Psychiatry Research 261 (2018) 94–101

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Correlates of bullying and its relationship with psychiatric disorders in Lebanese adolescents☆

Fadi Halabi[a], Lilian Ghandour[b], Racha Dib[c], Pia Zeinoun[d], Fadi T. Maalouf[e,*]

[a] Washington University in St Louis, School of Medicine, Department of Psychiatry, St Louis, MO, USA
[b] American University of Beirut, Faculty of Health Sciences, Department of Epidemiology, Beirut, Lebanon
[c] Centre Hospitalieur Universitaire Notre Dame des Secours, Byblos, Lebanon
[d] American University of Beirut, Faculty of Arts and Sciences, Department of Psychology, Beirut, Lebanon
[e] American University of Beirut, Faculty of Medicine, Department of Psychiatry, Beirut, Lebanon

ABSTRACT

Understanding the contextual determinants of bullying behavior is pivotal for effective interventions. This paper describes the prevalence of bullying, its socio-demographic correlates and factors influencing its relationship with psychiatric disorders among a population-based sample of adolescents from Beirut recruited through a two-stage cluster sampling design. Recruited participants (n = 510) and their parents completed a battery of questionnaires and interviews including the *Development and Wellbeing Assessment* (DAWBA) and the *Peer-Relations Questionnaire* (PRQ). We found that around 30% of the adolescent participants were involved in bullying. Younger age, lower family income, lower parental education, receiving private tutoring, having an anxiety disorder and having a disruptive behavior disorder were correlated with being bullied by peers while lower family income, repeating a school-grade, and having a disruptive behavior disorder were associated with bullying others. Several factors including gender, age group, family income, and attending private versus public schools moderated the relationship between bullying behavior and having psychiatric disorders. Our findings thus highlight the complexity of the association between psychiatric disorders and bullying in settings like Lebanon,

1. Introduction

A plethora of studies describe the deleterious consequences of bullying on mental health (Bowes et al., 2015; Catone et al., 2015; Copeland et al., 2013, 2015; Klomek et al., 2015). This form of interpersonal aggression has been recognized as a modifiable risk factor for mental illness (Costello, 2014; Scott et al., 2014) and has thus been receiving even more attention both in the media and in the scientific literature. The estimated global pooled prevalence for direct bullying is 36% (Modecki et al.), keeping in mind that it ranges widely across countries. While differences in the methodology (Costello, 2014) and the developmental and cultural differences in the perception of bullying (Smith et al., 2002) explain some of the differences in these rates across countries, the WHO surveys, which use similar methodology, point to a genuine difference in prevalence across contexts. Of these contextual factors, income inequality, measured by the Gini coefficient (Contreras et al., 2015; Elgar et al., 2013), an indicator of income variance within a country and high rates of violence (Chaux et al., 2009), have particularly been implicated in increased prevalence of bullying within certain regions. Poverty has also been suggested to increase the risk for bullying in some studies (Ahadi et al., 2014), but not others (Wilson et al., 2013).

Following a social ecological model, other factors at the school, family, and individual levels also play a role in explaining bullying (Barboza et al., 2009). School size, (Whitney and Smith, 1993), attending private versus public schools,. (Azeredo et al., 2015), co-ed versus single-sex schools, (Delfabbro et al., 2006), and academic performance (Nakamoto and Schwartz, 2010) have been associated with bullying behavior. For family factors, poor parental mental health,

(Shetgiri et al., 2013), abuse (Lucas et al., 2016), single-parent families(Jablonska and Lindberg, 2007), and families' socio-economic status (Tippett and Wolke, 2014) have been related to bullying.

Despite the significance of all these factors, individual characteristics rather than contextual and familial ones seem to be the most important determinants of victimization (Azeredo et al., 2015). Age and gender are key determinants to the nature of bullying experienced

☆ This work is supported by a grant from the Medical Practice Plan- Faculty of Medicine/American University of Beirut (PI: F. Maalouf).
* Corresponding author.
E-mail address: Fm38@aub.edu.lb (F.T. Maalouf).

https://doi.org/10.1016/j.psychres.2017.12.039
Received 6 January 2017; Received in revised form 17 October 2017; Accepted 14 December 2017
Available online 15 December 2017

(Marsh et al., 2004; Wang et al., 2009). Other factors including ethnicity (Albdour and Krouse, 2014; Goldweber et al., 2013; Hansen and Sorlie, 2012), sexual orientation (O'Malley Olsen et al., 2014), body weight (van Geel, Vedder, and Tanilon, 2014), physical and dental-facial features (Al-Bitar et al., 2013), and physical complaints and illness (Politis et al., 2014; Sansone et al., 2014; Sentenac et al., 2012) have been consistently associated with peer victimization.

The complexity of these factors highlights the importance of studying the interactions between the predictors of bullying at different levels (Barboza et al., 2009). Thus, focusing on socio-economic context of bullying and the role of culture in peer-victimization sub-types has been deemed a priority in the future directions of the bullying research agenda (Ostrov and Kamper, 2015). Additionally, while poor psychosocial adjustment and mental health outcomes have been linked to bullying in childhood, adolescence and adulthood (Wolke and Lereya, 2015), little is known about whether the aforementioned contextual and individual factors may differentially influence these associations.

Countries within the Arab World provide an interesting context to studying bullying given that socio-political violence and factors linked to aggressive behavior among children (Liddell, Kvalsvig, Qotyana, and Shabalala, 1994) are very prevalent. A study from Lebanon, a country that has experienced irregular bouts of wars and political uncertainty, showed that higher exposure to war events during the Lebanese civil war was associated with greater likelihood of experiencing other acts of interpersonal violence (Macksoud and Aber, 1996).

With this in mind, we aimed to study the factors associated with bullying among adolescents in Lebanon. We further were interested in understanding how different factors at the socioeconomic, family, school, and individual levels influenced the association between bullying and psychopathology. We thus carried a secondary analysis of the data from the Beirut Epidemiological Investigation of the Psychiatric Status of Youth (BEI-PSY) (Ghandour et al., 2017; Maalouf et al., 2016), an epidemiological study that aimed at quantifying the past 30-day prevalence of psychiatric disorders among Arabic-speaking adolescents, aged 11 years to 17 years and 11 months living in Beirut. In addition to exploring the prevalence and correlates of bullying, we specifically were interested in exploring whether the relationship between bullying and psychopathology was influenced by factors including age, gender, family socioeconomic status, attendance of private versus public schools, and school performance.

2. Methods

2.1. Study design, sampling and target sample

In the Beirut Epidemiological Investigation of the Psychiatric Status of Youth (BEI-PSY), a total of 510 children and adolescents were recruited using a multistage cluster sampling design whereby neighborhoods and streets were selected from the different segment areas within Beirut, and then households were sampled using a systematic random sampling strategy. Details of the sampling design and procedures, including the sampling frame, training of the data collectors, and data collection procedures within households are detailed elsewhere. (Ghandour et al., 2017; Maalouf et al., 2016). The study was approved by the American University of Beirut Institutional Review Board.

