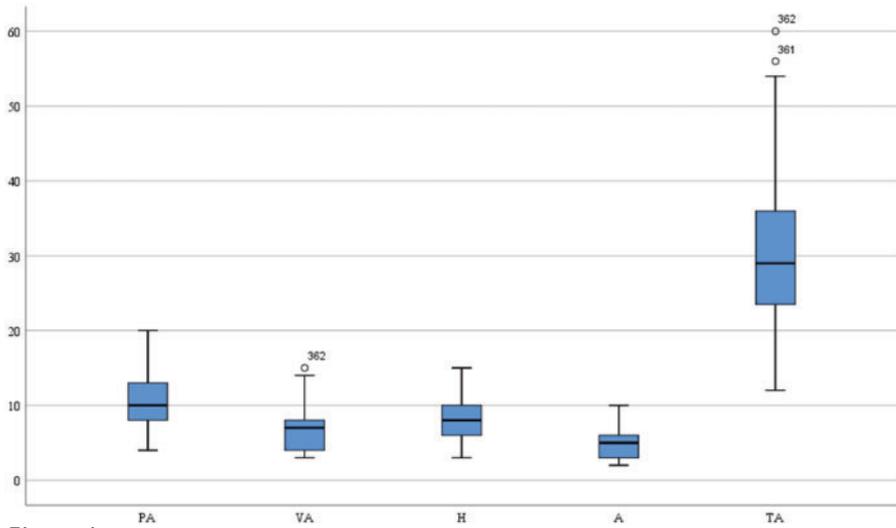


Figure 1. Median Scores and Interquartile Ranges for Physical Aggression (PA), Verbal Aggression (VA), Hostility (H), Anger (A) and Total Aggression (TA) in a Sample of Displaced Syrian Adolescents Registered in Lebanese Public Schools

Table 2

Difference in Median Scores on Physical Aggression (PA), Verbal Aggression (VA), Hostility (H), Anger (A) and Total Aggression (TA) between Displaced Syrian Adolescent Males and Females Registered in Lebanese Public Schools

Sex		PA	VA	H	A	TA
Female	Median	10.0	6.0	7.0	5.0	28.5
Male	Median	10.0	7.0	8.0	5.0	31.0
	Mann–Whitney U	13,798.5	12,326.5	12,899.0	14,823.5	11,845.5
	Asymp. sig. (2-tailed)	0.155	0.001*	0.003*	0.288	0.007*

* $p < 0.05$.

increased PA scores of 2.804, 7.141 and 4.028, respectively. Time was predicted to induce a decrease (-0.245) in PA scores for each unit increase in time ($p = 0.013$). Similarly, a significant regression equation was obtained between verbal aggression (VA) scores and independent variables ($F(8,309) = 2.814, p = 0.005$) with an R^2 of 0.068. There was a linear relationship between the variables in our model. Females were less verbally aggressive than males by 0.779 ($p = 0.012$). Each additional year in the children’s age predicted a 0.210 drop in VA scores ($p = 0.035$). In addition, year of arrival to Lebanon significantly affected the model with each added year increasing by 0.1 the VA scores ($p = 0.044$). Being from different areas in Syria predicted a

5.877 increase in VA scores for children coming from Daraa ($p=0.015$) and a 3.054 increase for children from Aleppo ($p=0.019$). Other areas predicted a drop in VA scores by 2.632 ($p=0.014$).

We also noted a linear relationship between the independent variables and children's hostility (H) scores ($F(8,309)=2.179$, $p=0.029$) with an R^2 of 0.053. These variables explained 5 per cent of the variance in H. Sex of the child ($p=0.002$) and year of displacement ($p=0.028$) were significant predictors of H scores, with boys being more hostile than girls by 1.062, and earlier displacement to Lebanon predicting an increase in H scores by 1.062 for every additional year. The area from which the children arrived did not have an impact on H scores. Anger scores were not affected by age, sex, year of arrival to Lebanon or governorate of origin. There was a linear relationship between TA scores and independent predictors ($F(8,300)=2.887$, $p=0.004$) with R^2 of 0.071. Sex was a significant predictor ($p=0.015$) of TA scores. Males were generally 2.458 times more aggressive than females. Earlier years of displacement to Lebanon were predictive of high TA scores ($p=0.007$), increasing these scores by 0.647 for each added year.

