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## A cross-national profile of bullying and victimization among adolescents in 40 countries

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### Abstract

**Objectives:** (1) To compare the prevalence of bullying and victimization among boys and girls and by age in 40 countries. (2) In 6 countries, to compare rates of direct physical, direct verbal, and indirect bullying by gender, age, and country.

**Methods:** Cross-sectional self-report surveys including items on bullying and being bullied were obtained from nationally representative samples of 11, 13 and 15 year old school children in 40 countries, N = 202,056. Six countries (N = 29,127 students) included questions about specific types of bullying (e.g., direct physical, direct verbal, indirect).

**Results:** Exposure to bullying varied across countries, with estimates ranging from 8.6% to 45.2% among boys, and from 4.8% to 35.8% among girls. Adolescents in Baltic countries

reported higher rates of bullying and victimization, whereas northern European countries reported the lowest prevalence. Boys reported higher rates of bullying in all countries. Rates of victimization were higher for girls in 29 of 40 countries. Rates of victimization decreased by age in 30 of 40 (boys) and 25 of 39 (girls) countries.

**Conclusion:** There are lessons to be learned from the current research conducted in countries where the prevalence is low that could be adapted for use in countries with higher prevalence.

**Keywords:** Bullying – Victimization – Prevalence rates – Country comparison.

### Introduction

Countries throughout the world have identified bullying as a leading adolescent health concern<sup>1–3</sup>. Studies from individual countries such as Canada<sup>4</sup>, the United States<sup>5</sup>, Lithuania<sup>6</sup>, Israel<sup>7</sup>, Poland<sup>8</sup> and Greenland<sup>9</sup> have described the prevalence of bullying and victimization. Several studies have examined correlates of bullying, including its association with mental and physical health problems<sup>10</sup>, academic problems<sup>11</sup>, and delinquency and crime<sup>12</sup>. National and more local studies have also examined the epidemiology of bullying and profiled its psychosocial correlates<sup>1,4,5</sup>, yet few cross-national studies

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have been conducted. Existing studies have either involved a limited number of countries, or have not considered specific types of bullying and developmental (or age) changes<sup>13</sup>.

The Health Behavior in School-Aged Children (HBSC) survey 2005/06 provided an opportunity to study bullying in a large multinational sample of school-aged children. In this study, there are over 200 000 school children from 40 different European, North-American countries and Israel that were questioned about bullying and being bullied. This goal of this paper is to compare contemporary estimates of the prevalence of bullying and victimization among adolescents across countries, using standard measures. In a subset of countries we examine these changes for specific subtypes of bullying.

Bullying is defined as the use of power and aggression to cause distress or control another<sup>1-3</sup>. The use of power and aggression may be carried out through direct and indirect forms of aggression. Direct bullying can include physical aggression (hitting, kicking) and verbal aggression (insults, racial or sexual harassment, threats). Indirect bullying is the manipulation of social relationships to hurt (gossiping, spreading rumors) or exclude the individual being victimized. With evolving developmental capacities the nature of bullying and victimization may change with age. Direct aggression of a physical or verbal nature is common in young children<sup>14,15</sup>. As children age, physical aggression tends to decrease and verbal aggression increases<sup>16</sup>. As children develop in their social understanding, they become more capable of indirect forms of aggression. To date no study has examined a multi-country comparison of age related changes in forms of bullying. We hypothesize that physical bullying and victimization will decrease with age and verbal and indirect bullying will increase. There are also gender-specific differences in the developmental progression of aggressive strategies, with girls implementing indirect aggression more than boys<sup>16</sup>. Since the forms of aggression vary with age and differ by gender, we expect that the type of victimization that children experience would reflect a similar developmental pattern.

If these age- or gender related patterns of bullying are consistent in our cross-country analyses, we can begin to speculate on the associated universal developmental processes that are the mechanisms of these differences. The use of “age group” in this study will serve as a proxy for investigating the importance of these varying psychosocial and developmental contexts in influencing bullying typology among adolescents. If the age and gender patterns are not consistent, we will need to consider the cultural contributions to these variations.

This paper aims to compare estimates of the prevalence of bullying and associated victimization, and how these patterns change with age in adolescence and across countries using standard measures and methods. In addition, the relevance

of the developmental context was investigated and the occurrence of direct physical, direct verbal, and indirect types of bullying is described in a subsample of 6 countries. Finally, age and gender differences in bullying across countries will be examined. We expect that the age-related patterns will be similar across countries, although the prevalence will likely vary due to larger cultural factors.

