

The Relationship Between Immigrant School Composition, Classmate Support and Involvement in Physical Fighting and Bullying among Adolescent Immigrants and Non-immigrants in 11 Countries

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Abstract Increasing numbers of migrant youth around the world mean growing numbers of heterogeneous school environments in many countries. Contradictory findings regarding the relationship between immigrant school composition (the percentage of immigrant versus non-immigrant students in a school) and adolescent peer violence necessitate further consideration. The current study examined the relationship between immigrant school composition and peer violence, considering classmate support as a potential moderator among 51,636 adolescents (50.1 % female) from 11 countries. The findings showed that a higher percentage of immigrant adolescents in a school was related to higher levels of physical fighting and bullying perpetration for both immigrant and non-immigrant adolescents and lower levels of victimization for immigrants. In environments of low classmate support, the positive relationship between immigrant school composition and

fighting was stronger for non-immigrants than in environments with high classmate support. In environments of low classmate support, the negative relationship between immigrant school composition and fighting and bullying victimization was stronger for immigrant adolescents than in environments with high classmate support. In general, the contribution of immigrant school composition was modest in comparison to the contribution of classmate support. The findings emphasize that it is not just the number of immigrants in a class per se, but rather the environment in the classroom which influences levels of peer violence. The results highlight a need for school intervention programs encouraging positive relations in schools with immigrant populations.

Keywords Immigration · Adolescent · Immigrant school composition · Bullying · Fighting · Classmate support

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Introduction

Public awareness of the serious physical and emotional health risks sustained by young people engaged in physical fighting (Walsh et al. 2013) and bullying (Holt et al. 2007; Sousa et al. 2010), together with increased knowledge about and proliferation of school-based violence intervention programs, have led to an encouraging trend in reduction of school-based peer violence among adolescents in many countries around the world (Pickett et al. 2013). However, despite these trends, peer violence is still a major public health concern. Figures from the Center for Disease Control report that, in the US, in 2011, more than 700,000 young people aged 10–24 years were treated in emergency departments for nonfatal injuries sustained from violent interactions (CDC 2013). Statistics from the Health Behavior in School-aged Children (HBSC) study in Europe and North America reported 14, 13 and 10 % respectively of 11-, 13- and 15-year-olds who had been involved in at least three physical fights in the past 12 months (Currie et al. 2012).

While the subject of the relationship between immigrant status and violence is a controversial and political issue (Martinez 2015), empirical evidence has been limited and contradictory (Sampson et al. 2005). Some studies have found immigrant adolescents boys to be more engaged in peer violence than non-immigrant, possibly as an expression of a wish for affiliation (Fandrem et al. 2009, 2010), while other studies have drawn the opposite conclusions (Almeida et al. 2011). Immigrant youth may be easy targets for bullying since they may look, dress and talk differently than native-born adolescents and they have a relatively low social standing (Strohmeier et al. 2011). In line with this, bullies are argued to often target individuals because they differ from the majority, making immigrant youth prime targets for bullying victimization (Mendez et al. 2012; Qin et al. 2008). Contradictory findings of the relationship between immigrant status and peer violence necessitate further empirical exploration. In the current study, we study the way in which the number of immigrants in a school (and not immigrant status per se) may impact levels of peer violence.

Today, many children and adolescents living in Europe and the US have an immigrant background, either because they have migrated themselves, or because they are born to immigrant families (Eurostat 2011; Kuo 2014). According to the United Nations (UN 2013) an estimated 214 million individuals worldwide are considered to be international migrants of whom 20 million are between ages 10 and 19. In the US alone, 17.4 million children under the age of 18 lived at home with at least one immigrant parent in 2013 (25 % of the total of those under 18 years). Between 2000

and 2013, this number grew 33 % (www.migrationpolicy.org). The ever increasing number of immigrant adolescents means that school systems need to cope with growing numbers of immigrant children and more specifically with classes which are comprised of adolescents from diverse backgrounds. The complex context of today's classrooms raises questions as to the impact of increasing levels of immigrant adolescents in schools on levels of peer violence. In this study, we investigate the impact of immigrant school composition on the involvement of immigrant and non-immigrant adolescents in 11 countries in three types of peer violence: bullying perpetration, bullying victimization and physical fighting and the role of perceived classmate support in moderating this relationship.

Immigrant School Composition and Peer Violence

Immigrant school composition is considered as the percentage of immigrant versus non-immigrant adolescents in a school (Agirdag et al. 2011) and has been suggested as one of the critical factors in understanding levels of peer violence among immigrant and non-immigrant adolescents (Vervoort et al. 2010). The relationship between immigrant school composition and peer violence may be explained through Integrative Threat Theory (Stephan and Stephan 1996, 2000; Stephan et al. 1999) and Social Identity Theory (Tajfel 1982; Tajfel and Turner 1979). From these theoretical perspectives, the influx of immigrants in communities and schools is seen to pose fundamental psychological threats, both realistic and symbolic (Stephan et al. 2005) to majority groups and may lead to discrimination and prejudice toward the immigrants (Brenick et al. 2012; Nesdale 2004), and inter-group violence (Jackson 1993). In turn, greater numbers of immigrant youth in a school may increase the feelings of strength and power of immigrant youth which may enable them to fight back or challenge feelings of discrimination and inferiority, challenge the position of the ethnic majority group and attain greater social dominance (Vervoort et al. 2010). The combination of these two processes fuels competition and conflicts for social status between immigrant and non-immigrant groups (Esses et al. 2001, 2008), which may create a context of peer violence.

Empirically, studies in the area of immigrant school composition have been very limited, involving generally a single country, using small and often non-representative samples and different indicators of peer violence, and have led to contradictory findings. Research in the Netherlands suggests that, in classes with higher numbers of immigrant youth (25–50 %), immigrant adolescents bullied more than in classes with lower numbers of immigrants (0–25 % ethnic school composition); yet, for non-immigrant

adolescents, immigrant school composition was not associated with bullying (Vervoort et al. 2010). In contrast, in other research in the Netherlands, immigrant students showed fewer externalizing problems (including violence) in classes with higher (as opposed to lower) numbers of immigrants, while again no effect of the immigrant class composition was found for non-immigrant adolescents (Gieling et al. 2010). Research in Belgium found that immigrant adolescents report less victimization in schools with a higher (rather than lower) percentage of immigrants (Agirdag et al. 2011), while immigrant school composition did not have an impact on the levels of non-immigrant victimization. Higher immigrant school composition may lead immigrant adolescents to be less vulnerable to victimization (Agirdag et al. 2011) due to a shifting and diversification of the student majority and an increase in immigrant students' ability to protect one another or prevent bullying of compatriots from a similar background. Notwithstanding inconsistencies in the literature, findings from the majority of former studies and our theoretical conceptualization suggest that, on the whole, higher immigrant school composition is associated with higher levels of immigrant bullying and lower levels of bullying victimization for immigrant adolescents. In contrast with theoretical notions suggesting that greater immigrant school composition would also lead to increased peer violence for non-immigrants, due to higher levels of competition and conflict, this association has generally not been found empirically. However, the great lack of research in this area necessitates further investigation.