2.2. Measures

2.2.1. Bullying

The degree of involvement in bullying, as victims or perpetrators, was estimated using the *Peer-Relations Questionnaire* (PRQ) (Rigby and Slee, 1993). The PRQ is a 12-item questionnaire that relies on self-reports to quantify the frequency at which different scenarios apply to the adolescent. The scale yields scores on three different subscales: victim subscale (PRQ-Victim), reflecting the extent to which the adolescent is bullied; bully subscale (PRQ-Bully), reflecting the extent to which the adolescent bullies others; and prosocial behavior subscale (PRQ-Prosocial). The PRQ-Victim subscale includes the items: "I get called names by others", "I get picked on by others", "Others make fun of me", and "I get hit or pushed around by others". The PRQ-Bully subscale consists of the following items: "I am part of a group that goes around pushing others", "I like to make others scared of me", "I enjoy upsetting wimps", and "I like to get into a fight with someone I can easily beat". For each item, participants endorse the options "0 = Never", "1 = Once in a while", "2 = Pretty Often", or "3 = Often" reflecting the frequency of their involvement in the described behavior. Factor loading and the reliability of these sub-scales were originally confirmed among Australian adolescents aged 12–18 years (Rigby K, 1993). The questionnaire has since been used in multiple other studies as a measure of the degree of involvement in bullying (Attar-Schwartz and Khoury-Kassabri, 2015; Lorot-Marchand et al., 2015; Slee, 1994, 1995).

The Arabic version used in this study showed acceptable internal consistency in this sample [PRQ-Victim ($\alpha = 0.74$) and PRQ-Bully ($\alpha = 0.70$)]. Participants who responded "pretty often" or "often" on at least one item of the PRQ-Victim subscale were considered as "Victims of bullying". "Bullies" were similarly categorized using the items on the PRQ-Bully subscale. Furthermore, "Victims of Bullying/Bullies" were defined as those categorized as both "Victims" and "Bullies" and subsequently, the categories "Victims Only" and "Bullies Only" were created.

2.2.2. Psychiatric disorders

The *Development and Well-Being Assessment* (DAWBA) (Goodman et al., 2000) was used as the primary diagnostic tool in BEI-PSY. The DAWBA predicts diagnoses in children and adolescents through computer-generated algorithms based on a set of structured screening and diagnostic questionnaires whereby parents and children report the presence or absence of different symptoms as well as the degree of impairment associated with them. Additionally, open ended responses to questions are further collected. Predicted diagnoses are then confirmed or rejected by clinicians after revision of the close-ended and open-ended responses (Goodman et al., 2000). DSM-IV diagnoses were determined by a child and adolescent psychiatrist (FM) and a licensed masters-level psychologist (PZ) based on the parents' and adolescents' responses on the Arabic version of the DAWBA. The latter had been validated in a Lebanese clinical sample, showing excellent inter-rater reliability between FM and PZ for disruptive and mood disorders ($\kappa = 0.93$ and 0.82, respectively) and good inter-rater reliability for anxiety disorders ($\kappa = 0.72$) (Zeinoun et al., 2013).

2.2.3. Demographic and clinical information

All demographic and clinical information were collected from parental reports through a demographic and clinical information datasheet. Data on gender, age nationality (Lebanese/Non-Lebanese), and parental marital status at the time of the interview (married/divorced, separated, or widowed/deceased) were collected. The educational level for each parent was also assessed (has at least a secondary school degree/does not have a secondary school degree). Monthly household income was divided into three categories (1) Less than 800 USD (2) 801–1600 USD (3) more than 1600 USD. School information included whether the participant: attended school, repeated any school-grade, was receiving private tutoring at home, and was attending private versus public schools. Having a chronic medical condition was assessed using the question: "Does the adolescent have any physical illness or condition for which s/he receives or should receive regular care?".

2.3. Data Analysis

The Statistical Package for Social Sciences (SPSS versions 20.0, 22.0, and 23.0) was used for all analyses. Missing values were present in less than 1% of the analyzed variables and thus list-wise deletions were performed in analyses involving these variables. We took on a multi-step approach in our data analysis. In our first step, associations between being involved in bullying as victims and as perpetrators [outcome variables] and various socio-demographic and clinical variables [independent variables] were tested using Chi-square tests and binary logistic regressions. When needed, *post-hoc* tests were conducted with Bonferroni's correction. Next, independent variables associated with the outcome variables at $p < 0.100$ were classified into categories: "Individual Characteristics" – reflecting characteristics of the participant including age, gender, etc…, "Family Characteristics" – reflecting characteristics of the family including family structure, family educational level and income, etc…, "School-related Factors" – reflecting characteristics of the school including private versus public schooling, participant's performances, etc…, and "Psychiatric Disorders" – reflecting presence or absence of different psychiatric conditions in the participant. As a third step, within each of these categories, multivariate models were generated to explore association with the outcome variables; variables associated with the outcome at $p < 0.05$ were retained to the final multivariate models In the fourth and final step, multivariate models only included adolescents who were attending school and had no other missing variables (476 participants). This was done since data regarding school performance was not collected from participants who were no longer attending school. Stratified analyses were also run, considering selected potential conditions influencing the relationship between the independent variables and outcomes including: adolescent's gender, adolescent's age group, family income, school type and whether the adolescent had repeated a grade or not.

3. Results

3.1. Socio-demographic characteristics of the sample (Table 1)

Of the 510 participants in BEI-PSY, 508 completed the PRQ. Socio-demographic and other characteristics of these participants are summarized in Table 1. Fifty six percent of the participants were male and the majority was Lebanese (90%). Mean age was 13.95 years (SD = 2.14). Seventy nine participants (15.6%) suffered from a chronic medical condition. In 43 cases (8.4%) the biological parents were divorced, separated, or widowed/deceased at the time of interview. In about half of the cases, either or both parents had at least a secondary school degree. With respect to household monthly income, 35.7% of the participants came from households with a monthly income between 200 and 800 USD, 43.5% between 801 and 1600 USD, and 19.8% above 1601 USD. Only twenty six participants (5.3%) were not enrolled in school at the time of interview and 75 (14.8%) were receiving private tutoring at home; 314 (61.8%) attended private schools while 150 (29.3%) attended public schools.

3.2. Prevalence of bullying

Thirty five participants (6.9%) were frequently involved in bullying as both bullies and victims, 73 (14.4%) as bullies only, and 43 (8.5%) as victims only. Cumulatively, 151 participants (29.7%) were frequently involved in at least one form of bullying as either perpetrators, victims or both. Table 2 summarizes the prevalence of different forms of bullying in the PRQ.

Table 1
Socio-demographic characteristics of the sample (N = 508).