## Methods

### *Study population and procedures*

School-based anonymous surveys were conducted during the 2005/06 school year according to a common HBSC research protocol<sup>17</sup>. Each participating country surveyed a representative sample of school children ages 11, 13 and 15 (approximately grades 6<sup>th</sup>, 8<sup>th</sup> and 10<sup>th</sup>) using identical sampling methods<sup>18</sup>. Sampling unit was a classroom within schools selected by a weighted probability technique to ensure that students were equally likely to be included. All students belonging to a sampled classroom (and present on survey day) were included in the sample. Some countries stratified by local relevant demographic characteristics such as ethnicity, religion, language of instruction, etc. To address clustering effects within classroom, the sample requirements were for a minimum of 1,500 respondents for each of the three age groups, totaling approximately  $n = 4,500$  per country and resulting in a total of  $N = 202,056$  sampled children across all 40 countries. This inflated sample size made it possible to obtain sufficient confidence intervals of  $\pm 3\%$  for representative estimates with sample design effects no more than 1.4 times greater than would be obtained from a simple random sample.

### *Study measures*

Two mandatory questions on bullying and victimization were included in the survey and were used by all 40 participating countries ( $N = 202,056$ ). Six countries, Italy, Luxembourg, Macedonia, Israel, Canada, and the United States ( $N = 29,127$  students), included optional questions about specific types of bullying, enabling to assess the typology of bullying across those countries.

### *Children who are bullied, victimized, and who have dual status (bully-victims)*

In all 40 countries, participants were asked to report how many times they had been bullied at school in the past 2 months and how often they had taken part in bullying another student(s) at school in the past 2 months<sup>18</sup>. Possible responses were: never, once or twice, 2 or 3 times a month, about once a week, or

several times a week. Those who reported taking part in bullying  $\geq 2$  or 3 times a month and did not report being victimized were classified as “children who bully others”. Those who reported being bullied  $\geq 2$  or 3 times a month and did not report bullying others were classified as children who were “victimized by bullying”. Those who reported bullying  $\geq 2$  or 3 times a month and being bullied  $\geq 2$  or 3 times a month were classified as having dual status, “bully-victims”. These were mutually exclusive categories because we were interested in understanding the unique patterns associated with each role.

#### Specific Types of Bullying

Participants in the six countries using optional bullying items reported the frequency of different types of bullying and victimization<sup>19</sup>. Specific types of reported bullying were: 1) physical: “have you hit, kicked, pushed, shoved around, or locked another student indoors?”; 2) verbal: “have you called another student(s) mean names, made fun of, or teased him or her in a hurtful way?”; 3) social: “have you kept another student out of things on purpose, excluded him or her from a group of friends, or completely ignored him or her?”; 4) sexual harassment: “have you made sexual jokes, comments, or gestures to another student(s)?”; 5) racial: “have you made fun of another student because of his or her race or color?”; 6) religious: “have you made fun of another student because of his or her religion?”. Questions about victimization asked about the same forms of bullying. Similar cutoff that were implemented with the general questions were used.

Consistent with existing classification systems<sup>18</sup>, different types of bullying and victimization were further sub-divided into 6 general categories: direct physical bullying (physical type); direct verbal bullying (any of verbal, sexual harassment, racial, or religious type); indirect bullying (social type), direct physical victimization, direct verbal victimization, and indirect victimization. Due to the overlap of these specific types of behaviours we did not look at the bully-victim role.

#### Statistical analysis

Data analyses were conducted with SPSS 14 (SPSS Inc, Chicago, IL). A conservative design effect of 1.4 was used in the inflation of SE estimates to account for the cluster-based sampling<sup>18</sup>. The prevalence of adolescents that reported bullying others, being victimized, or dual status was estimated for each age group (11, 13, and 15 years) and by sex within each of the 40 countries. For each of the six age/sex strata, medians and the range of reported prevalence values were estimated. Chi-square tests for linear trend were used to identify statistically significant ( $p < 0.001$ ) differences in age-specific prevalence estimates by sex within each country. Fisher’s exact test was used to test for significant differences in reported prevalence

by sex. Results were summarized into overall cross-national trends. Specific types of bullying and victimization were described for 6 countries.

## Results

Adolescents ( $N = 202,056$ ) in 40 countries participated in the 2005/06 HBSC survey. Of these, 10.7% ( $N = 21,192$ ) reported bullying others, 12.6% ( $N = 24,919$ ) reported being bullied and 3.6% ( $N = 7,138$ ) reported being both a bully and a victim of bullying.