Research to date has focused on the relationship between immigrant school composition and different types of peer violence, without explicitly comparing these types (e.g., bullying perpetration, bullying victimization and physical fighting). This may be a major omission because of the different characteristics of bullying perpetration, bullying victimization and physical fighting. Bullying has been defined as the assertion of interpersonal power through aggression. It involves negative physical or verbal actions that have hostile intent, cause distress to victims, are repeated and involve a power differentiation between perpetrators and victims (Olweus 1991). Physical fighting is the most common manifestation of interpersonal violence and aggression in adolescence (Molcho et al. 2004). As fighting is an aggressive behavior and those involved are typically of similar age and equal strength (Craig and Harel 2002), it does not involve such clear interpersonal power relationships (Olweus 1993). As such, while both are worrying manifestations of peer violence, physical fighting and bullying can differ from one another in their mode of expression (verbal/physical), their (re)occurrence, their intent, and the nature of the power relationship between the two sides. One of the contributions of the

current study is to examine whether the relationship between immigrant school composition and violence is similar in cases of peer violence (bullying and fighting), that differ in terms of their interpersonal characteristics.

Classmate Support as a Moderator of the Relationship Between Immigrant School Composition and Peer Violence

The current study attempts to expand current understandings of the relationship between immigrant school composition and peer violence by examining this relationship in 11 countries and including perceived classmate support as a moderating variable. Classmate support involves the perceived acceptance and assistance offered to adolescents by classmates (Currie et al. 2014) and has been found to be associated with a wide range of adolescent well-being and risk factors such as somatic complaints (Torsheim and Wold 2001), drunkenness and smoking (Hargreaves 2012), and victimization (Pellegrini and Bartini 2000). The question the study asks is whether the potential importance of the number of immigrants in a class for peer violence varies with the school social environment. We hypothesize that schools with a more supportive and positive general climate may be able to integrate immigrants into the school with lower experienced threat to majority youth. Therefore, classmate support may buffer feelings of competition and threat experienced by immigrants and non-immigrant adolescents in culturally heterogeneous classes (Esses et al. 2008). In contrast, environments with low classmate support, which may involve higher levels of tension, friction and competition, may lead to a particularly strong relationship between immigrant school composition and peer violence. In addition, higher immigrant school composition in these environments may give immigrant youth the feeling of strength and confidence to challenge the majority group social dominance through bullying. Empirical studies have examined a moderating or mediating role of school based factors on the relationship between both immigrant status and immigrant school composition with peer violence. For example, multicultural education as perceived by children and teachers has been found to moderate the relationship between immigrant status and bullying (Verkuyten and Thijs 2002) while interethnic school climate, measured by the amount of interethnic friendships and interethnic conflict at school (Agirdag et al. 2011), and the number of classmates (Vervoort et al. 2010), have been found to moderate the relationship between immigrant school composition and bullying. Yet, to date, this is the first study to examine the potential moderating role of classmate support, critical due to its potential ability to reduce levels of friction and conflict in a heterogeneous environment.

Hypotheses

Although there are several theoretical reasons to assume an association between immigrant school composition and peer violence, research to date on the relationship between immigrant school composition and bullying and fighting is scarce, results are ambiguous and research has been almost exclusively based in single countries. Further, studies have tended to focus on bullying and less so on physical fighting. This leaves a number of questions unanswered: Does immigrant school composition impact levels of (immigrant and non-immigrant) physical fighting, bullying perpetration and bullying victimization? Can perceived classmate support be seen to moderate the relationship between immigrant school composition and physical fighting and bullying (perpetration and victimization) for immigrant and non-immigrant adolescents? Is the relationship between immigrant school composition and bullying and fighting comparable in varying country contexts?

In line with the previously outlined theory, we hypothesize that, due to the increase in threat, competition and battles over social status and dominance that can accompany interpersonal relations in a more heterogeneous classroom (Esses et al. 2008; Stephan et al. 2005), immigrant school composition will be positively related to levels of physical fighting and bullying perpetration for immigrant and non-immigrant adolescents. However, we hypothesize that immigrant school composition will be negatively related to bullying victimization for immigrant adolescents due to the greater social power of immigrants and their ability to defend fellow compatriots (Agirdag et al. 2011). In addition, we hypothesize that perceived classmate support will moderate the relationship between immigrant school composition and physical fighting and bullying, such that for individuals perceiving greater classmate support there will be a weaker relationship between immigrant school composition and physical fighting, bullying perpetration and victimization. In line with previous empirical findings, we suggest that positive classmate support should buffer the tension and competition that can exist in heterogeneous classrooms.

Method

Study Population and Procedures

International data were examined from the 2009–2010 World Health Organization Health Behaviour in School-aged Children survey (WHO-HBSC) (Currie et al. 2012) for a total of 51,636 adolescents from 11 countries: Denmark (4173), Germany (4836), Greece (4779), Iceland

(10,893), Ireland (4575), Israel (3197), Italy (4601), Netherlands (4442), Spain (4999), United Kingdom (4871), and USA (5049). The HBSC is a school-based survey focusing on adolescent health behaviors and their underlying determinants. It is carried out every 4 years simultaneously in participating countries, using an international standardized methodological protocol (Griebler et al. 2010). Surveys are given out in the national language and a centrally coordinated and supervised translation-back-translation procedure is used to ensure consistency of the items across languages (Roberts et al. 2009). The study includes school children aged 11, 13 and 15 in over 40 countries in Europe and North America. According to the study protocol, data from each country are gathered from nationally representative samples.¹ HBSC follows a multi-stage, cluster randomized sampling strategy. The sampling method is based on schools as the sampling unit. Schools were randomly selected from a nationally representative list of all schools and within a sampled school a randomly chosen class from each of the 5th, 7th and 9th grades was chosen, with the exception of Denmark and Iceland where all 5th, 7th and 9th grade classes were included in the study. Numbers of sampled schools ranged from 73 (Denmark) to 390 (Ireland). All students belonging to a sampled classroom were included. Overall response rates (taking into account both the schools and students that agreed to participate) ranged from 46 % (Denmark) to 89 % (Iceland) (Currie et al. 2012). The HBSC uses a standard, self-administered in-class questionnaire that includes both mandatory and optional items. All items in the current study were mandatory questions aside from the question of country of birth which was an optional question in the 2009/2010 HBSC survey. In the current study, all countries, which had included questions on where the young person and his/her mother and father were born, were included in the analysis. Further details surrounding methodology of the HBSC study can be found elsewhere (Currie et al. 2008b). The participating countries all gained ethical approval from the appropriate (academic and/or ministerial) national bodies. The percentage of missing data on individual items used in the present study was low (less than 5 %) with the exception of immigrant status having 13.3 % missing data. Cases with missing data on immigrant status did not differ significantly in terms of gender or FAS. However, these were slightly younger (mean missing/non-missing = 13.2/13.7 years).