Socio-demographic characteristic	N	Valid Percent (%)
Biological sex		
Male	285	56.1
Female	223	43.9
Age group		
11–12 years	134	34.4
13–15 years	178	35.0
16–17 years	155	30.5
Nationality		
Lebanese	457	90.0
Not Lebanese	51	10.0
Chronic medical condition		
Yes	79	15.6
No	429	84.4
Parental education: father with secondary school degree or more		
Yes	267	52.6
No	241	47.4
Parental education: mother with secondary school degree or more		
Yes	285	56.2
No	223	43.9
Monthly household income		
233–800 USD	182	35.7
801–1600 USD	222	43.5
1601 USD or greater	101	19.8
Unspecified	5	1.0
Schooling		
Private – Formal	314	61.8
Public Formal	149	29.3
Vocational	16	3.1
Special Needs/Boarding School	3	0.6
Doesn't Attend School	26	5.1
Repeated at least one school grade		
No	349	68.7
Yes	133	26.2
Not Applicable	27	5.1
Receives private tutoring at home		
No	407	80.1
Yes	75	14.8
Not Applicable	27	5.1
Parental marital status		
Married	465	91.5
Separate/Divorced	27	5.4
Deceased	16	3.1

3.3. Correlates of involvement in bullying

3.3.1. Individual characteristics

Younger participants were more likely to be victims of bullying (Exp (B) = 1.18, p = 0.008). Conversely, age was not associated with being a bully (Exp(B) = 1.05, $p > 0.05$) among both boys and girls. Gender was not associated with either being a victim of bullying ($\chi^2(1508) = 0.11$, $p > 0.05$) or bullying others ($\chi^2(1508) = 0.21$, $p > 0.05$). Being non-Lebanese was associated with higher likelihood of experiencing victimization ($\chi^2(1508) = 4.45$, $p = 0.035$; UOR = 2.06, 95% CI = [1.04, 4.07]) but not with bullying ($\chi^2(1508) = 0.076$, $p > 0.05$). Having a chronic medical condition was not associated with either being a victim ($\chi^2(1508) = 0.082$, $p > 0.05$) or perpetrator of bullying ($\chi^2(1508) = 0.16$, $p > 0.05$).

3.3.2. Family characteristics

Parental marital status [Married v/s Other] was not associated with involvement in bullying as victims ($\chi^2(1508) = 0.03$, $p > 0.05$) or perpetrators ($\chi^2(1508) = 0.66$, $p > 0.05$). The percentage of those who reported being victims of bullying was higher with lower monthly family income [200–800 USD = 17.6%; 801–1600 USD = 16.8%; Above

Table 2
Prevalence of the different forms of bullying in the sample.

PRQ Question	Total sample (N =508) N (%)	Participants involved as victims (N = 78) N (%)	Participants involved as bullies (N =108) N (%)
I get called names by others	34 (6.7)	34 (43.6)	13 (12.0)
I get picked on by others	41 (8.1)	41 (52.6)	20 (18.5)
Others make fun of me	34 (6.7)	34 (43.6)	11 (10.2)
I get hit and pushed around by others	19 (3.7)	19 (24.4)	12 (11.1)
I am part of a group that goes round teasing others	57 (11.2)	19 (24.4)	57 (52.8)
I like to make others scared of me	48 (9.4)	12 (15.4)	48 (44.4)
I enjoy upsetting wimps	18 (3.5)	6 (7.7)	18 (16.7)
I like to get into a fight with someone I can easily beat	46 (9.1)	14 (17.9)	46 (42.6)

1600 USD = 7.0%] ($\chi^2(2503) = 6.49, p = 0.039$). A similar trend was observed for the percentage of those who bullied others [200–800 USD = 24.2%; 801–1600 USD = 22.3%; Above 1600 USD = 12.0%, ($\chi^2(2503) = 6.22, p = 0.045$)]. As for parental education, having a secondary school degree was associated with lower odds of being bullied but not bullying; more specifically, paternal secondary school degree was associated with less likelihood of being victims of bullying ($\chi^2(1507) = 5.01, p = 0.025$; UOR = 0.57, 95% CI = [0.35, 0.94]) but not bullying ($\chi^2(1507) = 2.57, p > 0.05$); the same was true for maternal secondary level education ($\chi^2(1507) = 5.97, p = 0.015$; UOR = 0.55, 95% CI = [0.34, 0.89] versus ($\chi^2(1507) = 0.22$, p > 0.05), respectively.

3.3.3. School-related characteristics

Not attending school (versus attending) as well as attending a public (versus private) school were not associated with a higher likelihood of being perpetrators of bullying or victims of bullying. However, repeating a school grade was associated with increased likelihood of being a bully ($\chi^2(1481) = 9.62, p = 0.002$; UOR = 2.07, 95% CI = [1.30, 3.28]) but not a victim of bullying ($\chi^2(1481) = 3.03, p = 0.082$; UOR = 1.60, 95% CI = [0.94, 2.71]). Receiving private tutoring at home was only associated with being a victim of bullying ($\chi^2(1481) = 9.55, p = 0.002$; UOR = 2.48, 95% CI = [1.37, 4.46]) but not a perpetrator ($\chi^2(1481) = 0.19, p > 0.05$). Interestingly, this relationship differed between students in private versus public schools. Within public schools, students receiving private tutoring at home were more likely to bully others (UOR = 2.57, 95% CI = [1.02, 6.48]) with no association with being bullied. Those in private schools, however, were more likely to be victimized (UOR = 3.02, 95% CI = 1.49, 6.13) with no association with bullying others.

3.3.4. Psychiatric disorders and bullying involvement

Having any psychiatric disorder was associated with a higher likelihood of belonging to any of the different groups of involvement in bullying [No involvement v/s Bully/Victim v/s Bully Only v/s Victim Only] ($\chi^2(3508) = 32.16, p < 0.001$). Specific trends are summarized in Table 3

3.3.5. Multivariate model for correlates of being bullied by peers and bullying others

When adjusting for other factors, younger age, not having higher parental education and higher family income, private tutoring at home, having an anxiety disorder, and having a disruptive behavior disorder were associated with increased likelihood of being bullied (Table 4).

Table 3
Involvement in bullying and psychiatric disorders.

	Group	No involvement in bullying	Bully/victim	Bully only	Victims only
Any Disorder †	%(n)	19.6 (70)	57.1 (20)	31.5 (23)	41.9 (18)
	OR [95% CI]	Reference	5.46 [2.67, 11.24]***	1.89 [1.08, 3.30]*	2.95 [1.53, 5.71]**
Externalizing Disorders †	%(n)	7.8 (20)	31.4 (11)	20.5 (15)	14.0 (6)
	OR [95% CI]	Reference	5.38 [2.39, 12.20]***	3.04 [1.53, 6.02]**	1.90 [0.74, 4.90]
Emotional Disorders †	%(n)	13.2 (47)	40.0 (14)	13.7 (10)	34.9 (15)
	OR [95% CI]	Reference	4.40 [2.10, 9.26]***	1.05 [0.50, 2.18]	3.53 [1.76, 7.09]***

† p < 0.001.

Table 4
Multivariable model predicting involvement in bullying as a victim among participants who attend school.