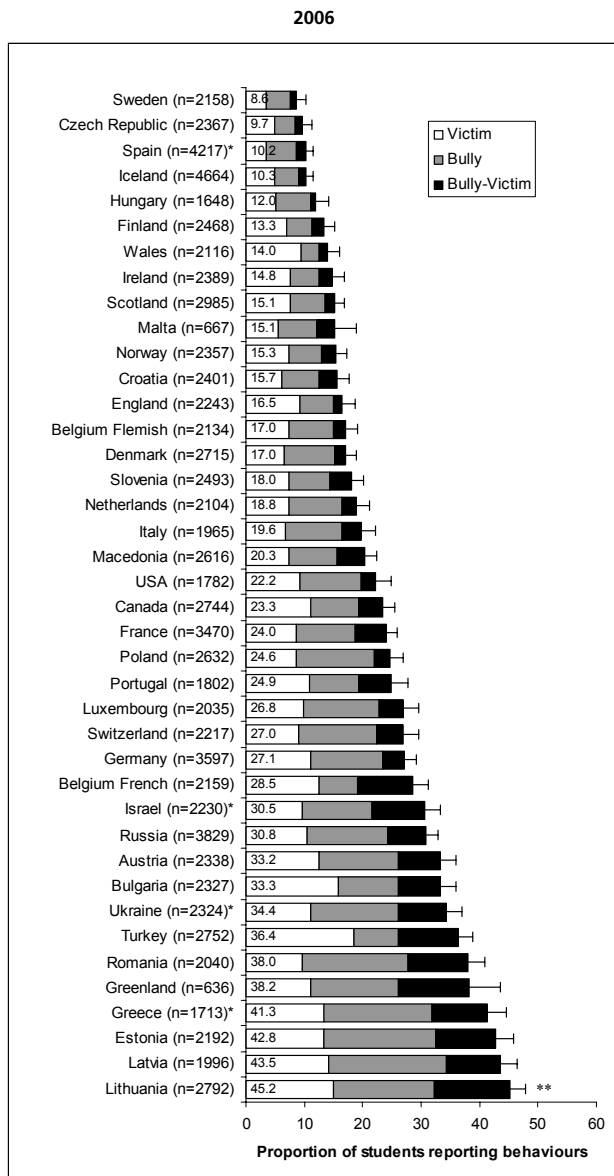
#### *Geographic patterns in bullying and associated victimization (40 countries)*

Involvement of boys in all 3 categories of bullying combined (i.e., bullying others, being bullied and being both a bully and a victim), ranged from 8.6% in Sweden to 45.2% in Lithuania (Fig. 1). This represents a 5-fold difference across countries with an overall median of 23.4%. Among girls, the prevalence of involvement in bullying ranged from 4.8% in Sweden to 35.8% in Lithuania (Fig. 2), a 7-fold difference across countries with an overall median of 15.8%. Seven countries were notable in that boys and girls both reported high prevalence rates of victimization from bullying relative to other countries (both genders were in “top 10” of 40 countries by rank: Lithuania, Latvia, Greece, Greenland, Romania, Turkey, and Ukraine). For bullying others, 9 countries were among the “top 10” countries for both genders (Latvia, Estonia, Greece, Lithuania, Romania, Greenland, Ukraine, Russia, and Austria). With respect to the lowest reported rates, 8 countries (Hungary, Norway, Ireland, Finland, Sweden, Iceland, Czech Republic, and Wales) were among the “bottom 10” countries for both genders. In general, countries in north-west Europe (primarily Scandinavian countries) reported lower prevalence of bullying and victimization compared to eastern European countries.

#### *Trends in bullying and associated victimization by age and gender (40 countries)*

Consistent age-related patterns were observed among boys (Tab. 1), with a significant increase in the prevalence of bullying by age in 28 of 40 countries, and a significant decline in reported prevalence of boys who were victimized by bullying in 30 of 40 countries. Age-related patterns were less consistent for girls, although in 25 of 40 countries victimization from bullying decreased with increasing age and the prevalence of girls involved in bullying increased in 19 countries. In 20 countries no trend was observed.

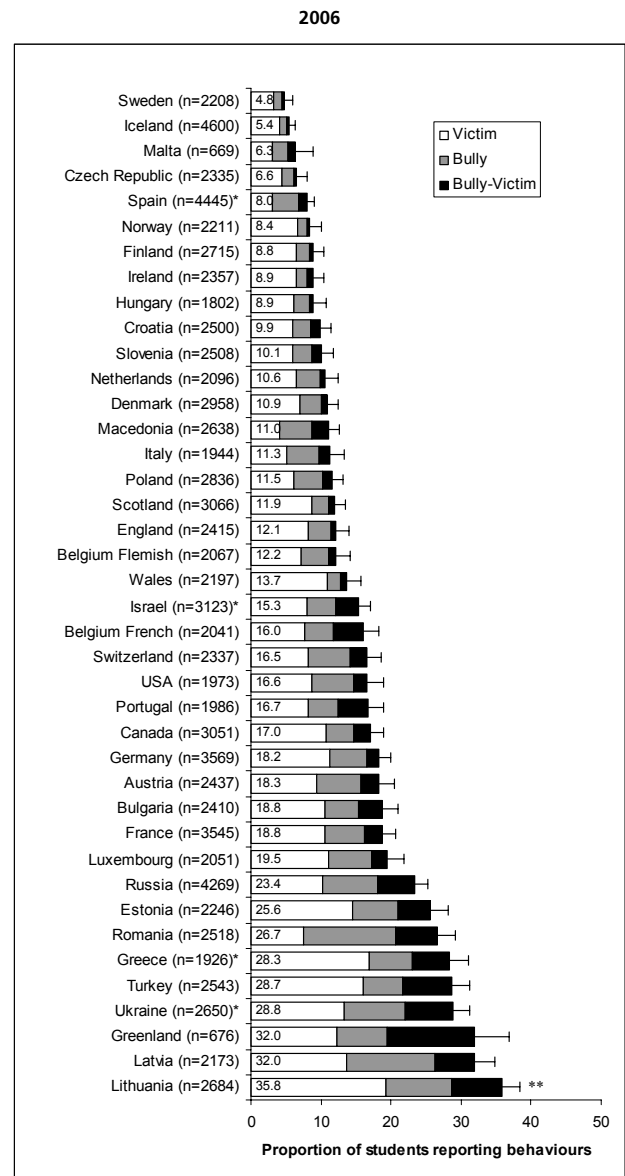
There were clear differences observed in prevalence reported