¹ This is true for all countries with the exception of Iceland where the whole population was included and the US where regional samples are combined.

Measures

Immigrant Status

Adolescents were asked in three separate questions whether they and each of their mother and father were born in the receiving country or abroad: “In which country were you/your mother/your father born?” (1-country of residence; 2-other; for mother/father country of birth, adolescents were also given an open question to write in which country). Former research indicates that children as young as 11 years provide valid responses to these questions, by showing that the amount of agreement between the answers of the children and their parents is almost 100 % (Nordahl et al. 2011). To date, most research on immigrant adolescents has defined immigrant as including both first generation (adolescents born outside of the country of residence) and second generation (those born in the country of residence to one or both parents born abroad). In line with previous research, the current study includes both first and second generation immigrant adolescents. Adolescents were considered a first generation immigrant, if they were born abroad and a second generation immigrant if at least one of their parents was born abroad, and they themselves were born in the receiving country. The remaining students were categorized as non-immigrant.

Immigrant School Composition

In addition to individual immigrant status, a variable of immigrant school composition (percentage of first and second generation immigrants in each school) was calculated from the immigrant status variable. Country mean levels of immigrant school composition ranged from 10.13 % (Italy) to 29.21 % (Israel) (see Table 1). Since information was taken only from students in a random selection of the school classes, the measure is a proxy measure of immigrant school composition.

Physical Fighting and Bullying

One question was asked about physical fighting and two addressed bullying. Participants were asked, “During the past 12 months how many times were you involved in a physical fight”? [‘never’ (1), ‘once’ (2), ‘2 times’ (3), ‘3 times’ (4), ‘4 times or more’ (5)]. Frequency of fighting is a validated construct with extensive use in American and other youth risk behaviour surveys (Waxweiler et al. 1993). Reports of 3 or more fights during the past 12 months has been classified as frequent physical fighting (Currie et al. 2008a, b) and a dichotomous variable was constructed in

line with this. To measure bullying, adolescents were asked two separate questions as to “How often have you taken part in bullying another student(s) at school in the past couple of months?” and “How often have you been bullied at school in the past couple of months?”, with five answering categories for each question: ‘I have not bullied another pupil (/been bullied) in the past couple of months’ (1), ‘it has happened once or twice’ (2), ‘2 or 3 times a month’ (3), ‘about once a week’ (4), ‘several times a week’ (5). These questions were preceded by a definition of bullying (Olweus 1996) which has been well-used and validated in empirical studies in multiple countries (Due et al. 2005; Elgar et al. 2009): “Here are some questions about bullying. We say a student is *being bullied* when another student, or a group of students, say or do nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she does not like or when he or she is deliberately left out of things. But it is *not bullying* when two students of about the same strength or power argue or fight. It is also not bullying when a student is teased in a friendly and playful way”. Reports of two/three or more experiences of bullying (perpetrator or victim) a month have been considered chronic bullying (Dube et al. 2009; Harel-Fisch et al. 2011). Accordingly the variables were dichotomized.

Perceived Classmate Support

Two variables of classmate support was composed from three questions: “The students in my class(es) enjoy being together”, “Most of the students in my class(es) are kind and helpful” and “Other students accept me as I am”. All questions had five answering categories: ‘Strongly agree’ (1), ‘Agree’ (2), ‘Neither agree nor disagree’ (3), ‘Disagree’ (4), ‘Strongly disagree’ (5). Scale scores were calculated by summing up the scores of all three items. Two studies examining the factor structure of the classmate support scale have shown good test retest reliability, external and convergent validity (De Clercq et al. 2014; Torsheim et al. 2000). Cronbach alpha for the classmate support variable in the current study was .73. In the study, both individual and school level (mean of classmate support for the students in a particular school) perceptions of classmate support were calculated. The school level is used as an approximate of general levels of experienced peer support in the school environment. Again, since information was taken only from a random selection of the school classes the measure is a proxy measure of the school environment. Mean country levels of individual perceived classmate support ranged from 1.9 (Spain) to 2.4 (Greece) [scale from 1 to 5 where 1 is maximum classmate support] (see Table 1).

Table 1 Immigrant school composition (ISC), classmate support and levels of physical fighting and bullying

