Risk Indicators and Outcomes Associated With Bullying in Youth Aged 9-15 Years

Mark E. Lemstra, PhD,[1] Ghita Nielsen, MD,[2] Marla R. Rogers, MPA,[3] Adam T. Thompson, BA,[3] John S. Moraros, PhD[4]

ABSTRACT

Objectives: Bullying is a form of aggression in which children are intentionally intimidated, harassed or harmed.

The main objective of our study was to determine the unadjusted and adjusted risk indicators associated with physical bullying. The second objective was to clarify the impact of repeated physical bullying on health outcomes – namely depressed mood.

Methods: Every student attending school in the city of Saskatoon, Canada, between grades 5-8 was asked to complete the Saskatoon School Health Survey.

Results: In total, 4,197 youth completed the questionnaire; of these, 23% reported being physically bullied at least once or twice in the previous four weeks.

After multivariate adjustment, the covariates independently associated with being physically bullied included being male (OR=1.39), attending a school in a low-income neighbourhood (OR=1.41), not having a happy home life (OR=1.19), having a lot of arguments with parents (OR=1.16) and feeling like leaving home (OR=1.23).

Children who were repeatedly physically bullied were more likely to have poor health outcomes. For example, 37.3% of children who were physically bullied many times per week had depressed mood in comparison to only 8.1% of children who were never bullied. After regression analysis, children who were ever physically bullied were 80% more likely to have depressed mood.

Conclusion: Most of the independent risk indicators associated with physical bullying are preventable through appropriate social policy implementation and family support. It also appears that preventing repeated bullying should be the main focus of intervention in comparison to preventing more infrequent bullying.

Key words: Risk indicators; bullying; adolescents

La traduction du résumé se trouve à la fin de l'article.

Can J Public Health 2012;103(1):9-13.

Bullying is a form of aggression in which children are intentionally intimidated, harassed or harmed. The key elements of bullying include aggression, repetition and an imbalance of power between the bully and the victim.[1]

Bullying can impact the physical, emotional and social health of a child. One literature review reports that victims of bullying are more likely to report sleep disturbances, abdominal pain, headaches, sadness, low self-esteem, depression, anxiety and suicidal thoughts.[1] A Canadian study reviewing bullying among schoolchildren found that the long-term consequences of being a victim of bullying included mental health problems, criminality, school drop-out and unemployment.[2]

Regrettably, a large Canadian study found no reduction in bullying prevalence in a sample of schoolchildren after their participation in a school-based anti-bullying program.[3] In fact, a literature review on childhood bullying concluded that we still need a clearer picture on the nature and prevalence of bullying in North America.[4]

As such, the main objective of our study was to determine the unadjusted and adjusted risk indicators associated with physical bullying among children in grades 5-8. The second objective was to describe the impact of repeated physical bullying on health outcomes – namely depressed mood.

METHODS

Every student in grades 5-8 attending school in the city of Saskatoon, Canada, was asked to complete the Saskatoon School Health Survey in February of 2008. There were 9,825 youth registered in grades 5-8 in the public and catholic school boards.

The bullying survey used was the Safe School Study developed by the Canadian Public Health Association, which was based on a survey used by the World Health Organization.[3,5] This survey measures the prevalence of bullying by asking "In the past four weeks, how often have you been bullied by other students… [physically, verbally, socially or electronically]". There are four potential responses: never, once or twice a month, every week or many times

Author Affiliations

1. Department of Psychiatry, Department of Pediatrics, University of Saskatchewan; Saskatoon Tribal Council, Saskatoon, SK
2. Department of Pediatrics, University of Saskatchewan, Saskatoon, SK
3. Saskatoon Tribal Council, Saskatoon, SK
4. School of Public Health, University of Saskatchewan, Saskatoon, SK

Correspondence: Dr. Mark Lemstra, Department of Pediatrics, University of Saskatchewan, Health Sciences Building, 107 Wiggins Road, Saskatoon, SK S7N 5E5, Tel: 306-966-2108, E-mail: mark.lemstra@usask.ca

Acknowledgements: Thanks to the Saskatoon Public School Board, the Greater Saskatoon Catholic School Board, the Department of Pediatrics at the University of Saskatchewan, the Saskatoon Tribal Council and the Saskatoon Health Region. This research was paid for by a grant from the Canadian Institutes of Health Research.

Conflict of Interest: None to declare.