\* Non-weighted n  
\*\*95% confidence interval surrounding overall proportion inflated by a design effect of 1.4

**Figure 1.** Cross-national comparison of general bullying among boys aged 11, 13 and 15 years old.1

for boys vs. girls. For bullying, reported rates were statistically higher ( $p < 0.001$ ) among boys vs. girls in 40/40 countries; these differences were observed in each age group in a majority of countries (Tab. 1). Girls reported being victimized more than boys;  $p < 0.001$  in most countries but this trend was inconsistent across age. Boys reported being both bullying and being victimized more often in the two older age groups in most countries ( $p < 0.001$ ). The same trend was only observed for girls in the oldest age group.



\* Non-weighted n  
\*\*95% confidence interval surrounding overall proportion inflated by a design effect of 1.4

**Figure 2.** Cross-national comparison of general bullying among girls aged 11, 13 and 15 years old.

### Specific types of bullying and associated victimization (6 countries)

For these analyses, we utilized participants who first reported on general bullying or victimization and then reported on the type of bullying or victimization. The majority of adolescents in each country did not engage in each of the specific types of bullying (Tab. 2). Boys reported higher rates than girls of each of direct physical, direct verbal, and indirect types of bullying, and this pattern was apparent in each age group in

Behaviour	Number of Countries		
	Bullying	Victimization	Bully-victim
<b>BOYS</b>			
Trend observed with increasing age			
Prevalence increased *	28	1	4
Prevalence decreased *	1	30	11
No trend observed	11	9	25
<b>GIRLS</b>			
Trend observed with increasing age			
Prevalence increased *	19	0	0
Prevalence decreased *	1	25	8
No trend observed	20	14	32
<b>BOYS VS. GIRLS**</b>			
Prevalence in boys greater than in girls			
All ages	40	11	34
Age 11 years	30	5	22
Age 13 years	35	7	21
Age 15 years	36	5	25

**Table 1.** Age and gender trends in the prevalence of bullying within 40 countries.

\* Chi-square for linear trend in proportions ( $p < 0.001$ )

\*\* Fisher's exact for difference ( $p < 0.001$ )

<sup>1</sup> Bullying 2 or more times a month

**Table 2.** Median prevalence of bullying by type (direct physical, direct verbal, indirect), gender and age group (6 countries\*).

Type of bullying	BOYS						GIRLS					
	11 Years**		13 Years		15 Years		11 Years**		13 Years		15 Years	
	Median % (range)	Median % (range)	Median % (range)	Median % (range)	Median % (range)	Median % (range)	Median % (range)	Median % (range)	Median % (range)	Median % (range)	Median % (range)	
<b>Direct Physical</b>												
None reported	87	(84–93)	89	(84–92)	91	(90–93)	95	(92–97)	96	(92–98)	97	(95–99)
Bully only	2	(1–3)	3	(2–5)	4	(3–5)	1	(0–2)	1	(0–2)	1	(0–3)
Victim only	6	(3–11)	4	(3–6)	2	(1–3)	2	(1–5)	2	(1–3)	1	(0–1)
Bully–victim	5	(1–9)	4	(2–7)	3	(2–4)	2	(1–4)	2	(0–3)	1	(0–2)
<b>Direct Verbal</b>												
None reported	71	(65–82)	70	(66–78)	75	(73–77)	80	(69–83)	78	(72–83)	84	(75–91)
Bully only	4	(3–6)	8	(4–11)	10	(7–15)	2	(1–4)	4	(2–6)	4	(2–5)
Victim only	15	(11–23)	13	(9–16)	8	(7–9)	13	(10–23)	13	(10–16)	8	(7–15)
Bully–victim	9	(6–16)	9	(5–13)	7	(5–9)	5	(3–8)	5	(3–6)	4	(2–5)
<b>Indirect</b>												
None reported	80	(70–85)	83	(76–87)	87	(83–89)	84	(70–91)	84	(76–92)	89	(79–92)
Bully only	2	(1–3)	3	(1–6)	5	(3–8)	1	(1–3)	2	(1–3)	2	(0–4)
Victim only	12	(7–21)	8	(5–11)	5	(3–7)	11	(6–23)	10	(5–14)	6	(2–13)
Bully–victim	6	(2–12)	6	(3–10)	4	(2–5)	4	(2–7)	3	(1–7)	3	(2–4)

\* countries: Canada, Israel, Italy, Luxembourg, Macedonia, U.S.A.