	ISC (%) M (SD)	Level 2 school support M (SD)	N	Percent						
				Bully victim 3+		Bullying 3+		Physical fighting 3+		
				Girls	Boys	Girls	Boys	Girls	Boys	
Denmark	18.06 (16.69)	1.90 (.73)	Total	4173	6.1	6.6	2.3	7.2	4.0	17.3
			Non-immigrant	3391	6.0	5.6	1.9	4.9	3.3	14.9
			First generation	189	4.2	9.8	0.0	15.1	6.3	25.8
			Second generation	593	6.9	9.7	4.5	15.6	6.6	26.4
Germany	23.62 (18.18)	1.89 (.68)	Total	4836	9.8	10.6	7.2	13.2	2.5	8.3
			Non-immigrant	3654	9.7	10.5	7.0	12.4	2.4	5.9
			First generation	191	10.2	15.0	13.5	17.0	7.9	13.0
			Second generation	991	8.8	8.6	6.7	15.7	2.1	16.2
Greece	14.68 (14.20)	2.38 (.79)	Total	4779	7.7	9.4	8.8	23.3	8.3	23.9
			Non-immigrant	4053	6.9	9.5	8.6	23.8	7.7	23.2
			First generation	362	8.6	9.0	9.1	24.1	10.3	21.9
			Second generation	364	12.6	7.7	8.3	21.3	11.7	33.8
Iceland	15.57 (8.17)	1.97 (.74)	Total	10,893	5.4	7.2	1.4	5.3	3.8	16.1
			Non-immigrant	9161	4.8	6.6	1.2	4.8	3.7	15.2
			First generation	936	9.6	10.4	3.5	7.9	4.6	21.0
			Second generation	796	5.7	9.7	1.0	6.9	4.4	19.1
Ireland	27.71 (6.92)	2.03 (.74)	Total	4575	6.9	10.9	2.1	6.3	5.3	16.2
			Non-immigrant	3199	6.3	9.8	2.0	5.5	5.0	15.3
			First generation	725	6.6	13.2	3.3	8.5	6.8	17.4
			Second generation	651	8.1	13.5	1.0	6.7	4.7	18.0
Israel	29.21 (24.64)	2.04 (.91)	Total	3197	4.7	10.2	3.8	10.0	2.4	12.4
			Non-immigrant	2250	3.9	8.8	3.1	9.0	1.6	12.0
			First generation	174	11.5	11.5	9.8	9.7	6.7	13.2
			Second generation	653	4.8	14.1	3.8	13.3	3.5	13.2
Italy	14.16 (10.68)	1.97 (.74)	Total	4601	2.9	4.8	2.8	7.3	5.1	18.2
			Non-immigrant	3916	2.6	4.3	2.4	6.6	4.6	17.1
			First generation	281	4.7b	11.6	4.9	10.9	4.6	28.0
			Second generation	404	5.4	2.6	5.1	5.9	12.5	17.4
The Netherlands	19.06 (20.97)	1.92 (.65)	Total	4442	6.8	8.4	3.9	9.1	3.4	12.9
			Non-immigrant	3567	6.6	8.3	2.8	8.2	2.6	11.8
			First generation	179	4.3	9.8	6.5	14.6	3.2	23.5
			Second generation	696	7.9	9.3	8.5	11.8	7.1	14.6
Spain	16.13 (8.45)	1.85 (.73)	Total	4999	4.3	7.5	4.5	8.9	8.3	17.6
			Non-immigrant	4186	4.0	7.8	4.4	8.8	8.4	17.1
			First generation	508	5.3	4.5	5.8	8.5	7.4	22.1
			Second generation	305	5.5	9.8	4.9	10.8	8.1	17.8
UK	10.13 (11.22)	2.14 (.68)	Total	4871	8.2	9.5	1.4	3.8	6.0	14.3
			Non-immigrant	4318	8.1	8.8	1.3	3.2	5.8	13.9
			First generation	212	9.0	12.7	2.0	10.8	5.0	15.7
			Second generation	341	5.5	12.8	0.5	6.8	5.5	15.6
USA	24.75 (22.29)	2.30 (.85)	Total	5049	10.7	11.3	5.9	9.0	6.9	14.4
			Non-immigrant	3496	9.9	9.6	5.7	7.9	6.0	13.1
			First generation	470	9.1	18.1	3.8	15.6	7.9	17.5
			Second generation	1083	7.7	9.7	4.9	8.4	6.8	14.0

Socio-demographic Variables

The Family Affluence Scale (FAS) is an indicator of young people's socio-economic status, comprised of four items on material assets in the family: 'Does your family own a car, van or truck?' ['No' (0), 'Yes, one' (1) and 'Yes, two or more' (2)], 'Do you have your own bedroom for yourself?' ['No' (0) and 'Yes' (1)], 'During the past 12 months, how many times did you travel away on holiday with your family?' ['Not at all' (0), 'Once' (1), 'Twice' (2), and 'More than twice' (3)], and 'How many computers does your family own?' ['None' (0), 'One' (1), 'Two' (2) and 'More than two' (3)]. Scale scores were calculated by summing up the scores of all four items. The continuous variable created as a sum of the four questions was divided into three groups of low, medium and high FAS (see Currie et al. 2008a for a full review of the HBSC family affluence scale). There was considerable variability between countries as to distribution of FAS (low FAS ranged from 19.5 % in Iceland to 59.5 % in Greece, medium FAS ranged from 27.1 in Ireland to 53.5 in Denmark and high FAS ranged from 5.7/5.8 % in Ireland/Greece to 30 % in Iceland).

Analytic Strategy

Three-level, random intercept, multilevel models were calibrated using MLwiN (Rasbash et al. 2009) taking into account the hierarchical data structure with students (level 1) nested in schools (level 2), and schools in countries (level 3). The binomial logit function was used. Variables were introduced on the individual level (age, gender, FAS, immigrant status, individual perceived classmate support) and on the school level (percentage of immigrants in the school and mean-aggregated classmate support). In the null model, variance between schools and countries was examined. In Model 1, gender, age immigrant status (non-immigrant, first and second generation) and FAS were included. Since no significant differences between first and second generation immigrants were found for any of the three outcome variables, a single immigration category was used in the following models. In model 2, immigrant school composition was added. In model 3, school level perceived classmate support was added. In model 4, two cross level interactions were added: (1) a two-way interaction of immigrant school composition x individual immigrant status (non-immigrant/immigrant) and (2) a three-way interaction of immigrant school composition x immigrant status x individual classmate support. The final model 4 additionally included individual level classmate support in order to distinguish between purely contextual classmate support associations with the outcomes and compositional associations (Diez-Roux 1998). Cross-

country variability in the association between immigrant school composition and peer violence outcomes was tested through random slope models. Random slope components were computed for the immigrant school composition parameters in the final models (model 4) for each violence outcome. None were significant indicating that the relation between immigrant school composition and all violence outcomes did not vary by country.

Results

The percentages of physical fighting for girls ranged from 1.6 % (non-immigrant, Israel) to 12.5 % (second generation, Italy) and for boys from 5.9 % (non-immigrant, Germany) to 33.8 % (second generation, Greece). The percentages of bullying perpetration for girls ranged from 0.0 % (first generation, Denmark) to 13.5 % (first generation, Greece) and for boys from 3.2 % (non-immigrant, UK) to 24.1 % (first generation Greece). The percentages of bullying victimization for girls ranged from 2.6 % (non-immigrant, Italy) to 12.6 % (second generation, Greece) and for boys from 4.3 % (non-immigrant, Italy) to 18.1 % (first generation, USA) (see Table 1).

In the multilevel analysis (see Table 2) for physical fighting significant variance was found between schools and countries. Girls and younger adolescents showed lower levels of physical fighting compared to boys and older adolescents. Compared to non-immigrant adolescents, immigrants reported higher levels of physical fighting. In comparison with high FAS, a lower level of FAS was associated with higher levels of physical fighting. Higher percentage of immigrants in schools and lower levels of individual and school level perceived school support were related to an increased risk of physical fighting. The impact of immigrant school composition was modest in comparison to the effect of classmate support, especially level two (school) classmate support. However, the OR of school composition represents an increase in risk per one unit, i.e. 1 %. Results show that an increase of 5 % in the proportion of immigrant children corresponds with OR of 1.22; and an increase of 10 % corresponds with an OR of 1.48, suggesting that school composition is still an important predictor of fighting, with increases in fighting with larger proportion of immigrants in school. The three way interaction was significant such that for non-immigrants experiencing low levels of classmate support, there was a stronger relationship between immigrant school composition and physical fighting than for non-immigrants reporting high levels of classmate support. For immigrants, interestingly, a similar relationship was only found for those immigrant adolescents experiencing high classmate support, while in case of low classmate support, levels of