The present study investigated the occurrence and types of aggression in displaced Syrian adolescents attending public schools in Lebanon. In our sample of 11- to 18-year-olds, 24 per cent scored highly on TA. Similar observations were made in a neighbouring context characterized by long-standing exposure to political violence (Al-Krenawi *et al.* 2009). A comparison between Palestinian adolescents from Gaza and Jewish Israeli adolescents from Haifa and Tel Aviv, using the Buss–Perry Aggression Questionnaire, revealed higher levels of TA and its subscales (VA and PA, hostility and anger) among Palestinians (Al-Krenawi *et al.* 2009). Although political violence had a detrimental effect on both groups, Palestinian adolescents reported higher levels of mental health and PTSD symptoms, and more problems in family and social functioning. In this setting, higher socio-economic status and religiosity seemed to alleviate the emotional and behavioural response to violence and constituted powerful buffers against family and social dysfunction and aggression. In another study on the psycho-social correlates of aggressive behaviour in youth (16–30 years old) from Lebanon (Sanchez-Ruiz and Baaklini 2018), self-control, wellbeing and emotionality were significant negative predictors of aggressive behaviour, whereas exposure to violence and openness to experience were positive predictors of such behaviour. Still another study from the region, on Turkish adolescents and emerging adults, demonstrated that low self-control, low self-esteem and some identity dimensions were predictors of aggression (Morsunbul 2015). Over and above these factors, the combination of traumatic events and difficult living conditions induced aggression in refugee children towards themselves and towards others. In fact, children living in a state of war or displaced from their home country were at higher risk of mental illness, especially PTSD and depression (Thabet *et al.* 2004). This was especially true for children and adolescents living in conflict zones in the Middle East, where a positive

correlation existed between the number of conflict-related traumatic experiences and the prevalence of mental, emotional and behavioural problems (Dimitri 2011). The estimated PTSD prevalence in children was 23–70 per cent in Palestine and 10–30 per cent in Iraq. In addition, adolescents with PTSD showed a noticeable increase in aggressive behaviour in comparison to younger children and adults (Hamblen and Barnett 2003). Furthermore, the experience of war at a young age led to aggression in adolescence (Keresteš 2006). Children may have also learned aggressive behaviours by modelling the adults in their life (Punamäki 2009).

We found that boys had significantly higher scores than girls on VA, hostility and TA. This was in accordance with another study on Somali refugee children in Wales (Davies and Webb 2000), where the 12-item Buss–Perry questionnaire (Bryant and Smith 2001) was used in a similar age group. Boys seemed more demonstrative of their emotional state, which correlated with higher levels of VA and hostility compared to girls. Instead of acting out, girls retained and internalized their emotions. Gender differences in PA have also been reported in samples of Egyptian and Omani adolescents (Abd-El-Fattah 2013). The proposed explanation for this finding was the males' desire in Middle Eastern societies to adhere to masculine gender norms and exert dominance over others. Another study involving Argentinean adolescents aged 12–17 years showed that males had significantly higher scores on PA while females scored significantly higher on anger (Reyna *et al.* 2011). Those results were comparable to ours, but with two differences. In our sample, males scored significantly higher than females on VA, hostility and TA, while both sexes showed higher scores on PA. This may be the result of the unprecedented tragic scenes witnessed by these children. Exposure to military and war violence characterized by air raids, destruction and killing had a similar effect on boys and girls (Qouta *et al.* 2008). The development of aggressive and anti-social behaviour was nonetheless dependent on the children's social context and their predisposition to learn from their surroundings (Punamäki 2009). Parenting practices constituted a moderator of aggressive behaviour in a context where both girls and boys witnessed severe military violence (Qouta *et al.* 2008). A supportive parenting style was crucial for the children's psychological wellbeing and behavioural development (Sim *et al.* 2018).