\*\*In Italy students aged 11, did not answer the questions.

most countries. For boys who bully, there was an increase in reported prevalence in Canada and Luxembourg with age, but no trend in Israel, Italy, and the United States. In Macedonia, there was a decrease with age in direct physical and indirect

bullying for boys. For girls, with the exception of Macedonia, there were no age trends in direct bullying. For verbal bullying in girls, there was a decrease in Israel, but no age trend in the other five countries. For indirect bullying in girls, there

**Table 3.** Prevalence of bullying by type (direct physical, direct verbal, indirect), country, age and gender.

COUNTRY	BOYS % (SE) *				GIRLS % (SE) *			
	11 Years	13 Years	15 Years	p-trend	11 Years	13 Years	15 Years	p-trend
<b>CANADA</b>								
Direct bullying-physical	5.6 (1.3)	6.1 (1.1)	6.7 (1.1)	0.34	1.9 (0.7)	1.8 (0.6)	1.6 (0.5)	0.57
Direct bullying-verbal	8.7 (1.6)	13.4 (1.5)	14.0 (1.5)	0.003	4.0 (1.0)	7.5 (1.1)	8.0 (1.1)	<0.001
Indirect bullying	4.4 (1.1)	5.9 (1.1)	6.4 (1.0)	0.08	3.9 (1.0)	3.9 (0.8)	3.9 (0.8)	0.99
<b>ISRAEL</b>								
Direct bullying-physical	10.1 (1.7)	10.0 (1.6)	8.2 (1.5)	0.26	2.9 (0.8)	1.9 (0.6)	2.7 (0.7)	0.94
Direct bullying-verbal	17.7 (2.1)	21.4 (2.2)	18.0 (2.0)	0.94	8.0 (1.3)	8.0 (1.2)	5.1 (0.9)	0.008
Indirect bullying	8.3 (1.5)	9.6 (1.6)	7.3 (1.4)	0.45	2.9 (0.8)	2.9 (0.8)	2.4 (0.6)	0.40
<b>ITALY</b>								
Direct bullying-physical		6.8 (1.4)	6.8 (1.4)	0.99		0.9 (0.5)	0.8 (0.5)	0.75
Direct bullying-verbal		19.2 (2.2)	17.4 (2.1)	0.40		7.6 (1.5)	6.9 (1.4)	0.64
Indirect bullying		10.0 (1.7)	7.8 (1.5)	0.18		6.2 (1.3)	6.2 (1.3)	0.95
<b>LUXEMBOURG</b>								
Direct bullying-physical	2.7 (0.9)	4.3 (1.0)	6.8 (1.3)	<0.001	1.4 (0.7)	1.3 (0.6)	2.0 (0.7)	0.43
Direct bullying-verbal	6.1 (1.4)	13.0 (1.7)	19.4 (2.0)	<0.001	5.4 (1.3)	5.9 (1.2)	7.5 (1.4)	0.11
Indirect bullying	3.7 (1.1)	6.9 (1.3)	9.9 (1.5)	<0.001	3.2 (1.0)	3.0 (0.9)	5.0 (1.1)	0.07
<b>MACEDONIA</b>								
Direct bullying-physical	9.2 (1.4)	7.4 (1.3)	5.9 (1.1)	0.01	4.0 (0.9)	2.8 (0.8)	1.0 (0.4)	<0.001
Direct bullying-verbal	17.8 (1.9)	16.0 (1.8)	14.9 (1.6)	0.10	8.7 (1.4)	8.6 (1.3)	6.8 (1.2)	0.14
Indirect bullying	13.4 (1.7)	9.8 (1.4)	7.4 (1.2)	<0.001	7.7 (1.3)	6.0 (1.1)	3.2 (0.8)	<0.001
<b>U.S.A.</b>								
Direct bullying-physical	4.8 (1.9)	9.7 (1.7)	7.2 (1.4)	0.67	3.1 (1.4)	4.9 (1.1)	4.0 (1.1)	0.71
Direct bullying-verbal	11.6 (2.9)	17.9 (2.1)	18.8 (2.2)	0.06	8.1 (2.2)	12.8 (1.7)	9.8 (1.7)	0.86
Indirect bullying	8.8 (2.5)	12.2 (1.8)	10.5 (1.7)	0.78	6.8 (2.0)	9.3 (1.5)	7.2 (1.5)	0.87

\* SE inflated by 1.4 to account for design effect

was a decrease in Macedonia, but no age trend in the other five countries. In the majority of countries, there were limited or no changes by age group in the prevalence of the different forms of bullying among both genders.

Similar country-specific analyses of being bullied are described in Tab. 3. The vast majority of children in most countries were not victimized. As children aged from 11 to 15 years, the prevalence of being victimized by each of the 3 types typically declined among both boys and girls. This finding was true for all countries for all types of bullying. Patterns of the types of victimization were highly consistent gender, with no observed changes by age group.