Table 2 Results of Multilevel Linear Regression predicting physical fighting

	Model 1		Model 2		Model 3		Model 4	
	OR	95 % CI	OR	95 % CI	OR	95 % CI	OR	95 % CI
Constant	0.16	0.13–0.20	0.15	0.12–0.18	0.16	0.13–0.19	0.14	0.12–0.17
<i>Level 1 (individual level)</i>								
Girl (ref = boy)	0.29	0.27–0.30	0.28	0.26–0.30	0.28	0.27–0.30	0.27	0.25–0.29
Age	0.93	0.91–0.95	0.93	0.76–1.13	0.91	0.90–0.93	0.91	0.90–0.93
Immigrant status (ref = non-immigrant)								
Immigrant	1.38	1.27–1.49	1.31	1.21–1.42	1.30	1.20–1.40	1.30	1.20–1.40
Family affluence scale								
Medium	1.11	1.02–1.20	1.11	1.03–1.19	1.11	1.02–1.20	1.12	1.03–1.21
Low	1.48	1.34–1.63	1.49	1.36–1.63	1.48	1.34–1.63	1.51	1.37–1.66
Classmate support							1.39	1.34–1.45
<i>Level 2 (School level)</i>								
% immigrants in school			1.01	1.00–1.01	1.01	1.01–1.01	1.04	1.00–1.08
Classmate support					2.10	1.76–2.50	2.10	1.76–2.50
<i>2-way cross-level interaction</i>								
Immigrant status × %immigrant in school							1.00	1.00–1.00
<i>3-way cross-level interaction</i>								
Level 1 classmate support × % immigrants in school × immigrant status							0.99	0.99–1.00
Level 2 variance (school)	.159	.019	.170	.021	.121	.017	.146	.019
Level 3 variance (country)	.100	.047	.125	.058	.081	.038	.099	.046

$N_1 = 47,888$; $N_2 = 1823$ (range 48–306), $N_3 = 11$

Bold numerals: $p < .05$ (two-tailed)

immigrant physical fighting were high regardless of immigrant school composition (see Fig. 1).

For bullying perpetration, significant variance was found between schools and countries (Table 3). Girls and younger adolescents were less likely to report bullying compared to boys and older adolescents. Compared to non-immigrant adolescents, immigrant adolescents were more likely to report bullying. In comparison with high FAS, both low and medium level FAS scores were associated with higher risk of bullying. Higher percentage of immigrants in schools and lower levels of school support (both level one and level two) were related to increased risk of bullying. The effect of immigrant school composition decreased once individual classmate support, and the cross-level interactions were added to the model. The two-way cross level interaction showed that for immigrants there was a significantly stronger relationship between immigrant school composition and bullying perpetration than for non-immigrants (see Fig. 2).

For bullying victimization, significant variance was found between schools and countries (Table 4). Girls and younger adolescents were at lower risk of being bullied

compared to boys and older adolescents. Compared to non-immigrant adolescents, immigrant adolescents were at higher risk for bullying victimization. No significant association was found between FAS and being bullied. Higher percentage of immigrants in schools was not related to being bullied but higher levels of school support (in particular on the individual level) were related to a lower risk of being bullied. Once immigrant school composition was included in the analysis, differences between immigrants and native adolescents were no longer significant. There was a significant three-way interaction between immigrant school composition × immigrant status × classmate support. For non-immigrants, the positive relation between immigrant school composition and bullying victimization was only present in the case of low classmate support (see Fig. 3). The reverse was true for immigrants such that in the case of low classmate support, higher immigrant school composition was associated with lower bullying victimization. However, for both immigrants and non-immigrants high classmate support was consistently related to lower risk of bullying victimization and physical fighting regardless of immigrant school composition (see Figs. 1 and 3).

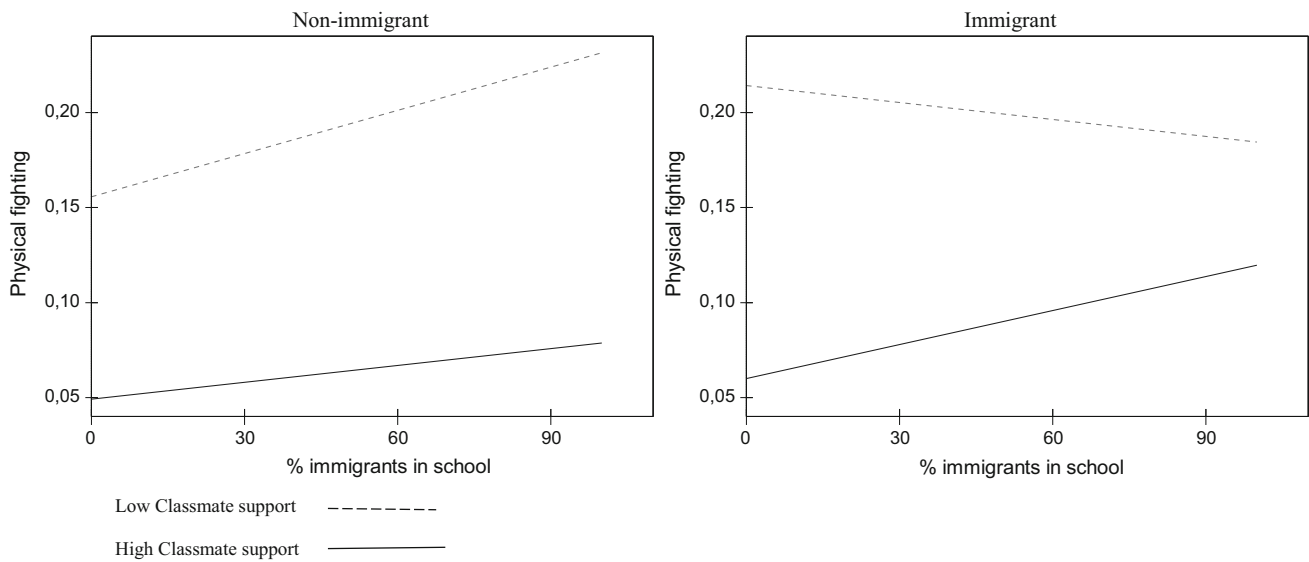


Fig. 1 Physical fighting: 3-way interaction = % immigrants in school × school support × immigrant status