Table 1. Demographic Information of Saskatoon School Health Survey Respondents

Demographic	n (%)*	Census
Grade in school		
Grade 5	974 (23.2)	
Grade 6	1059 (25.2)	
Grade 7	1153 (27.5)	
Grade 8	985 (23.5)	
Missing	26 (0.6)	
Age (Years)		
9-10	902 (21.5)	
11	1044 (24.9)	
12	1124 (26.8)	
13-15	1096 (26.1)	
Missing	31 (0.7)	
Gender		
Male	2039 (48.6)	51%
Female	2138 (50.9)	49%
Missing	20 (0.5)	
Cultural status		
Caucasian or "White"	3222 (76.8)	82.7%
First Nations or Métis	422 (10.1)	10.0%
Other	474 (11.3)	7.3%
Missing	79 (1.9)	
Father is employed		
Yes	3811 (90.8)	
No	247 (5.9)	5.7%
Missing	139 (3.3)	
Father's education level		
Less than high school graduate	195 (4.6)	22.5%
High school graduate	1139 (27.1)	29.2%
College or university graduate	2061 (49.1)	48.4%
Missing	802 (19.1)	
Father's occupation		
Professional (manager or employment requiring degree)	1039 (24.8)	21%
Non-professional	2489 (59.3)	79%
Missing	669 (15.9%)	
Mother is employed		
Yes	3532 (84.2)	
No	590 (14.1)	5.3%
Missing	75 (1.8)	
Mother's education level		
Less than high school graduate	126 (3.0)	20.4%
High school graduate	1081 (25.7)	25.8%
College or university graduate	2357 (56.2)	46.3%
Missing	633 (15.1)	
Mother's occupation		
Professional (manager or employment requiring degree)	1027 (24.5)	32.4%
Non-professional	2319 (55.3)	67.6%
Missing	851 (20.3)	
Neighbourhood income level of school		
School in one of six low-income neighbourhoods	183 (4.4)	9.9%
School in other neighbourhoods	4014 (95.6)	90.1%

* N = 4197 Saskatoon youth in grades 5-8.

a week. The survey also queries causes of bullying, where bullying occurs, responses to bullying and what should be done to prevent or reduce bullying. Despite widespread usage, the validity and reliability of the survey was never formally tested.

All questions on demographics, socio-economic status and family unit were taken from the National Longitudinal Survey of Children and Youth (NLSCY) developed by Statistics Canada.[6] Parenting questions came from the Parenting Relationship Scale.[7] The depressed mood questionnaire was the Center for Epidemiological Studies Depression Scale with a summary score of 16 used as the cut-off.[8] The self-esteem questionnaire, suicide ideation and self-reported health were also taken from the NLSCY.[6,9]

Using census data, postal codes and existing municipal boundaries for neighbourhoods, Saskatoon was divided into two groups: six low-income continuous neighbourhoods (as defined by Statistics Canada using low-income cut-offs) and the rest of Saskatoon.[10]

Table 2. Cross-tabulations of Being Physically Bullied Ever in Past Four Weeks by Demographics, Socio-economic Status and Body Mass Index

	Physically Bullied in Past Month (%)	p-value
Grade in school		0.259
Grade 5	24.6	
Grade 6	24.4	
Grade 7	22.7	
Grade 8	21.3	
Age (Years)		0.453
9-10	24.3	
11	24.6	
12	21.9	
13-15	22.3	
Gender		0.000
Male	27.3	
Female	19.3	
Cultural status		0.002
Caucasian	23.0	
First Nations or Métis	28.9	
Other	20.7	
Father is employed		0.003
Yes	22.6	
No	31.2	
Father's education level		0.000
Less than high school graduate	29.4	
High school graduate	26.3	
College or university graduate	20.4	
Father's occupation		0.018
Professional	19.7	
Non-professional	23.3	
Mother is employed		0.527
Yes	23.0	
No	24.2	
Mother's education level		0.000
Less than high school graduate	36.2	
High school graduate	25.8	
College or university graduate	21.7	
Mother's occupation		0.150
Professional	21.4	
Non-professional	23.7	
Neighbourhood income level of school		0.048
School in one of six low-income neighbourhoods	29.5	
School in other neighbourhoods	22.9	
Body Mass Index		0.024
Normal (<30)	22.0	
Overweight (>30 but <35)	24.7	
Obese (>35)	28.3	

A five-stage informed consent protocol was used requiring consent from each school board, principal, teacher, parent and youth participant. Ethics approval was obtained from the University of Saskatchewan Behavioural Research Ethics Board (BEH# 06-237).