	B (SE)	OR [95% CI]
Age in Years	−0.17(0.07)*	0.85 [0.74, 0.97]
Father Has Secondary School Degree* Mother Has Secondary School Degree* Family Monthly Income Above 1600 USD	−1.16(0.54)*	0.32 [0.11, 0.90]
Receives Private Tutoring At Home	0.70 (0.33)*	2.01 [1.06, 3.81]
Has An Anxiety Disorder	1.27 (0.32)***	3.58 [1.90, 6.74]
Has A Disruptive Behavior Disorder	1.33 (0.53)*	3.77 [1.34, 10.64]

R^2 = 0.09 (Cox & Snell), .15 (Nagelkerke). Model $\chi^2(5) = 43.54, p < 0.001$.
* $p < 0.05$.
*** $p < 0.001$.

Table 5
Multivariable regression model predicting involvement in bullying as perpetrators.

	B (SE)	OR [95% CI]
Monthly Family Income Above 1600 USD	−0.73 (0.35)*	0.48 [0.24, 0.96]
Ever Repeated A School-Grade	0.56 (0.25)*	1.75 [1.07, 2.85]
Has A Disruptive Behavior Disorder	2.18 (0.52)***	8.87 [3.22, 24.48]

R^2 = 0.07 (Cox & Snell), .11 (Nagelkerke). Model $\chi^2(3) = 32.93$, $p < 0.001$.
* p<0.05.
*** p<0.001.

Lower family income, repeating a school grade, and having a disruptive behavior disorder were associated with increased likelihood to bully others (Table 5).

3.4. Being a victim of bullying and specific psychiatric disorders

Being a victim of bullying was associated with having an anxiety disorder ($\chi^2(1508) = 29.49$, $p < 0.001$; UOR = 4.46, 95% CI = [2.51, 7.93]), a mood disorder ($\chi^2(1508) = 5.51$, $p = 0.019$; UOR = 2.48, 95% CI = [1.14, 5.42]), a disruptive behavior disorder ($\chi^2(1508) = 6.24$, p = 0.013; UOR = 2.95, 95% CI = [1.22, 7.15]), and ADHD ($\chi^2(1, 508) = 5.93$, $p = 0.015$; UOR = 2.25, 95% CI = [1.16, 4.39]).

The relationship between being bullied and the aforementioned psychiatric disorders seemed to differ across gender, age, family income, attendance of private versus public schools, and repeating school grades.

With regards to gender differences, there was a statistically significant association between being bullied and having a mood disorder only among girls (UOR = 3.39, 95% CI = [1.25, 9.17]) but not boys. The same pattern was also seen among girls only, with regards to ADHD (UOR = 4.85, 95% CI = [1.70, 13.85]) and disruptive behavior disorders (UOR = 9.40, 95% CI = [1.51, 58.61]).

There were some interesting differences also across age groups. Being victimized was not related to having anxiety, mood, ADHD, or disruptive behavior disorders among 11–12 year olds. Conversely, among 13–15 year old adolescents, being victimized was significantly associated with higher odds of having anxiety disorders (UOR = 5.98, 95% CI = [2.47. 14.48]), ADHD (UOR = 3.14, 95% CI = [1.19, 8.30]), and disruptive behavior disorders (UOR = 5.39, 95% CI = [1.61, 17.99]). Those in the late adolescence group (16 − 17) were the only group to show a statistically significant association between being victimized and having mood disorders (UOR = 4.41, 95% CI = [1.19, 16.32]) and also had an association with having an anxiety disorder (UOR = 11.31, 95% CI = [3.19, 40.12]). They, however, did not show a statistically significant association between being bullied and ADHD or disruptive behavior disorders.

The association between being bullied and having psychiatric disorders also differed across family income groups. While there was no statistically significant association between being bullied and having any of the psychiatric disorders in the highest family income category (> 1600 USD), being bullied was only associated with a higher likelihood of having anxiety disorders (UOR = 5.65, 95% CI = [2.42, 13.19]) for those in the middle income category and with a higher likelihood of having ADHD (UOR = 2.95, 95% CI = [1.07, 8.13]), a mood disorder (UOR = 5.22, 95% CI = [1.84, 14.87]) and an anxiety disorder (UOR = 2.70, 95% CI = [1.09, 6.69]) in the lowest income category.

Students in private schools were more likely to have anxiety disorders if they were bullied (UOR = 5.03, 95% CI = [2.46, 10.24]), while students in public schools were more likely to have mood disorders (UOR = 3.97, 95% CI = [1.03, 15.31]) and disruptive behavior disorders (UOR = 1.64, 95% CI = [1.64, 39.09]). Although repeating a school grade was associated with a higher likelihood of being bullied and having a psychiatric disorder (Maalouf et al., 2016*)*, none of the associations between being bullied and having specific psychiatric disorders was statistically significant in this group. While for those who never repeated school-grades, being victimized was associated with disruptive behavior disorders (UOR = 5.68, 95% CI = [1.47, 21.98]), anxiety disorders (UOR = 5.38, 95% CI = [2.57, 11.28]), and ADHD (UOR = 3.33, 95% CI = [1.36, 8.19]).

3.5. Bullying others and specific psychiatric disorders

Being a bully was associated with having a disruptive behavior disorder ($\chi^2(1508) = 31.41$, p<0.001; UOR = 8.62, 95% CI = [3.58, 20.75]) and ADHD ($\chi^2(1508) = 12.94$, p<0.001; UOR = 2.91, 95% CI = [1.59, 5.31]) but not with having an anxiety disorder ($\chi^2(1, 508) = 2.94$, $p > 0.05$) or a mood disorder ($\chi^2(1508) = 2.77$, $p = 0.096$).

The association between bullying and disruptive behavior disorders maintained signifance across genders, age groups, income categories, repeating school grades, or attending private versus public schools; thus for the economy of space, we will not report on these findings. For ADHD, however, the association with bullying again only reach statistically significant levels in certain groups depending on age, family income, repeating classes, and private versus public schooling.

Bullying others was associated with ADHD at a statistically significant level only among participants in the late adolescence age group (UOR = 5.21, 95% CI = [1.62, 16.78]).

Only adolescents in the lowest income group and those in the highest income group were more likely to have ADHD if they bullied others (UOR = 2.97, 95% CI = [1.14, 7.73]; UOR = 10.38, 95% CI = [2.47, 43.63]; for lowest income and highest income respectively).

Repeating a school grade also differentiated the association between bullying others and having ADHD such that those who never repeated a school-grade were more likely to have ADHD if they bullied others (UOR = 3.33, 95% CI = [1.43, 7.76]) which was not the case for those who repeated a school-grade. The association with bullying others was only significant among students attending private schools (UOR = 2.85, 95% CI = [1.35, 6.04]) and not among those attending public schools.