Our linear regression analysis revealed that, for every additional year in Lebanon, PA scores decreased by 0.1. Moreover, the year of arrival to Lebanon was negatively correlated with VA, hostility and TA scores. This may be due to an initial struggle in integrating the new environment with possible tension with the host community. In fact, focused discussions with 40 Syrian adolescents revealed that Syrian refugees enrolled in schools in Lebanon were often victims of bullying by peers; they were also sensitive to a negative perception of Syrians among members of the host community (Streng and Wagner 2014). Such effects may have subsided with time because of a change in attitude of the local community towards displaced families or

possible adaptation of the displaced to their circumstances. The children, who arrived earlier to Lebanon, may have had enough time to understand that their new reality—although transient—is not ephemeral. Another explanation may be that the first families to move to Lebanon may have done so due to the atrocities of war with a sense of urgency to escape life-threatening situations, while more recent arrivals may have been driven by economic reasons. In the present study, significantly higher levels of PA were reported in children from Idlib, Daraa and Aleppo than elsewhere in Syria. Coming from Daraa or Aleppo seemed to predict a rise in VA, while other areas in Syria seemed protective and brought a drop in this type of aggression. These cities have been under relentless attack with bombardment and poor security (Arshad and Aoun 2017). The brutality of the war and the adverse life experiences of children from these areas may have induced high VA and PA scores. It is possible that victims of aggression went on to develop VA as a way to vent out their stress and powerlessness and that VA predisposed them to committing PA towards others (Atkin *et al.* 2002).

Aggressive behaviour may negatively affect youth, possibly diminishing their social competence. An early intervention may nonetheless break this vicious cycle and save children from future hardship (Matjasko *et al.* 2012; Barnes *et al.* 2014). A meta-review of evaluations of behavioural and psychosocial approaches to prevent youth violence concluded that school-based programmes had moderate to strong effects on aggressive behaviours among youth (Matjasko *et al.* 2012). More specifically, the introduction of a cognitive behavioural intervention (CBI) coupled with peer-mediation programmes had a significant impact on preventing or curbing youth aggressive behaviour in school settings (Matjasko *et al.* 2012). CBI acted on behaviour by modifying the cognitive process leading to a given behaviour (Matjasko *et al.* 2012). New ways of coping developed through a combination of behavioural principles and self-talk as well as through modelling, rehearsal and reinforcement of appropriate behaviour in situations that provoked aggressive outbursts (Barnes *et al.* 2014). Universal delivery—that is, CBI for the whole class as opposed to CBI to at-risk small groups—not only reduced the risk of stigma, but also provided a peer group to enhance the modelling and adoption of appropriate behaviour (Barnes *et al.* 2014). That being said, the results of any intervention depended on the motivation of the involved staff and their level of perceived stress at school (Barnes *et al.* 2014). In view of our findings, we recommend the adoption of a school-wide CBI for Syrian refugee children in Lebanon as a starting point to tackle frustration and inappropriate aggressive responses. CBI should also be implemented in Syrian schools upon the return of the displaced to their home country.

We acknowledge the following limitations in our study. The majority of the parents who had refused to enroll their children in the study failed to provide the additional information requested in the consent form, mainly their date of migration to Lebanon, the governorate they left last, and the age of their child. In this case, it was not possible to completely rule out selection bias,

which may have been driven by the parents' political affiliations. We refrained from asking about the loss of a parent or a sibling, considering that the recall of such sensitive incidents could revive feelings of deep sadness and grief. As a result, we were unable to analyse the relation between current family status and aggression level in these adolescents. Moreover, the lack of baseline information on aggression in Syrian youth prior to wartime made it difficult to establish that the war had induced a significant change in this population. Our study would have benefited from a control group matched for age and sex. However, we did not have access to non-displaced Syrian adolescents or permission to conduct parts of the study in Syria. It is important to note, though, that all Syrian adolescents have been exposed directly to the war and its atrocities, or indirectly to its repercussions through witnessing an influx of internal migrants, or viewing violent scenes on the news, or sensing the influence of political and economic instability on their families and communities. Therefore, even non-displaced adolescents, from relatively calm areas in Syria, would not have constituted an ideal control group. A comparable problem would have occurred if the control group were from Lebanese youth. Although Lebanese adolescents have not lived the Lebanese civil war (1975–1990), they have witnessed sporadic conflict and political upheaval among which was the war in 2006 with large internal displacement, bombings and assassinations of prominent political figures, armed clashes between Lebanese factions (e.g. May 2008), an offensive by the Lebanese army against Daesh (ISIS) militants and another against Fatah al Islam (a Salafist jihadist network), a months-long garbage crisis causing violent protests and the lack of a president for two years. These few examples give a sense of the political, social and economic unrest and volatility that have reigned in the country. Another limitation is the strict inclusion of Syrian adolescents enrolled in schools; this study does not take into account non-students in its estimation of aggression. Aggression levels in children who have dropped out of school or who were never enrolled may be different from the levels reported in schoolchildren.