Table 3 Results of multilevel linear regression predicting bullying perpetration

	Model 1		Model 2		Model 3		Model 4	
	OR	95 % CI	OR	95 % CI	OR	95 % CI	OR	95 % CI
Constant	0.04	0.03–0.06	0.03	0.02–0.04	0.04	0.03–0.05	0.03	0.02–0.04
<i>Level 1 (Individual level)</i>								
Gender (ref = female)	0.91	0.80–1.02	0.35	0.31–0.40	0.37	0.33–0.41	0.34	0.31–0.39
Age	1.20	1.15–1.25	1.20	1.15–1.24	1.17	1.13–1.22	1.16	1.12–1.21
Immigrant status (ref = non-immigrant)								
Immigrant	1.51	1.34–1.70	1.92	1.66–2.21	1.42	1.26–1.60	1.51	1.31–1.73
Family affluence scale								
Medium	1.19	1.01–1.39	1.18	1.05–1.34	1.19	1.01–1.39	1.19	1.01–1.39
Low	1.57	1.37–1.80	1.58	1.33–1.86	1.57	1.34–1.84	1.58	1.33–1.89
Classmate support							1.48	1.24–1.76
<i>Level 2 (School level)</i>								
% immigrants in school			1.01	1.00–1.01	1.04	1.04–1.04	1.01	1.00–1.02
Classmate support					2.44	2.43–2.44	1.77	1.32–2.37
<i>2-way cross-level interaction</i>								
Immigrant status × %immigrant in school							0.99	0.98–0.99
<i>3-way cross-level interaction</i>								
Level 1 classmate support × % immigrants in school × immigrant status							1.00	1.00–1.00
Level 2 variance/SE (school)	.300	.045	.289	.052	.237	.042	.264	.051
Level 3 variance/SE (country)	.465	.213	.364	.169	.333	.153	.311	.146

$N_1 = 47,475$; $N_2 = 1823$, $N_3 = 11$

Bold numerals: $p < .05$ (two-tailed)

Discussion

Increasing levels of migration across the world mean that schools are faced with substantial numbers of immigrant youth needing integration into school systems. The current

study examined the relationship between immigrant school composition and peer violence (physical fighting, bullying perpetration and victimization) among a representative sample of immigrant (first- and second generation) and non-immigrant adolescents in 11 countries across Europe,

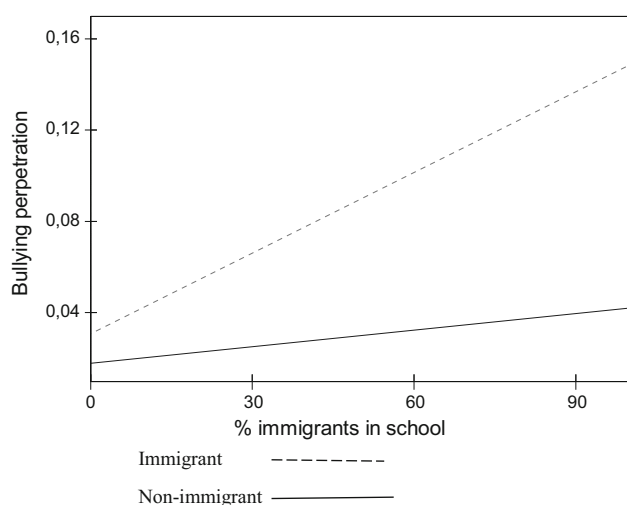


Fig. 2 Bullying perpetration: 2-way interaction = % immigrants in school \times immigrant status

the Middle East and the US. The potential moderating role of perceived classmate support in this relationship was also explored. As hypothesized, we found a positive relationship between immigrant school composition and levels of fighting and bullying perpetration. However, the effect was not very strong. Even when accounting for an increase of

10 % in the percentage of immigrant children in the school, levels of classmate support (on both the individual and school level) were more strongly associated with peer violence than were levels of immigrant school composition. Effects of immigrant school composition were found to be different for immigrants and non-immigrants as well as varied with the level of classmate support at the school level. Because our findings point to the great importance of classmate support on both the individual and school level, which seems to diminish the effect of the school composition especially with regards to bullying, the results open up positive opportunities for intervention in schools with high levels of immigrant populations.

Before examining immigrant composition and classmate support, the foci of the current article, it is important to note that, in line with previous findings (Stevens et al. 2015), immigrant boys and girls reported higher levels of physical fighting, bullying perpetration and victimization (Fandrem et al. 2009, 2010; Strohmeier et al. 2011) than non-immigrant adolescents. Differences between first and second generation immigrants were not significant overall for any of the three measures of peer violence. Previous findings have suggested that immigrant youth may be more vulnerable to be victims of bullying (McKenney et al. 2006; Sulkowski et al. 2014) due to their lower social status

Table 4 Results of multilevel linear regression predicting bullying victimization

OR	Model 1		Model 2		Model 3		Model 4	
	95 % CI	OR	95 % CI	OR	95 % CI	OR	95 % CI	OR
Constant	0.05	0.04–0.06	1.27	1.16–1.39	0.05	0.04–0.06	0.03	0.03–0.04
<i>Level 1 (individual level)</i>								
Gender (ref = female)	0.79	0.72–0.88	0.80	0.72–0.87	0.79	0.72–0.88	0.75	0.68–0.83
Age	0.89	0.87–0.90	0.90	0.87–0.92	0.87	0.85–0.89	0.84	0.81–0.88
Immigrant status (ref = non-immigrant)								
Immigrant	1.15	1.02–1.29	1.10	0.96–1.25	1.11	0.98–1.24	1.06	0.93–1.22
Family affluence scale								
Medium	1.03	0.93–1.14	1.03	0.93–1.14	1.03	0.93–1.14	1.03	0.93–1.14
Low	1.09	0.99–1.21	1.10	0.95–1.26	1.11	0.96–1.27	1.11	0.96–1.27
Classmate support							3.10	2.70–3.55
<i>Level 2 (School level)</i>								
% immigrants in school			1.00	1.00–1.01	1.00		1.00	
Classmate support					3.13	2.52–3.88	0.93	0.74–1.18
<i>2-way cross-level interaction</i>								
Immigrant status \times %immigrant in school							1.00	
<i>3-way cross-level interaction</i>								
Level 1 classmate support \times % immigrant in school \times immigrant status							0.99	0.99–0.99
Level 2 variance/SE (school)	.040	.023	.088	.029	.000	.000	.040	.026
Level 3 variance/SE (country)	.104	.049	.130	.062	.088	.042	.122	.058

$N_1 = 47,456$; $N_2 = 1823$, $N_3 = 11$

Bold numerals: $p < .05$ (two-tailed)