4. Discussion

Our study aimed to investigate factors associated with bullying and being victims of bullying as well as to understand the link between involvement in bullying and psychiatric disorders across different individual and contextual factors in adolescents. Our findings highlight the importance of understanding these complex relationships. In addition, our study is an important addition to the few studies investigating peer-victimization within the Arab World, a region that suffers from socio-political violence.

We found that almost a third of the adolescents in our sample were frequently involved in bullying behavior, either as victims or perpetrators. 15.4% were victims of bullying and 21.3% frequently bullied others. Our prevalence rates are in line with the worldwide pooled prevalence of bullying (Modecki et al., 2014) as well as estimates from landmark national studies in the United States (Nansel et al., 2001). As compared to previous data from Lebanon, however, our rate of involvement in any form of bullying was lower than that reported by Khamis (2015), probably because we considered ‘frequent’ levels of bullying. In fact, in our sample about half of our participants reported *any* sort of involvement in bullying over the past year, which is very comparable to the 53.4% rate reported by Khamis (Khamis, 2015). Our percentage of those who experienced victimization is also slightly lower than what has been reported by the WHO-GSHS (Fleming andJacobsen, 2010) where a third of participants endorsed having been bullied for at least one day during the month preceding the survey.

Interestingly, boys and girls were equally likely to be involved in bullying, although higher involvement among boys has been endorsed by several studies (Nansel et al., 2001; Paget et al., 2015), including studies from the Arab World (Abdirahman et al., 2013) and Lebanon (Khamis, 2015). This relationship was also found among studies that used the PRQ (Gan et al., 2014). Still, this is comparable to some studies among adolescents who similarly reported no gender differences (Silva et al., 2012). The association between younger age and higher likelihood of being bullied in our sample is in line with international (Currie et al., 2012; Nansel et al., 2001), regional (Fleming and Jacobsen, 2010), and local studies (Khamis, 2015).

At the bivariate analysis level, being non-Lebanese was associated with a higher likelihood of being bullied in our sample. This is in line with the general trend seen in international studies whereby children and adolescents of certain minority statuses tend to experience more bullying. For example, several studies found that youth who were African American/Canadian were more likely to be bullied in the United States and Canada (Albdour and Krouse, 2014; Goldweber et al., 2013; Larochette et al., 2010). Larochette and colleagues postulate that racial minorities may be targeted as they may be perceived as a threat towards the racial majorities (Larochette et al., 2010). While "Non-Lebanese Arabic speaking" adolescents are not necessarily ethnically different, they may have different dialects, appearance, and cultural values in comparison to their Lebanese peers which put them at risk to be excluded and bullied. Although data collection was concluded in 2012, when the influx of Syrian refugees to Lebanon was still in its early stages, the tendency for non-Lebanese adolescents to be bullied raises concerns regarding the experience of refugee children among peer-groups.

Poorer academic performance has been linked to peer-victimization (Nakamoto and Schwartz, 2010). In our sample, we found that repeating a school-grade, but not receiving private tutoring at home, was associated with an increased likelihood of bullying others. This may suggest that other factors associated with repeating a school grade, such as being older and physically bigger, could explain this relationship rather than the adolescent's academic performance. As for those bullied, receiving private tutoring at home was a significant correlate. It has been shown that within schools with a higher level of academic performance gap, that is, a high variability between the performance of students, the prevalence of bullying is higher (Contreras et al., 2015). Short of a direct measure of academic performance in our study, it may be that students who received private tutoring at home were those who were struggling academically and hence, were more likely to be bullied. It is thus important to study, both qualitatively and quantitatively, the factors that make adolescents with lower academic achievement target of bullying.

Within our sample, and after adjusting for other correlates, lower SES was associate with involvement as both victims and bullies. A met-analysis revealed a low, yet significant association between socio-economic status (SES) and propensity to being bullied and to bully others (Tippett and Wolke, 2014). Children of lower SES standing may be excluded simply due to their inability to afford certain lifestyle goods in comparison to their peers (Tippett and Wolke, 2014). Additionally, their propensity to being bullied may be explained by factors including a restricted ability to resolve problems due to lack of exposure to resources during development or mediated by home environments including a higher likelihood to experience violence at home (Tippett and Wolke, 2014).

Regarding association with psychiatric disorders, being victimized by peers was associated with having anxiety disorders, mood disorders, ADHD, and disruptive behavior disorders, while bullying others was only associated with having ADHD and disruptive behavior disorders. Interestingly, the association with mood disorders, ADHD, and disruptive behavior disorders was only significant among girls while the association with anxiety disorders was significant among both boys and girls. It has been shown that girls with disruptive behavior have more impaired peer relationships than boys (Mikami and Lorenzi, 2011) maybe because they are perceived to be more deviant and hence are less likely to be accepted by peers (Chang, 2004) . Interestingly, the association between being bullied and having psychiatric disorders differed across income groups. Not only were adolescents in the lower income group at a higher risk of having psychiatric disorders (Maalouf et al., 2016) and to be bullied, but they were also more likely to have a psychiatric disorder if they are bullied according to our current findings. Individuals coming from lower income families may be underprivileged not only in terms of exposure to bullying but also in terms of support and learned problem solving skills. Indeed there could be shared risk factors that increase the propensity to being bullied and developing psychiatric disorders in children coming from low income families such as a restricted ability to resolve problems due to lack of exposure to resources during development or higher likelihood to experience adversities at home (Tippett and Wolke, 2014).

With respect to being bullied, the association with having an anxiety disorder, however, seemed to be the least affected by the different contexts, namely gender, SES and age. This association has been the most extensively and robustly reported in the literature (Bond et al., 2001; Lereya et al., 2015; Reijntjes et al., 2010; Stapinski et al., 2015). While the cross-sectional design of our study does not allow us to draw conclusions regarding temporality, multiple studies have suggested a bidirectional relationship between peer-victimization and internalizing symptoms. In a met-analysis of longitudinal studies, it was found that being victimized by peers affected internalizing symptoms and the latter in turn influenced the likelihood of being victimized by peers (Reijntjes et al., 2010). Children who are victimized by peers see this aggressive interpersonal interaction as a stressor that causes feelings of anxiety (Degnan et al., 2010) while children who are anxious may seem more vulnerable to their peers making them easier targets for bullying (Isolan et al., 2013). How children interpret their bullying experiences seems to highly impact the psychological outcomes of these experiences. In fact, children who were repeatedly victimized were found to have increased vulnerability in their inferential styles producing distorted cognitive patterns that put them at higher risk for depression (Gibb et al., 2012). Certain cognitive styles including rumination and catastrophizing were found to strengthen the effect of bullying on emotional problems, while positive reappraisal was found to reduce it (Garnefski and Kraaij, 2014). Negative self-esteem was found to mediate the relationship between peer-victimization and suicidality (Jones et al., 2014). Children who had self-blaming attribution regarding their victimization were found to have more internalizing disorders, while those who had hostile attribution were found to have more externalizing disorders (Perren et al., 2013). Biologically, evidence on the moderating role of the serotonin transporter gene in the relationship between bullying and emotional disorders has been unraveled (Benjet et al., 2010; Sugden et al., 2010). An effect of victimization on dopaminergic functioning (Novick et al., 2011), cortisol reactivity (Ouellet-Morin et al., 2011), and telomere erosion (Shalev et al., 2013) may possibly also link peer-victimization with the development of emotional disorders. Socially, having supportive friends (Kendrick et al., 2012) as well as parental monitoring (Jantzer et al., 2015) and support (Bowes et al., 2010) may protect from the adverse mental health outcomes of bullying.