Conclusion

In summary, 24 per cent of our sample of 11- to 18-year-old displaced Syrian school children scored highly on aggression measurements. Boys showed significantly higher scores than girls on VA, hostility and TA. Adolescents who fled to Lebanon in the first years of war showed significantly higher scores than those who arrived later, particularly for PA, hostility and TA, when other factors were held constant. Adolescents from Idlib and Daraa scored significantly higher than others on PA and VA; those from Aleppo also had higher VA scores than others.

In the absence of large-scale screening for aggression in Syrian refugee children, we recommend the introduction of a school-based universal intervention centred on cognitive behavioural therapy as a practical and

sustainable way to reduce aggression in this vulnerable group. This intervention is vital since the future of Syria, its stability and social and economic prosperity lie in the hands of its youth.

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- ABD-EL-FATTAH, S. M.** (2007) 'Is the Aggression Questionnaire Bias Free? A Rasch Analysis'. *International Education Journal* 8(2): 237–248.
- ABD-EL-FATTAH, S. M.** (2013) 'A Cross-cultural Examination of the Aggression Questionnaire–Short Form among Egyptian and Omani Adolescents'. *Journal of Personality Assessment* 95(5): 539–548.
- AHSAN, M.** (2015) 'Physical, Verbal, Anger and Hostility Aggressiveness in University's Physical Education Students'. *International Journal of Sports and Physical Education* 1(2): 20–23.
- AL-KRENAWI, A., GRAHAM, J. R. and KANAT, Y.** (2009) 'Analysis of Trauma Exposure, Symptomatology and Functioning in Jewish Israeli and Palestinian Adolescents'. *British Journal of Psychiatry* 195(05): 427–432.
- ALJURANY, K. A. H.** (2013) 'Personality Characteristics, Trauma and Symptoms of PTSD: A Population Study in Iraq', doctoral dissertation, Heriot-Watt University, Edinburgh, http://www.ros.hw.ac.uk/bitstream/handle/10399/2641/Al-JuranyKAH_0913_sls.pdf?sequence=1&isAllowed=y (accessed June 2018).
- ARCHER, J. and WEBB, I. A.** (2006) 'The Relation between Scores on the Buss-Perry Aggression Questionnaire and Aggressive Acts, Impulsiveness, Competitiveness, Dominance, and Sexual Jealousy'. *Aggressive Behavior* 32(5): 464–473.
- ARCHER, J., KILPATRICK, G. and BRAMWELL, R.** (1995) 'Comparison of Two Aggression Inventories'. *Aggressive Behavior* 21(5): 371–380.
- ARSHAD, R. R. and AOUN, J. F.** (2017) *Syria Damage Assessment of Selected Cities Aleppo, Hama, Idlib (English)*, Report Number 121943. Washington, DC: World Bank Group, <http://documents.worldbank.org/curated/en/530541512657033401/Syria-damage-assessment-of-selected-cities-Aleppo-Hama-Idlib> (accessed June 2018).
- ATKIN, C., SMITH, S., ROBERTO, A., FEDIUK, T. and WAGNER, T.** (2002) 'Correlates of Verbally Aggressive Communication in Adolescents'. *Journal of Applied Communication Research* 30(3): 251–268.
- ATRAMENTOVA, L., LUCHKO, E. and FILIPTSOVA, O.** (2018) 'Impact of Migration on the Expression of Aggression and Empathy in Urban Populations'. *The Egyptian Journal of Medical Human Genetics* 19(2): 83–86.
- BARNES, T. N., SMITH, S. W. and MILLER, M. D.** (2014) 'School-based Cognitive-behavioral Interventions in the Treatment of Aggression in the United States: A Meta-analysis'. *Aggression and Violent Behavior* 19(4): 311–321.