## Discussion

Bullying and victimization is a universal public health problem and impacts large numbers of adolescents. In our 40-country analysis, 26% participating adolescents (n = 53,249) reported involvement in bullying. Bullying involvement transcends

cultural and geographic boundaries. Age differences found in bullying and victimization may be a distal proxy for investigating the impact of varying social contexts (school, peer) and developmental transitions (i. e., social, psychological, and biological). Given the significant psychological, physical, academic, and social implications of these behaviours<sup>1-5</sup>, there is a clear need to address this universal problem and increase understanding of the more proximal developmental mechanisms that may promote or inhibit bullying including cultural influences, school climate, peer processes, adult attitudes and behaviours, and family interactions<sup>12,13,20</sup>.

Adolescents in different countries reported strikingly different rates of involvement in bullying and victimization, with 5-fold differences reported between countries by boys, and 7-fold difference reported between countries for girls. These variations may reflect important cultural and social differences or differences in the implementation of national policy and programs. For example, in countries where the prevalence was relatively low (mainly Scandinavian) there are national programs in place to address bullying whereas in the countries

**Table 4.** Prevalence of victimization by bullies by type of bullying (direct physical, direct verbal, indirect), country, age and gender.

COUNTRY	BOYS % (SE) *				GIRLS % (SE) *			
	11 Years	13 Years	15 Years	p-trend	11 Years	13 Years	15 Years	p-trend
<b>CANADA</b>								
Direct victim-physical	14.0 (1.9)	9.6 (1.3)	4.9 (0.9)	<0.001	6.4 (1.2)	3.8 (0.8)	1.9 (0.6)	<0.001
Direct victim-verbal	30.3 (2.5)	22.6 (1.9)	14.8 (1.5)	<0.001	20.6 (2.0)	20.9 (1.8)	16.0 (1.5)	0.005
Indirect victim	23.9 (2.3)	14.4 (1.6)	8.6 (1.2)	<0.001	20.4 (2.0)	16.7 (1.6)	11.8 (1.3)	<0.001
<b>ISRAEL</b>								
Direct victim-physical	8.9 (1.6)	8.2 (1.5)	4.5 (1.1)	0.002	3.3 (0.9)	1.9 (0.6)	1.6 (0.5)	0.01
Direct victim-verbal	24.7 (2.4)	25.0 (2.3)	15.7 (1.9)	<0.001	15.1 (1.7)	13.7 (1.6)	7.2 (1.1)	<0.001
Indirect victim	14.6 (1.9)	11.4 (1.7)	7.9 (1.4)	<0.001	9.6 (1.4)	7.4 (1.2)	4.4 (0.8)	<0.001
<b>ITALY</b>								
Direct victim-physical		3.8 (1.1)	2.6 (0.9)	0.24		2.2 (0.8)	1.1 (0.6)	0.12
Direct victim-verbal		17.9 (2.2)	12.5 (1.8)	0.008		19.3 (2.2)	10.3 (1.7)	<0.001
Indirect victim		14.2 (2.0)	9.8 (1.6)	0.015		12.5 (1.8)	9.4 (1.6)	0.07
<b>LUXEMBOURG</b>								
Direct victim-physical	6.1 (1.4)	5.4 (1.2)	3.5 (0.9)	0.03	3.5 (1.0)	2.0 (0.7)	0.8 (0.5)	0.001
Direct victim-verbal	15.6 (2.1)	14.2 (1.8)	10.9 (1.6)	0.01	13.6 (1.9)	13.4 (1.7)	10.7 (1.6)	0.10
Indirect victim	13.1 (1.9)	9.6 (1.5)	9.1 (1.5)	0.02	11.3 (1.8)	11.9 (1.7)	10.7 (1.6)	0.73
<b>MACEDONIA</b>								
Direct victim-physical	11.4 (1.6)	8.9 (1.4)	3.8 (0.9)	<0.001	4.6 (1.0)	4.0 (0.9)	1.3 (0.5)	<0.001
Direct victim-verbal	26.1 (2.1)	27.4 (2.1)	16.1 (1.7)	<0.001	18.0 (1.9)	20.0 (1.9)	9.6 (1.3)	<0.001
Indirect victim	20.1 (2.0)	17.1 (1.8)	9.1 (1.3)	<0.001	15.0 (1.7)	14.7 (1.7)	5.8 (1.1)	<0.001
<b>U.S.A.</b>								
Direct victim-physical	14.8 (3.2)	10.7 (1.7)	5.9 (1.3)	<0.001	6.1 (2.0)	4.8 (1.1)	2.6 (0.9)	0.006
Direct victim-verbal	31.5 (4.1)	23.9 (2.4)	16.5 (2.1)	<0.001	27.4 (3.6)	20.9 (2.1)	20.4 (2.3)	0.04
Indirect victim	27.5 (4.0)	18.0 (2.1)	10.5 (1.7)	<0.001	27.4 (3.6)	20.8 (2.1)	17.1 (2.1)	<0.001