Cross-tabulations were performed initially between the variable examining if youth were ever physically bullied (once or twice per month, or once a week or many times per week) within the previous four weeks and demographic information, socio-economic information, body mass index, family unit and relationship with parents. After these initial cross-tabulations, logistic regression was used to determine the independent relationship between the outcome variable of ever having been physically bullied in the previous four weeks and the potential explanatory variables. The final results are presented as adjusted odds ratios with 95% confidence intervals.

Cross-tabulations were then performed to determine the impact of repetitive physical bullying on depressed mood, low self-esteem, suicide ideation, low self-reported health and feeling like an outsider at school. Logistic regression was then used to determine the stepwise and independent relationship between ever having been physically bullied in the previous four weeks and current depressed mood.

RESULTS

Of 9,625 youth eligible to participate, 4,197 completed the questionnaire (43.6%). The demographics of the survey participants are presented in Table 1 with comparisons to the 2006 Census. For clarification, the Census does not have socio-economic information on parents – only on all adults.[11] The only major difference not explained by survey methodology is under-representation of youth living in low-income neighbourhoods.

In regard to bullying, 23% reported being physically bullied, 42% reported being verbally bullied, 31% reported being socially bullied and 10% reported being electronically bullied at least once or twice in the previous four weeks. Overall, 19% reported experiencing physical bullying once or twice a month and 4% experienced it every week or many times a week.

Saskatoon children were asked to self report why they thought they were being bullied; 19.5% and 14.0% reported body shape and weight, respectively, as causes of being bullied. The most common area for bullying is the outdoor area around the school, with 55.1% of youth reporting this as a site for bullying. The next most common location for bullying was hallways, with 37.7% of youth reporting this as a problem area.

The most common response after seeing or hearing another student being bullied was to help the person being bullied (29.7%), followed by telling a parent (24.1%) or telling an adult at school (22.9%). However, 18.1% ignored the bullying, 7.7% stood and watched and 2.1% joined in with the bullying.

The youth completed an open-ended question on what they thought their school could do to prevent or reduce bullying. The most common solution recommended was increased supervision at schools (13.8%), followed by more discipline for bullies (10%), more anti-bully programs (8.1%) and more anti-bully education (2.2%); 8.7% believed nothing could be done.

Prior to regression analysis, there were no statistically significant differences in physical bullying by school grade, age, mother's employment status or mother's occupational classification. Prior to statistical adjustment, victims of physical bullying were more likely to: be boys, be of First Nations or Métis cultural status, have an unemployed father, have a mother and a father who did not graduate from high school, have a father with a non-professional occupation; and were more likely to live in a low-income neighbourhood. Victims of physical bullying were also more likely to be overweight or obese (Table 2). Not living with both parents and all parental relationship questions were associated with physical bullying prior to statistical adjustment (Table 3).

After logistic regression, only five covariates were independently associated with the outcome of being physically bullied. These covariates included: male gender, attending a school in a low-income neighbourhood, not having a happy home life, having a lot of arguments with parents and feeling like leaving home (Table 4). There was no confounding or effect modification in the final model.

Table 3. Cross-tabulations of Being Physically Bullied Ever in Past Four Weeks by Family Unit and Parental Relationship

	Physically Bullied in Past Month (%)	p-value
Who do you live with?		0.000
Both my mother and father	21.5	
Other than both mother and father	28.1	
Parenting relationship scale		
My parents understand me		0.000
Disagree or strongly disagree	33.0	
Neither agree nor disagree	32.3	
Agree or strongly agree	20.8	
I have a happy home life		0.000
Disagree or strongly disagree	37.5	
Neither agree nor disagree	36.4	
Agree or strongly agree	20.3	
My parents expect too much from me		0.000
Disagree or strongly disagree	19.3	
Neither agree nor disagree	22.9	
Agree or strongly agree	30.4	
My parents trust me		0.000
Disagree or strongly disagree	36.3	
Neither agree nor disagree	32.2	
Agree or strongly agree	21.6	
I have a lot of arguments with my parents		0.000
Disagree or strongly disagree	18.3	
Neither agree nor disagree	26.3	
Agree or strongly agree	37.6	
There are times when I would like to leave home		0.000
Disagree or strongly disagree	19.9	
Neither agree nor disagree	25.5	
Agree or strongly agree	38.6	
What my parents think of me is important		0.000
Disagree or strongly disagree	32.0	
Neither agree nor disagree	26.2	
Agree or strongly agree	22.6	
My parents expect too much from me at school		0.000
Disagree or strongly disagree	19.1	
Neither agree nor disagree	22.0	
Agree or strongly agree	33.1	