- BRYANT, F. B. and SMITH, B. D.** (2001) 'Refining the Architecture of Aggression: A Measurement Model for the Buss-Perry Aggression Questionnaire'. *Journal of Research in Personality* 35(2): 138–167.
- BUCKNER, E., SPENCER, D. and CHA, J.** (2017) 'Between Policy and Practice: The Education of Syrian Refugees in Lebanon'. *Journal of Refugee Studies* 31(4): 444–465.
- BUSS, A. H. and PERRY, M.** (1992) 'The Aggression Questionnaire'. *Journal of Personality and Social Psychology* 63(3): 452–459.
- CATANI, C.** (2010) 'War at Home: A Review of the Relationship between War Trauma and Family Violence'. *Verhaltenstherapie* 20(1): 1.
- CHARLES, L. and DENMAN, K.** (2013) 'Syrian and Palestinian Syrian Refugees in Lebanon: The Plight of Women and Children'. *Journal of International Women's Studies* 14(5): 96–111.
- COLMAN, A. M.** (2009) *Aggression*. In *A Dictionary of Psychology* (3 ed.). Oxford: Oxford University Press.
- DAVIES, M. and WEBB, E.** (2000) 'Promoting the Psychological Well-being of Refugee Children'. *Clinical Child Psychology and Psychiatry* 5(4): 541–554.
- DIAMOND, P. M. and MAGALETTA, P. R.** (2006) 'The Short-form Buss-Perry Aggression Questionnaire (BPAQ-SF): A Validation Study with Federal Offenders'. *Assessment* 13(3): 227–240.
- DIAMOND, P. M., WANG, E. W. and BUFFINGTON-VOLLUM, J.** (2005) 'Factor Structure of the Buss-Perry Aggression Questionnaire (BPAQ) with Mentally Ill Male Prisoners'. *Criminal Justice and Behavior* 32(5): 546–564.
- DIMITRI, L.** (2011) 'A Systematic Review on the Mental Health of Children and Adolescents in Areas of Armed Conflict in the Middle East'. *Child: Care, Health and Development* 38(2): 153–161.
- EL MASRI, R., HARVEY, C. and GARWOOD, R.** (2013) *Shifting Sands, Changing Gender Roles among Refugees in Lebanon*. Beirut: Oxfam and Abaad-Resource Center for Gender Equality, https://d1tn3vj7xz9fdh.cloudfront.net/s3fs-public/file_attachments/rr-shifting-sands-lebanon-syria-refugees-gender-030913-en_3.pdf (accessed June 2018).
- EL-GHALI, H. A., GHALAYINI, N. and ISMAIL, G.** (2016) *Responding to Crisis: Syrian Refugee Education in Lebanon*, AUB Policy Institute, Policy Brief #7/2016, https://www.aub.edu.lb/ifi/publications/Documents/policy_memos/2015-2016/20160406_responding_to_crisis.pdf (accessed June 2018).
- GALLAGHER, J. M. and ASHFORD, J. B.** (2016) 'Testing Alternative Measurement Models with Assaultive Misdemeanor Offenders'. *Criminal Justice and Behavior* 43(11): 1639–1652.
- HAMBLEN, J. and BARNETT, E.** (2003) *PTSD in Children and Adolescents*, US Department of Veterans Affairs, National Center for PTSD, https://www.ptsd.va.gov/professional/treatment/children/ptsd_in_children_and_adolescents_overview_for_professionals.asp (accessed June 2018).
- HASSAN, G., KIRMAYER, L. J., MEKKIBERRADA, A., QUOSH, C., EL CHAMMAY, R. and DEVILLE-STOETZEL, J. B.** (2015) *Culture, Context and the Mental Health and Psychosocial Wellbeing of Syrians: A Review for Mental Health and Psychosocial Support Staff Working with Syrians Affected by Armed Conflict*. Geneva: UNHCR.
- KAZOUR, F., ZAHREDDINE, N. R., MARAGEL, M. G., ALMUSTAFA, M. A., SOUFIA, M., HADDAD, R. and RICHA, S.** (2017) 'Post-traumatic Stress Disorder in a Sample of Syrian Refugees in Lebanon'. *Comprehensive Psychiatry* 72: 41–47.
- KERESTES, G.** (2006) 'Children's Aggressive and Prosocial Behavior in Relation to War Exposure: Testing the Role of Perceived Parenting and Child's Gender'. *International Journal of Behavioral Development* 30(3): 227–239.
- MATJASKO, J. L., VIVOLO-KANTOR, A. M., MASSETTI, G. M., HOLLAND, K. M., HOLT, M. K. and DELA CRUZ, J.** (2012) 'A Systematic Meta-review of Evaluations of Youth Violence Prevention Programs: Common and Divergent Findings from 25 Years of Meta-analyses and Systematic Reviews'. *Aggression and Violent Behavior* 17(6): 540–552.