\* Inflated by 1.4 to account for design effect

with the highest prevalence (eastern European) there are no country-wide national campaigns. The disparity in prevalence rates of bullying involvement may in fact reflect the success of these national initiatives that have been ongoing for many years (e. g., Olweus, 1993)<sup>19</sup>. A more systemic review of bullying prevention initiative by country is required. This variation across countries may also reflect cultural differences in the definitions of bullying. Smith et al.<sup>21</sup> reported that due to cultural variations in the conceptualization and understanding of bullying, pictures are the only reliable method to collect cross-national comparable data. Thus, the interpretation of our findings on cross-national differences should be interpreted cautiously as the observed large difference in prevalence might be due to cross-cultural differences in the understanding or it may be methodological in that the scale assessing bullying did not utilize pictures. However, it is less likely that the association between bullying and age or gender is largely affected by such cross-cultural differential functioning in the indicators. Some observed trends suggested universal patterns of involvement in bullying by gender and age, yet less than hypothe-

sized. Bullying rates across all ages were higher in boys than in girls, consistent with previous studies, suggesting a possible reflection of bullying as a dominance strategy in boys or potentially boys are more willing to report their bullying behaviours. The same pattern was not true for adolescents victimized by bullying. Girls, in the majority of countries, were more likely to report higher levels of victimization than boys and this pattern was relatively similar for each age group. For both boys and girls, the prevalence of victimization from bullying decreased in half the countries with increasing age. However, in the other half of the counties, no such trend was identified. This inconsistent country pattern suggests cultural specific interpretations.

There are three possible mechanisms that may influence age variations in bullying typology. (1) Development of psychological, cognitive and physical capabilities, (2) changes in social skills and experience, and (3) changes in social activities and academic demands associated with elementary school (age 11), middle school (age 13, and high school (age 15) educational stages and settings.



Boys were more likely than girls to be involved in both bullying others and being bullied. According to the “gateway theory”<sup>21</sup>, children develop risk behaviours in stages from minor to more severe involvements. This model might apply to the development of bullying behaviour. Children who are victimized by bullying might get involved in bullying others, which places them at risk to increase their involvement so that bullying becomes part of their social lifestyle (e. g., more than twice a month). A chronic involvement in both bullying and being bullied might be viewed as a step further in the gateway progression of risk, and place the bully-victim in even a higher risk that might have long term psychosocial and developmental consequences. According to our cross-sectional data the prevalence of bully-victims remained stable across age in 25 of 40 countries (boys) respectively in 32 out of 40 countries (girls). Longitudinal studies need to address this hypothesis. The sub-analyses on type of bullying with the six countries may clarify the gender and age-related patterns. Stereotypical patterns of bullying suggest that boys are more likely to use verbal and physical aggression while girls bully more often with indirect and verbal aggression<sup>15</sup>. Similarly, research suggests that girls increase in their indirect bullying with age<sup>15</sup>. The observed patterns of bullying did not reflect these stereotypes. Boys reported engaging in more of all forms of bullying than girls and this finding was relatively consistent across age and country. The reported prevalence of indirect bullying was relatively low for both genders. There was consistency with the literature on physical bullying which was much less prevalent than other forms of bullying. There were limited age-related differences in the form of bullying. The lack of developmental trends suggest that youth who bully are more likely to be generalist (e. g., they do not specialize on one form of bullying over another) and they do not change this pattern with age.

The prevalence of victimization in the 6 country analyses was consistent for both genders: Victimization generally declined with age for all types. The reduction in victimization by age could be attributable to age related changes in youth adapting socially as they develop or reflect equalization in physical sizes and consequently, increased effectiveness at inhibiting bullying or reflect the differences in circumstances of elementary, middle and high school in their respective social climate and academic demands. Adolescents who bully may be targeting a fewer number of students with increasing age or targeting younger children. It would be important to identify who is bullying who to further understanding of the bully-victim relationship. Those youth who continue to be victimized at older ages are likely to be very vulnerable to long-term problems. These hypotheses require national and longitudinal study. Finally, for both boys and girls, in the majority of

countries, there were no clear age-related differences in the prevalence for those youth with dual status.

The strengths of this research include standard survey methodology employed and the comparison of prevalence across 40 countries. Limitations of this analysis warrant comment. They include our use of self-reported data and the cross-sectional nature of the survey. The HBSC questionnaire items have been subjected to extensive piloting and validation efforts, yet the possibility of biased reporting motivated by a desire to provide socially desirable responses must be recognized. The cross-sectional design limits our ability to infer causal relationships and our analyses must be viewed as exploratory in the absence of longitudinal data. Because these findings are based upon classroom samples, they will not be representative of adolescents in out of school settings and it is these adolescents who may be at the highest risk for involvement in bullying.