The prevalence of health problems increased substantially as bullying frequency increased from never to once or twice per month to weekly to many times per week (Table 5). For example, only 8.1% of youth who were never physically bullied had depressed mood. In comparison, 16.2% of youth had depressed mood if they were bullied once or twice per month. Depressed mood increased to a prevalence rate of 26% and 37.3%, respectively, for youth who were physically bullied once a week or many times per week.

The unadjusted odds ratio for the effect of ever being physically bullied, in comparison to never being physically bullied in the previous four weeks, on current depressed mood was 2.7. After controlling for gender, age, father's education level, parenting

Table 4. Logistic Regression Model – Ever Being Physically Bullied in Past Four Weeks and Independent Covariates

Independent Covariates	Odds Ratio	95% Confidence Interval
Male gender	1.39	1.28-1.47
Live in low-income neighbourhood	1.41	1.01-1.99
I have a happy home life (disagree or strongly disagree)	1.19	1.11-1.26
I have a lot of arguments with my parents (agree or strongly agree)	1.16	1.08-1.26
There are times when I would like to leave home (agree or strongly agree)	1.23	1.15-1.31

Reference category for dependent variable: never physically bullied in past four weeks.
Reference categories for independent variables: Female gender
I have a happy home life – neither agree/disagree; agree or strongly agree
I have a lot of arguments with my parents – neither agree/disagree; disagree or strongly disagree
There are times when I would like to leave home – neither agree/disagree; disagree or strongly disagree.

Table 5. Cross-tabulations of Frequency of Physical Bullying and Impact on Health Outcomes

Disorder	Physical Bullying Frequency in Past Four Weeks					
	Never Bullied	Once or Twice a Month	Every Week	Many Times a Week	Rate Ratio*	95% CI
Depressed mood	8.1%	16.2%	26.0%	37.3%	4.60	4.53-4.67
Low self-esteem	12.1%	18.8%	31.2%	35.9%	2.97	2.92-3.02
Seriously considered suicide	5.8%	12.7%	27.3%	21.5%	3.71	3.65-3.76
Poor or fair self-reported health	3.6%	6.2%	16.0%	18.1%	5.03	4.95-5.11
Felt like outsider at school most or all of the time	5.5%	13.1%	35.1%	43.4%	7.90	7.78-8.02

* Rate ratio is bullied many times a week in comparison to never bullied, with 95% confidence interval.

Table 6. Crude and Adjusted Odds Ratios for the Effect of Bullying on Depressed Mood Among Saskatoon School Health Survey Respondents

Covariates	Model 0 OR (95% CI)	Model 1 AOR (95% CI)	Model 2 AOR (95% CI)	Model 3 AOR (95% CI)	Model 4 AOR (95% CI)	Model 5 AOR (95% CI)
Ever physically bullied	2.7 (2.2-3.7)	3.0 (2.5-3.7)	3.1 (2.4-3.8)	2.8 (2.2-3.5)	2.2 (1.7-2.9)	1.8 (1.3-2.4)
Age, 13-15	1.1 (0.8-1.3)	1.1 (0.8-1.3)	1.1 (0.9-1.4)	1.0 (0.8-1.3)	0.8 (0.6-1.0)	0.7 (0.5-1.0)
Female gender	1.7 (1.4-2.1)		1.9 (1.6-2.4)	2.0 (1.6-2.5)	1.7 (1.3-2.3)	1.6 (1.2-2.2)
Father's education level	1.6 (1.4-1.9)			1.6 (1.3-1.9)	1.4 (1.2-1.7)	1.3 (1.1-1.6)
Parenting relationship						
My parents understand me	11.5 (8.3-15.8)				5.5 (3.6-8.2)	3.9 (2.4-6.3)
I have a happy home life	8.0 (5.7-11.2)				2.7 (1.7-4.3)	1.6 (0.9-2.8)
There are times when I would like to leave home	7.0 (5.6-8.6)				4.6 (3.6-6.0)	2.5 (1.9-3.5)
Mental health						
Low self-esteem	10.2 (8.2-12.6)					5.6 (4.1-7.5)
Suicide ideation in past 12 months	12.4 (9.6-16.0)					4.4 (3.1-6.3)