- MORSUNBUL, U.** (2015) 'The Effect of Identity Development, Self-esteem, Low Self-control and Gender on Aggression in Adolescence and Emerging Adulthood'. *Eurasian Journal of Educational Research* 61: 99–116.
- MUELLER-BAMOUH, V., RUF-LEUSCHNER, M., DOHRMANN, K., SCHAUER, M. and ELBERT, T.** (2016) 'Are Experiences of Family and of Organized Violence Predictors of Aggression and Violent Behavior? A Study with Unaccompanied Refugee Minors'. *European Journal of Psychotraumatology* 7: 1.
- PUNAMÄKI, R. L.** (2009) 'War, Military Violence, and Aggressive Development: Child, Family, and Social Preconditions'. In Barber, B. (ed.) *Adolescents and War: How Youth Deal with Political Violence*. Oxford: Oxford University Press, pp. 62–79.
- QOUTA, S., PUNAMÄKI, R., MILLER, T. and EL-SARRAJ, E.** (2008) 'Does War Beget Child Aggression? Military Violence, Gender, Age and Aggressive Behavior in Two Palestinian Samples'. *Aggressive Behavior* 34(3): 231–244.
- REYNA, C., LELLO, M. G., SANCHEZ, A. and BRUSSINO, S.** (2011) 'The Buss-Perry Aggression Questionnaire: Construct Validity and Gender Invariance among Argentinean Adolescents'. *International Journal of Psychological Research* 4(2): 30–37.
- SANCHEZ-RUIZ, M.-J. and BAAKLINI, A.** (2018) 'Individual and Social Correlates of Aggressive Behavior in Lebanese Undergraduates: The Role of Trait Emotional Intelligence'. *Journal of Social Psychology* 158(3): 350–360.
- SANTISTEBAN, C. and ALVARADO, J. M.** (2009) 'The Aggression Questionnaire for Spanish Preadolescents and Adolescents: AQ-PA'. *The Spanish Journal of Psychology* 12(01): 320–326.
- SAVE THE CHILDREN.** (2017) *Invisible Wounds: The Impact of Six Years of War on the Mental Health of Syria's Children*, savethechildren.net, <https://www.savethechildren.net/article/syrian-children-face-growing-mental-health-crisis-new-report-reveals> (accessed June 2018).
- SIM, A., FAZEL, M., BOWES, L. and GARDNER, F.** (2018) 'Pathways Linking War and Displacement to Parenting and Child Adjustment: A Qualitative Study with Syrian Refugees in Lebanon'. *Social Science and Medicine* 200: 19–26.
- STRENG, M. and WAGNER, H.** (2014) *Syrian Adolescents: Their Tomorrow Begins Today*. Portland, Oregon: Mercy Corps.
- THABET, A. A., ABED, Y. and VOSTANIS, P.** (2004) 'Comorbidity of PTSD and Depression among Refugee Children during War Conflict'. *Journal of Child Psychology and Psychiatry* 45(3): 533–542.
- UNITED NATIONS CHILDREN'S FUND (UNICEF), UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES (UNHCR) AND THE UNITED NATIONS WORLD FOOD PROGRAMME (WFP)** (2017) *Vulnerability Assessment of Syrian Refugees in Lebanon 2017 (VASyR-2017)*. Lebanon: UNHCR, https://data2.unhcr.org/en/documents/details/61312#_ga=2.256759947.1634534021.1529989511-604382417.1529989511 (accessed June 2018).
- UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES (UNHCR) OPERATIONAL DATA PORTAL** (2018) *Syria Regional Refugee Response*, <https://data2.unhcr.org/en/situations/syria> (accessed August 2018).
- UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES (UNHCR)** (2016) *UNHCR Lebanon: Back to School*. UNHCR, <https://data2.unhcr.org/en/documents/details/43301> (accessed June 2018).
- WILLIAMS, T. Y., BOYD, J. C., CASCARDI, M. A. and POYTHRESS, N.** (1996) 'Factor Structure and Convergent Validity of the Aggression Questionnaire in an Offender Population'. *Psychological Assessment* 8(4): 398–403.