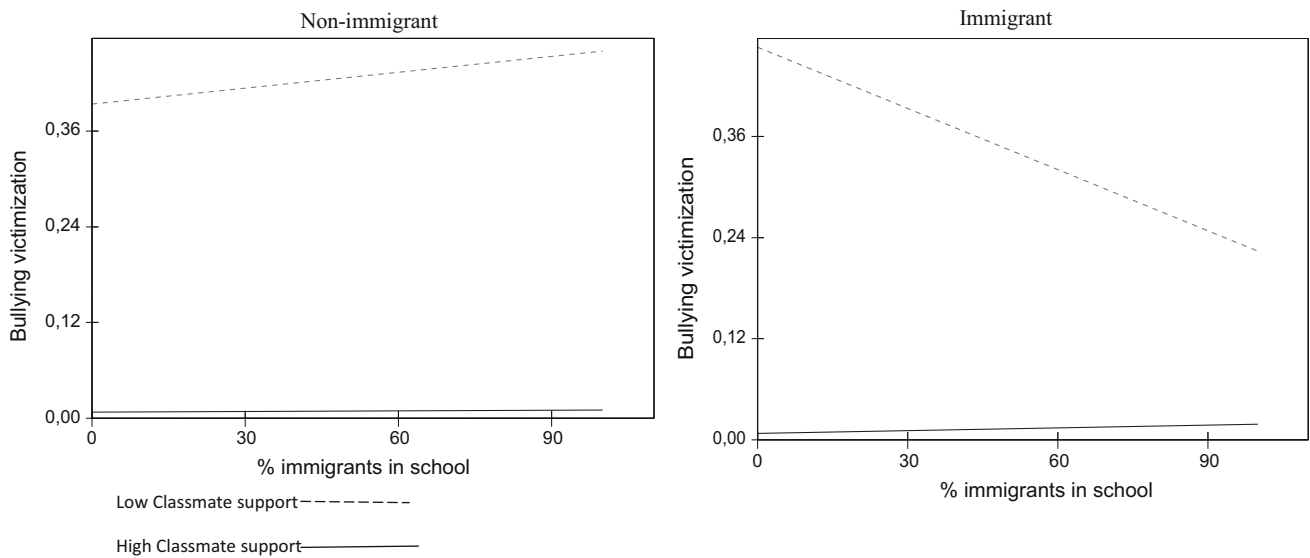


Fig. 3 Bullying victimization: 3-way interaction = % immigrants in school × school support × immigrant status

and differences in how they look, dress or speak (Mendez et al. 2012; Qin et al. 2008). They may bully more to try to attain status and friendship affiliation (Fandrem et al. 2010) and their expressions of aggression may be a result of frustration, anger, perceived discrimination and resentment (Agnew 2001). The study results suggest that these cultural gaps and frustrations exist not only for those born outside of the country of residence but also for second generation immigrant adolescents. Similarly, while differences between immigrant and non-immigrant youth in physical fighting and bullying perpetration remained even after immigrant school composition and school support were introduced into the analysis, differences in victimization were no longer significant (Agirdag et al. 2011). These findings suggest that being a victim of bullying for immigrant adolescents depends, in part, on how many immigrant adolescents there are in the class and their experience of classmate support.

Immigrant School Composition and Peer Violence

In line with the study hypothesis and prior research (Vervoort et al. 2010), we found that immigrant school composition was positively related to levels of physical fighting and bullying perpetration for immigrant and non-immigrant adolescents. The findings may be explained through Integrative Threat Theory (Stephan and Stephan 1996, 2000; Stephan et al. 1999) and Social Identity Theory (Tajfel 1982; Tajfel and Turner 1979), which posit that a higher number of immigrants in schools may lead to greater tension between pupils enabling greater in-group/out-group competition for resources, social status or identity (Esses et al. 2008; Jackson 2002). Higher percentages

of immigrants in school are related to more within ethnic group friendships or “ethnic homophily” (Titzmann and Silbereisen 2009), which might be associated with fighting and tension occurring on an intergroup basis.

Despite the significant yet modest relationship between immigrant school composition and fighting and bullying perpetration, our results highlight that the effects of immigrant school composition largely depend on whether or not the adolescent is an immigrant and the level of perceived classmate support (both at the school and individual level). A two-way interaction showed that immigrant school composition was more strongly related to bullying perpetration among immigrants than non-immigrants. It may be that, in schools with high immigrant school composition, immigrant adolescents feel more confident and more able to challenge the majority group’s social dominance and to try to reassert social power by perpetrating bullying themselves. Since bullying (in comparison with fighting) is partially defined by a power relationship (Olweus 1993), it makes sense that an increase in immigrant school composition can give immigrants the sense of and social standing needed to perpetrate bullying.

Classmate Support as a Moderator of the Relationship between Immigrant School Composition and Peer Violence

Perhaps the strongest and most important finding of the study was the crucial moderating role that perceived classmate support provided to the relationship between immigrant school composition and fighting and bullying. In a reality of heterogeneous school environments, the understanding that the effect of immigrant school

composition is modest in comparison to the effect of classmate support and is conditional on the level of classmate support provides positive potential for intervention and prevention of peer violence. Higher classmate support (on both an individual and a school level) was related to lower physical fighting, bullying perpetration and victimization. Classmate support may prevent individuals from being bullied (Furlong et al. 1995) and may reduce the general levels of competition, aggression and friction within the classroom environment. Since the study does not differentiate between classmate support from same or different ethnic classmates, it may be that greater in-group support from same cultural classmates or a more positive and supportive atmosphere overall in a school can contribute to lower levels of peer violence for both immigrant and non-immigrant youth.

A three way interaction between immigrant school composition, immigrant status and individual classmate support for physical fighting showed that, especially in environments of low classmate support, there was a positive relationship between immigrant school composition and fighting, in line with our hypothesis. However, this result was only revealed for non-immigrant adolescents, while a reverse effect was found for immigrants. As highlighted in the introduction, physical fighting typically is an expression of interpersonal aggression and involves those of equal strength (Craig and Harel 2002) and power (Olweus 1993). It may be that only in environments of low classmate support (and thus lower class cohesion) non-immigrant adolescents feel greater tension, competition and threat to their social position, leading to greater physical fighting. For immigrant adolescents, in environments of low classmate support, higher immigrant school composition may lead to less experienced threat or frustration, which could explain the slight decrease in levels of physical fighting for this group. The results suggest that being part of a larger in-group (Tajfel and Turner 1986) may be especially important in cases of overall low classmate support. However, interestingly, in environments of high classmate support, greater immigrant school composition is related to greater immigrant fighting. It may be that greater classmate support gives immigrant adolescents a sense of power and ability to express their anger and frustration.

In line with hypotheses, a three way interaction between immigrant school composition, immigrant status and individual level perceived classmate support was also found for bullying victimization. For both immigrants and non-immigrants, high classmate support was related to very low levels of victimization regardless of immigrant school composition. In low support environments, higher immigrant school composition was significantly related to lower bullying victimization for immigrant adolescents (but not

for non-immigrants). This interaction strengthens the limited previous literature suggesting that greater numbers of immigrant adolescents can serve as a protective factor against bullying victimization (Agirdag et al. 2011).