On the other hand, the relationship between bullying others and having disruptive behavior disorders remained statistically significant when studied across all individual, family, and school variables. Conduct problems have been shown to be associated with involvement in bullying (Viding et al., 2009), an association that seems to be mediated by the presence of callous-unemotional traits (Thornton et al., 2013).

5. Limitations

The main purpose of BEI-PSY was assessing the prevalence of psychiatric disorders rather than the prevalence of bullying. As such, we only used a self-report questionnaire that gives a general estimate regarding involvement in bullying, without assessing motivations or reasons for bullying or other forms of bullying including cyberbullying and spreading rumors. Additionally, we did not assess certain variables that are universally known to be associated with bullying such as perception of physical appearance, sexual orientation, and sibling bullying. We also did not assess some variables that may be culturally relevant such as belonging to a religious minority or being overtly religious, migration status, and exposure to violence, directly or indirectly.

Another limitation was our sample size. With only 508 participants, 78 of which were victimized and 108 of which bullied others, some analyses may have been underpowered to detect statistically significant associations. In terms of sampling, our sample was restricted to adolescents residing in Beirut. Urbanicity has been linked to bullying (Goldweber et al., 2013) and thus, our prevalence rates and associations may not be generalizable to adolescents in rural areas.

6. Conclusions

Our study examined factors that influence the relationship between bullying and psychiatric disorders in adolescents. Our findings highlight the need to prioritize groups that are vulnerable to the deleterious effects of bullying. Our findings also shed light on the importance of understanding the influence of local contextual factors on the relationship between bullying and mental illness as potentially a key to more targeted interventions on moderating outcomes of bullying.

References

Abdirahman, H., Fleming, L.C., Jacobsen, K.H., 2013. Parental involvement and bullying among middle-school students in North Africa. East. Mediterr. Health J. 19 (3), 227–233.

Ahadi, Z., Qorbani, M., Kelishadi, R., Ardalan, G., Taslimi, M., Mahmoudarabi, M., Motlagh, M., Asayeh, H., Shafiee, G., Lariani, B., Heshmat, R., 2014. Regional disparities in psychiatric distress, violent behavior, and life satisfaction in Iranian adolescents: the CASPIAN-III study. J. Dev. Behav. Pediatr. 35 (9), 582–590.

Al-Bitar, Z.B., Al-Omari, I.K., Sonbol, H.N., Al-Ahmad, H.T., Cunningham, S.J., 2013. Bullying among Jordanian schoolchildren, its effects on school performance, and the contribution of general physical and dentofacial features. Am. J. Orthod. Dentofac. Orthop. 144 (6), 872–878.

Albdour, M., Krouse, H.J., 2014. Bullying and victimization among African American adolescents: a literature review. J. Child Adolesc. Psychiatr. Nurs. 27 (2), 68–82.

Attar-Schwartz, S., Khoury-Kassabri, M., 2015. Indirect and verbal victimization by peers among at-risk youth in residential care. Child Abus. Negl. 42, 84–98.

Azeredo, C.M., Levy, R.B., Araya, R., Menezes, P.R., 2015. Individual and contextual factors associated with verbal bullying among Brazilian adolescents. BMC Pediatr. 15, 49.

Barboza, G.E., Schiamberg, L.B., Oehmke, J., Korzeniewski, S.J., Post, L.A., Heraux, C.G., 2009. Individual characteristics and the multiple contexts of adolescent bullying: an ecological perspective. J. Youth Adolesc. 38 (1), 101–121.

Benjet, C., Thompson, R.J., Gotlib, I.H., 2010. 5-HTTLPR moderates the effect of relational peer victimization on depressive symptoms in adolescent girls. J. Child Psychol. Psychiatry 51 (2), 173–179.

Bond, L., Carlin, J.B., Thomas, L., Rubin, K., Patton, G., 2001. Does bullying cause emotional problems? A prospective study of young teenagers. Bmj 323 (7311), 480–484.

Bowes, L., Joinson, C., Wolke, D., Lewis, G., 2015. Peer victimisation during adolescence and its impact on depression in early adulthood: prospective cohort study in the United Kingdom. Bmj 350, h2469.

Bowes, L., Maughan, B., Caspi, A., Moffitt, T.E., Arseneault, L., 2010. Families promote emotional and behavioural resilience to bullying: evidence of an environmental effect. J. Child Psychol. Psychiatry 51 (7), 809–817.

Catone, G., Marwaha, S., Kuipers, E., Lennox, B., Freeman, D., Bebbington, P., Broome, M., 2015. Bullying victimisation and risk of psychotic phenomena: analyses of British national survey data. Lancet Psychiatry 2 (7), 618–624.

Chang, L., 2004. The role of classroom norms in contextualizing the relations of children's social behaviors to peer acceptance. Dev. Psychol. 40 (5), 691–702.

Chaux, E., Molano, A., Podlesky, P., 2009. Socio-economic, socio-political and socio-emotional variables explaining school bullying: a country-wide multilevel analysis. Aggress. Behav. 35 (6), 520–529.

Contreras, D., Elacqua, G., Martinez, M., Miranda, A., 2015. Income inequality or performance gap? A multilevel study of school violence in 52 countries. J. Adolesc. Health 57 (5), 545–552.

Copeland, W.E., Bulik, C.M., Zucker, N., Wolke, D., Lereya, S.T., Costello, E.J., 2015. Does childhood bullying predict eating disorder symptoms? A prospective, longitudinal analysis. Int. J. Eat. Disord. 48 (8), 1141–1149.

Copeland, W.E., Wolke, D., Angold, A., Costello, E.J., 2013. Adult psychiatric outcomes of bullying and being bullied by peers in childhood and adolescence. JAMA Psychiatry 70 (4), 419–426.

Costello, E.J., 2014. Adult outcomes of childhood bullying victimization. Am. J. Psychiatry 171 (7), 709–711.

Currie, C., Zanotti, C., Morgan, A., Currie, D., Looze, M. d., Roberts, C., Samdal, O., Smith, O., 2012. Health behavior in school-aged children (HBSC) study: international report from the 2009/2010 survey. Health Policy Child. Adolesc.

Degnan, K.A., Almas, A.N., Fox, N.A., 2010. Temperament and the environment in the etiology of childhood anxiety. J. Child Psychol. Psychiatry 51 (4), 497–517.

Delfabbro, P., Winefield, T., Trainor, S., Dollard, M., Anderson, S., Metzer, J., Hammarstrom, A., 2006. Peer and teacher bullying/victimization of South Australian secondary school students: prevalence and psychosocial profiles. Br. J. Educ. Psychol. 76 (Pt 1), 71–90.