#### *Implications*

Bullying is a global social health problem and requires intervention at a population level. An understanding of the problem begins with prevalence estimates and national and cross-national comparisons, such as provided in this paper. More knowledge about the etiology of bullying and the psychosocial and behavioural determinants, and the role of contextual factors is needed, including national, prospective, and cross-national studies of etiology. There is a growing need for more intensive international collaboration in both research and the development and evaluation of prevention strategies so that we can be more effective in reducing this public health problem. There may be valuable lessons to be learned from current research conducted in countries where the reported prevalence is low that could be adapted for use in countries with higher prevalence. Health promotion and prevention strategies need to address bullying problems to make the world safer for all adolescents.

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## References

1. Nansel TR, Overpeck MD, Haynie DL, Ruan J, Scheidt PC. Relationships between bullying and violence among US youth. *Arch Pediatr Adolesc Med* 2003;157:348–53.
2. Craig WM, Pepler DJ. Identifying and targeting risk for involvement in bullying and victimization. *Can J Psychiatry* 2003;48:577–82.
3. Due P, Holstein PE, Lynch J, et al. Health Behavior in School-Aged Children. Bullying Working Group. Bullying and symptoms among school-aged children: international comparative cross sectional study in 28 countries. *Eur J Public Health* 2005;15:128–32.
4. Volk A, Craig WM, Boyce W, King M. Perceptions of parents, mental health, and school amongst Canadian adolescents from the provinces and the northern territories. *Can J School Psychol* 2006;21:33–46.
5. Nansel TR, Overpeck M, Pilla RS, Ruan WJ, Simons-Morton B, Scheidt P. Bullying behaviors among US youth: prevalence and association with psychosocial adjustment. *J Am Med Assoc* 2001;285:2094–100.
6. Zaborskis A, Cirtautiene L, Žemaitiene N. Bullying in Lithuanian schools in 1994–2002. *Medicina (Kaunas)* 2005;41:614–20.
7. Molcho M, Harel Y, Dina LO. Substance use and youth violence. A study among 6th to 10th grade Israeli school children. *Int J Adolesc Med Health* 2004;16:239–51.
8. Mazur J, Malkowska A. Bullies and victims among Polish school-aged children. *Med Wieku Rozwoj* 2003;7:121–34.
9. Schnohr C, Niclasen BV. Bullying among Greenlandic schoolchildren: development since 1994 and relations to health and health behavior. *Int J Circumpolar Health* 2006;654:305–12.
10. Kumpulainen K, Rasanen E. Children involved in bullying at elementary school age: their psychiatric symptoms and deviance in adolescence: an epidemiological sample. *Child Abuse Negl* 2000;24:1567–77.
11. Pellegrini A. Bullying during the middle school years. In: Sanders CE, Phye GD, eds. *Bullying: implications for the classroom*. New York, New York: Elsevier, 2004:177–202.
12. Pepler D, Jiang D, Craig W, Connolly J. Developmental trajectories of bullying and associated factors. *Child Dev* 2008;79:325–38.
13. Nansel T, Craig WM, Overpeck M, Saluja G, Ruan J and the Health Behavior in School-aged Children Bullying Analyses Working Group. Cross-national consistency in relationship between bullying behaviors and psychosocial adjustment. *Arch Pediatr Adolesc Med* 2004;158:730–46.
14. Ayers CD, Williams JH, Hawkins JD, Peterson PL, Abbott RD. Assessing correlates of onset, escalation, deescalation, and desistance of delinquent behavior. *J Quant Criminol* 1999;15:277–306.
15. Bjorkqvist K, Osterman K, Kaukiainen A. The development of direct and indirect aggressive strategies in males and females. In: Bjorkqvist K, Niemela P, eds. *Of mice and women: aspects of female aggression*. New York, New York: Academic Press, 1991:51–64.
16. Nishina A, Juvonen J, Witkow M. Sticks and stones may break my bones, but names will make me feel sick: the psychosocial, somatic, and scholastic consequences of peer harassment. *J Clin Child Adolesc Psychol* 2005;34:37–48.
17. Currie C, Nic Gabhainn S, Godeau E, et al., eds. *Inequalities in young people's health: HBSC international report from the 2005/2006 Survey*. Copenhagen, Denmark: WHO Regional Office for Europe, 2008.
18. Currie C et al., eds. *2005/06 Survey Protocol for the Health Behaviour in School-Aged Children Survey*. Edinburgh: University of Edinburgh, Child and Adolescent Health Research Unit, 2007.
19. Olweus D. *Bullying at School: what we know and what we can do*. Cambridge, MA: Blackwell Publishers, 1993.
20. Spriggs AL, Iannotti RJ, Nansel, TR, Haynie DL. Adolescent bullying involvement and perceived family, peer and school relations: commonalities and differences across race/ethnicity. *J Adolesc Health* 2007;41:283–93.
21. Smith PK, Cowie H, Olafsson R, Liefoghe APD, et al. Definitions of bullying: a comparison of terms used, and age and sex differences, in a 14-country international comparison. *Child Dev* 2002;73:1119–33.

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