Limitations

Despite the important and new findings of the current study, there are a number of limitations that need to be addressed. While the relationship between immigrant school composition and outcome measures did not differ between countries, the number of countries (11) was not large enough to be able to really examine country level differences. Future studies should take into account country level differences (e.g., income inequality, school violence intervention programs, immigration policies, societal levels of multiculturalism, types of immigrants and levels of underlying ethnic and religious tensions) with a larger number of countries. While classmate support was clearly significant in predicting peer violence levels, knowledge as to whether support was from same or different ethnic group members (Titzmann and Silbereisen 2009; Titzmann et al. 2007) is lacking. Together with knowledge of whether violence is taking place between individuals from the same or different ethnic background this could allow a richer picture of the dynamics of violence within an ethnically heterogeneous school context. In general, we could not take into account the cultural diversity in the classes (numbers of different countries of origin) as we did not have the information and, as such, it is not clear to what extent immigrants from different cultural backgrounds will feel an affinity with each other, due to their immigrant status.

In addition, due to the cultural heterogeneity of the sample, analyses could not take into account particular cultural characteristics of different immigrant group and host countries. All immigration is context specific (Kwak 2003) and related to the particular characteristics of the immigrant group and the country into which it is acculturating. In this sense, a strength of the study (the large number of countries) is also a weakness as it is impossible to take into account the different cultural nuances involved, both of different immigrant groups within the same country or of cultural differences between countries in temperament, attitude to violence and to immigrants and so forth (Blok 2001; Gartstein et al. 2003; Markowitz 2001). Further, we did not take into account whether immigrant students were also visible minorities, language or religious minorities within the majority group they entered into. Some previous research has indicated that visible minority status and other characteristics such as mother tongue and majority language proficiency may influence an immigration and acculturation experience (Beiser et al. 2010;

Liebkind and Jasinskaja-Lahti 2000; Vedder and Virta 2005). However, despite the heterogeneity of the cultures and immigration situations involved, some clear patterns of findings were found.

The study uses data from a large scale, cross-sectional, international self-report survey. As such, the limitations inherent to such surveys (e.g., the cross sectional nature, self-report bias, single respondent, single item measures) are relevant for the current study (Roberts et al. 2009). In particular, the issue of self-report bias may be especially relevant for variables such as perceived classmate support or bullying and the cross-sectional nature does not allow an understanding of the causal relationship between involvement in peer violence and perceived classmate support (e.g., does involvement in bullying or fighting lead to a perception of lower classmate support or vice versa?). In addition, it should be considered that, with a very large sample size, the power of a test is very high and even slight effects are significant (as with immigrant school composition). Despite these methodological limitations, all variables in the current study have been well-validated and the HBSC survey is a well published and internationally well-regarded study.

While the current study examined classroom support, there are additional variables related to school climate that could impact levels of violence in ethnically diverse classrooms; e.g., openness to cultural diversity, teacher support of ethnic and immigrant minorities and academic support for immigrants with language difficulties. Identifying the distress behind immigrant youth violence is necessary for prevention of both the violence itself and the resulting health concerns. Lastly, since a random sample of classes from each of the 5th, 7th and 9th grades was taken, we did not have information about the immigrant status of all pupils in school. Therefore, we had to use an aggregate level of immigrant status of individual participants, which may not be the exact school composition.

Conclusions and Suggestions for Future Research

The current study enabled us to examine the relationship between immigrant school composition and peer violence and the potential modifying effect of classmate support among immigrant and non-immigrant adolescents in 11 countries. A significant, positive relationship was found between immigrant school composition and bullying perpetration and physical fighting, with stronger associations between immigrant school composition and bullying perpetration for immigrant compared to non-immigrant adolescents. It is important for heterogeneously ethnic schools to be aware of the relationship between immigrant school composition and peer violence. The results highlight the complexity of ethnically diverse classrooms in the current

multicultural reality and suggest that both immigrant and non-immigrant adolescents in classes with high immigrant school composition (as opposed to low) may need to cope with higher levels of violence. High immigrant school composition can lead to competition, conflict and violence.

However, the finding most relevant to policy and intervention was the moderating role of classmate support on the relationship between immigrant school composition and bullying and fighting. The findings highlight a need for school intervention programs that relate to the existence of ethnic groups and between-group dynamics and stress positive intergroup relations and classmate support. Education policy and school interventions can be encouraged which promote increased knowledge of the “other” and strengthen weak ties (Granovetter 1983), such as involving students from different ethnic backgrounds in joint significant tasks and changing the school ethos in order to value differences as a way to personal and social growth. On a positive note, it seems that, by encouraging greater classmate support, many of the negative dynamics can be contained. Despite the generally positive moderating role of classmate support, the finding that levels of immigrant fighting increased in schools with high overall classmate support demands greater understanding of the triggers to immigrant adolescent fighting. In particular, further research can tease apart whether, in these cases, the classmate support is mainly within (and not between) groups, paradoxically increasing intergroup tension and conflict (Esses et al. 2008).

Future directions for research should also include closer examination and understanding of cross-national differences (e.g., national attitudes toward immigrants, levels of discrimination). This would be possible by including a larger number of countries, macro-level variables and a deeper understanding of school related policies (e.g., school programs encouraging cultural diversity and bullying and violence prevention). Furthermore, social relationships (e.g., teacher–pupil relationships) could help the integration and adaptation of immigrant children. Inspired by findings from Stefanek et al. (2012), who found that experiences of bullying victimization differed according to immigrant group, an examination of the relationship between country of origin and involvement in violence could enable a more nuanced understanding of the relationship between immigrant status and peer violence. Finally, future research should try to understand whether increased levels of violence are specifically between immigrant and non-immigrant students and whether acculturation related variables (e.g., cultural identity, perceived discrimination) may explain individual involvement in violence.

The current study highlights the importance of understanding the impact of increasing numbers of immigrant adolescents in school settings on levels of peer violence. Although immigrant school composition is a factor that

cannot be ignored, and is complex to understand and tease apart, we must realize that the effects of perceptions of classmate support are more important and able to buffer the effects of immigrant school composition (especially for non-immigrants). The results suggest that schools may play a critical role in the integration of immigrant youth into an environment of support that may enable feelings of acceptance and belonging. These environments are critical for general well-being and for creating non-violent school atmospheres and more accepting societies overall.

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Authors Contributions SDW & GWJMS conceived of the study, led its design and coordination and drafted the manuscript; BDC participated in the design of the study and performed the statistical analysis; MM, YH-F & KRM participated in the design and interpretation of the data and helped to draft the manuscript; CD participated in the interpretation of the data and helped to draft the manuscript. All authors read and approved the final manuscript.

Conflicts of interest The authors report no conflict of interests.

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