Elgar, F.J., Pickett, K.E., Pickett, W., Craig, W., Molcho, M., Hurrelmann, K., Lenzi, M., 2013. School bullying, homicide and income inequality: a cross-national pooled time series analysis. Int. J. Public Health 58 (2), 237–245.

Fleming, L.C., Jacobsen, K.H., 2010. Bullying among middle-school students in low and middle income countries. Health Promot. Int. 25 (1), 73–84.

Gan, S.S., Zhong, C., Das, S., Gan, J.S., Willis, S., Tully, E., 2014. The prevalence of bullying and cyberbullying in high school: a 2011 survey. Int. J. Adolesc. Med. Health 26 (1), 27–31.

Garnefski, N., Kraaij, V., 2014. Bully victimization and emotional problems in adolescents: moderation by specific cognitive coping strategies? J. Adolesc. 37 (7), 1153–1160.

Ghandour, L., Shehab, A., Zeinoun, P., Tavitian, L., Halabi, F., Maalouf, F., 2017. Contextual Challenges and Solutions to Undertaking a Household Adolescent MentalHealth Survey in a Developing Country. East Mediterr **Health** J Accepted.

Gibb, B.E., Stone, L.B., Crossett, S.E., 2012. Peer victimization and prospective changes in children's inferential styles. J. Clin. Child Adolesc. Psychol. 41 (5), 561–569.

Goldweber, A., Waasdorp, T.E., Bradshaw, C.P., 2013. Examining associations between race, urbanicity, and patterns of bullying involvement. J. Youth Adolesc. 42 (2), 206–219.

Goodman, R., Ford, T., Richards, H., Gatward, R., Meltzer, H., 2000. The development and well-being assessment: description and initial validation of an integrated assessment of child and adolescent psychopathology. J. Child Psychol. Psychiatry 41 (5), 645–655.

Hansen, K.L., Sorlie, T., 2012. Ethnic discrimination and psychological distress: a study of Sami and non-Sami populations in Norway. Transcult. Psychiatry 49 (1), 26–50.

Isolan, L., Salum, G.A., Osowski, A.T., Zottis, G.H., Manfro, G.G., 2013. Victims and bully-victims but not bullies are groups associated with anxiety symptomatology among Brazilian children and adolescents. Eur. Child Adolesc. Psychiatry 22 (10), 641–648.

Jablonska, B., Lindberg, L., 2007. Risk behaviours, victimisation and mental distress among adolescents in different family structures. Soc. Psychiatry Psychiatr. Epidemiol. 42 (8), 656–663.

Jantzer, V., Haffner, J., Parzer, P., Resch, F., Kaess, M., 2015. Does parental monitoring moderate the relationship between bullying and adolescent nonsuicidal self-injury and suicidal behavior? A community-based self-report study of adolescents in Germany. BMC Public Health 15, 583.

Jones, H.A., Bilge-Johnson, S., Rabinovitch, A.E., Fishel, H., 2014. Self-reported peer victimization and suicidal ideation in adolescent psychiatric inpatients: the mediating role of negative self-esteem. Clin. Child Psychol. Psychiatry 19 (4), 606–616.

Kendrick, K., Jutengren, G., Stattin, H., 2012. The protective role of supportive friends against bullying perpetration and victimization. J. Adolesc. 35 (4), 1069–1080.

Khamis, V., 2015. Bullying among school-age children in the greater Beirut area: risk and protective factors. Child Abus. Negl. 39, 137–146.

Klomek, A.B., Sourander, A., Elonheimo, H., 2015. Bullying by peers in childhood and effects on psychopathology, suicidality, and criminality in adulthood. Lancet Psychiatry 2 (10), 930–941.

Larochette, A.C., Murphy, A.N., Craig, W.M., 2010. Racial bullying and victimization in canadian school-aged children: Individual and school level effects. Sch. Psychol. Int. 31 (4), 389–408.

Lereya, S.T., Copeland, W.E., Zammit, S., Wolke, D., 2015. Bully/victims: a longitudinal, population-based cohort study of their mental health. Eur. Child Adolesc. Psychiatry 24 (12), 1461–1471.

Liddell, C., Kvalsvig, J., Qotyana, P., Shabalala, A., 1994. Community violence and young south african children's involvement in aggression. Int. J. Behav. Dev. 17 (4), 613–628.

Lorot-Marchand, A., Guerreschi, P., Pellerin, P., Martinot, V., Gbaguidi, C.C., Neiva, C., Devauchelle, B., Frochisse, C., Poli-Merol, M., Francois-Fiquet, C., 2015. Frequency and socio-psychological impact of taunting in school-age patients with cleft lip-palate surgical repair. Int. J. Pediatr. Otorhinolaryngol. 79 (7), 1041–1048.

Lucas, S., Jernbro, C., Tindberg, Y., Janson, S., 2016. Bully, bullied and abused. Assoc. Violence home bullying Child. Scand. J. Public Health 44 (1), 27–35.

Maalouf, F.T., Ghandour, L.A., Halabi, F., Zeinoun, P., Shehab, A.A.S., Tavitian, L., 2016. Psychiatric disorders among adolescents from Lebanon: prevalence, correlates, and treatment gap. Social. Psychiatry Psychiatr. Epidemiol. 1–12.

Macksoud, M.S., Aber, J.L., 1996. The war experiences and psychosocial development of children in Lebanon. Child Dev. 67 (1), 70–88.

Marsh, H., Parada, R., Craven, R., Finger, L., 2004. Who are the victims and bullies? In: Sanders, C., Phye, G. (Eds.), Bullying: Implications for the classroom. Elsevier Academic Press, California, USA, pp. 67.

Mikami, A.Y., Lorenzi, J., 2011. Gender and conduct problems predict peer functioning among children with attention-deficit/hyperactivity disorder. J. Clin. Child Adolesc. Psychol. 40 (5), 777–786.

Modecki, K.L., Minchin, J., Harbaugh, A.G., Guerra, N.G., Runions, K.C., 2014. Bullying

prevalence across contexts: a meta-analysis measuring cyber and traditional bullying. J. Adolesc. Health 55 (5), 602–611.
Nakamoto, J., Schwartz, D., 2010. Is peer victimization associated with academic achievement? A meta-analytic review. Social. Dev. 19 (2), 221–242.
Nansel, T.R., Overpeck, M., Pilla, R.S., Ruan, W.J., Simons-Morton, B., Scheidt, P., 2001. Bullying behaviors among US youth: prevalence and association with psychosocial adjustment. JAMA 285 (16), 2094–2100.
Novick, A.M., Forster, G.L., Tejani-Butt, S.M., Watt, M.J., 2011. Adolescent social defeat alters markers of adult dopaminergic function. Brain Res. Bull. 86 (1–2), 123–128.
O'Malley Olsen, E., Kann, L., Vivolo-Kantor, A., Kinchen, S., McManus, T., 2014. School violence and bullying among sexual minority high school students, 2009–2011. J. Adolesc. Health 55 (3), 432–438.
Ostrov, J.M., Kamper, K.E., 2015. Future directions for research on the development of relational and physical peer victimization. J. Clin. Child Adolesc. Psychol. 44 (3), 509–519.
Ouellet-Morin, I., Danese, A., Bowes, L., Shakoor, S., Ambler, A., Pariante, C.M., Papadopoulos, A., Caspi, A., Moffitt, T., Arseneault, L., 2011. A discordant monozygotic twin design shows blunted cortisol reactivity among bullied children. J. Am. Acad. Child Adolesc. Psychiatry 50 (6), 574–582 (e573).
Paget, A., Parker, C., Henley, W., Heron, J., Ford, T., Emond, A., 2015. Which children and young people are excluded from school? Findings from the Avon longitudinal study of parents and Children (ALSPAC). Lancet 385 (Suppl 1), S76.
Perren, S., Ettekal, I., Ladd, G., 2013. The impact of peer victimization on later maladjustment: mediating and moderating effects of hostile and self-blaming attributions. J. Child Psychol. Psychiatry 54 (1), 46–55.
Politis, S., Bellou, V., Belbasis, L., Skapinakis, P., 2014. The association between bullying-related behaviours and subjective health complaints in late adolescence: cross-sectional study in Greece. BMC Res. Notes 7, 523.
Reijntjes, A., Kamphuis, J.H., Prinzie, P., Telch, M.J., 2010. Peer victimization and internalizing problems in children: a meta-analysis of longitudinal studies. Child Abus. Negl. 34 (4), 244–252.
Rigby, K., Slee, P.T., 1993. Dimensions of interpersonal relation among Australian children and implications for psychological well-being. J. Soc. Psychol. 133 (1), 33–42.
Rigby K, S.P., 1993. Dimensions of interpersonal relation among Australian children and implication for psychological well-being. J. Soc. Psychol. 133 (1), 33–42.
Sansone, R.A., Watts, D.A., Wiederman, M.W., 2014. Being bullied in childhood, and pain and pain perception in adulthood. Int. J. Soc. Psychiatry 60 (5), 449–453.
Scott, J.G., Moore, S.E., Sly, P.D., Norman, R.E., 2014. (2014). Bullying in children and adolescents: a modifiable risk factor for mental illness. Aust. N. Z. J. Psychiatry 48 (3), 209–212.
Sentenac, M., Arnaud, C., Gavin, A., Molcho, M., Gabhainn, S.N., Godeau, E., 2012. Peer victimization among school-aged children with chronic conditions. Epidemiol. Rev. 34, 120–128.
Shalev, I., Moffitt, T.E., Sugden, K., Williams, B., Houts, R.M., Danese, A., Mill, J., Arseneault, L., Caspi, A., 2013. Exposure to violence during childhood is associated with telomere erosion from 5 to 10 years of age: a longitudinal study. Mol. Psychiatry 18 (5), 576–581.
Shetgiri, R., Lin, H., Flores, G., 2013. Trends in risk and protective factors for child bullying perpetration in the United States. Child Psychiatry Hum. Dev. 44 (1), 89–104.
Silva, R.A., Cardoso Tde, A., Jansen, K., Souza, L.D., Godoy, R.V., Cruzeiro, A., Horta, B., Pinheiro, R., 2012. Bullying and associated factors in adolescents aged 11 to 15 years. Trends Psychiatry Psychother. 34 (1), 19–24.
Slee, P., 1994. Situational and interpersonal correlates of anxiety associated with peer victimization. Child Psychiatry Hum. Dev. 25 (2), 97–107.
Slee, P., 1995. Peer victimization and its relationship to depression among Australian primary school students. Personal. Individ. Differ. 18 (1), 57–62.
Smith, P.K., Cowie, H., Olafsson, R.F., Liefooghe, A.P., Almeida, A., Araki, H., del Barrio, C., Costabile, A., Dekleva, B., Houndoumadi, A., Kim, L., Olafsson, R., Ortega, R., Pain, K., Pateraki, L., Schafter, M., Singer, M., Smort, A., Toda, Y., Tomasson, H., Wenxin, Z., 2002. Definitions of bullying: a comparison of terms used, and age and gender differences, in a fourteen-country international comparison. Child Dev. 73 (4), 1119–1133.
Stapinski, L.A., Araya, R., Heron, J., Montgomery, A.A., Stallard, P., 2015. Peer victimization during adolescence: concurrent and prospective impact on symptoms of depression and anxiety. Anxiety Stress Coping 28 (1), 105–120.
Sugden, K., Arseneault, L., Harrington, H., Moffitt, T.E., Williams, B., Caspi, A., 2010. Serotonin transporter gene moderates the development of emotional problems among children following bullying victimization. J. Am. Acad. Child Adolesc. Psychiatry 49 (8), 830–840.
Thornton, L.C., Frick, P.J., Crapanzano, A.M., Terranova, A.M., 2013. The incremental utility of callous-unemotional traits and conduct problems in predicting aggression and bullying in a community sample of boys and girls. Psychol. Assess. 25 (2), 366–378.
Tippett, N., Wolke, D., 2014. Socioeconomic status and bullying: a meta-analysis. Am. J. Public Health 104 (6), e48–e59.
van Geel, M., Vedder, P., Tanilon, J., 2014. Are overweight and obese youths more often bullied by their peers? A meta-analysis on the correlation between weight status and bullying. Int. J. Obes. (Lond.) 38 (10), 1263–1267.
Viding, E., Simmonds, E., Petrides, K.V., Frederickson, N., 2009. The contribution of callous-unemotional traits and conduct problems to bullying in early adolescence. J. Child Psychol. Psychiatry 50 (4), 471–481.
Wang, J., Iannotti, R.J., Nansel, T.R., 2009. School bullying among adolescents in the United States: physical, verbal, relational, and cyber. J. Adolesc. Health 45 (4), 368–375.
Whitney, I., Smith, P., 1993. A survey of the nature and extent of bullying in junior/middle and secondary schools. Educ. Res. 35, 1.
Wilson, P., Bradshaw, P., Tipping, S., Henderson, M., Der, G., Minnis, H., 2013. What predicts persistent early conduct problems? Evidence from the growing up in Scotland cohort. J. Epidemiol. Community Health 67 (1), 76–80.
Wolke, D., Lereya, S.T., 2015. (2015). Long-term effects of bullying. Arch. Dis. Child.
Zeinoun, P., Bawab, S., Atwi, M., Hariz, N., Tavitian, L., Khani, M., et al., 2013. Validation of an Arabic multi-informant psychiatric diagnostic interview for children and adolescents: development and Well Being Assessment-Arabic (DAWBA-Arabic). Compr. Psychiatry 54 (7), 1034–1041. http://dx.doi.org/10.1016/j.comppsych.2013.04.012.