Reference category for dependent variable: depressed mood – no.
Reference categories for independent variables: male gender; aged 9-12; father's education – high school graduate or higher; my parents understand me – neither agree/disagree, strongly agree, agree; I have a happy home life – neither agree/disagree, strongly agree, agree; there are times when I would like to leave home – neither agree/disagree, strongly disagree, disagree; normal self-esteem; suicide ideation – no.
Model 0: Not adjusted; Model 1: Adjusted for Age; Model 2: Adjusted for Gender; Model 3: Adjusted for Father's education level; Model 4: Adjusted for three parent relationship variables; Model 5: Adjusted for low self-esteem and suicide ideation.

relationship, self-esteem and suicide ideation, the adjusted odds ratio was reduced to 1.8 (Table 6).

DISCUSSION

According to the 1989 UN Convention, every child has the right to be protected from all forms of violence and abuse. Bullying robs this basic human right from children.[1]

The CPHA study mentioned earlier found that 22% of Canadian children were physically bullied.[3] These findings are consistent with our results (23%).

Human Resources Development Canada (HRDC) used the National Longitudinal Survey for Children and Youth to review bullying among Canadian schoolchildren with a sample size of 11,308. Consistent with our study, the authors concluded that victimization was associated with male gender, internalizing behaviour problems like depression and low self-esteem, low socio-economic status and fewer positive interactions with parents.[2] The authors of the prospective HRDC study suggest low socio-economic status leads to more family stress which then leads to increased hostile interactions between parents and children with inconsistent and harsh punishment practices. As such, the authors recommend that, in order for social policy to be successful, it include targeted financial support and employment opportunities for young parents with low income and unemployment issues.[2]

Our study clarifies the impact of repetitive physical bullying on youth with regard to health outcomes. For example, depressed mood was 4.6 times more common in youth who were bullied physically many times per week in comparison to youth who were never physically bullied. The independent effect of ever being bullied in the previous four weeks resulted in 80% increased odds of having current depressed mood.

We were unable to find a study with a large sample size that reviewed the impact of increased frequency of bullying on multiple outcomes. In a survey with 91 American students between the ages of 11-14, frequency of exposure to bullying was the greatest factor in predicting trauma.[12] In a world of limited human and financial resources, this suggests the need to prioritize, design and implement campaigns centered on preventing repeated bullying as opposed to more infrequent bullying.

In regards to evidence-based interventions, a literature review that examined school-based programs to prevent bullying found that although educational interventions consisting of lectures and videos are the easiest to administer, they do not work.[1] Only comprehensive whole-school interventions that include sanctions, teacher training, classroom curriculum, conflict resolution training and individual counseling by school counselors when required are somewhat effective.[1]

Another paper suggests that schools appear to be the best setting for intervention. A meta-analysis of randomized trials from the Cochrane Collaboration examined the effectiveness of school-based prevention programs and found that these programs can modestly reduce aggressive behaviour.[13]

School connectedness, a feeling that youth belong to their school environment, has also been employed to deter bullying in the school system.[14] For example, a program that includes relationship building, self-esteem enhancement, goal setting, and academic assistance was found to improve self-esteem levels and foster positive connections in multiple areas of the student's life.

Physicians can also play a role in the recognition, prevention and treatment of bullying behaviour.[15] In Canada, the Canadian Pediatric Society recommends screening for abuse and violence in children ages six and up. Interventions and strategies based on initial point of contact with physicians have been successful in preventing violent behaviour and injury among children and adolescents.[16]

Our study has three limitations to discuss. First, it was cross-sectional and, as such, causation cannot be determined. Second, the sample had an overall response rate of 43.6%. Response rates are low in surveys involving youth in North American schools (around 50%) and are sometimes not even reported.[16] The five-stage consent protocol required in studies with youth in school undoubtedly impacts and significantly reduces participation rates. Third, there was a selection bias in response rate by neighbourhood income.

In summary, most of the independent risk indicators associated with physical bullying identified in this study are preventable through appropriate social policy implementation and family support. It also appears that preventing repeated bullying, as opposed to more infrequent bullying, should be the main focus of future intervention strategies.

REFERENCES

1. Vreeman RC, Caroll AE. A systematic review of school based interventions to prevent bullying. *Arch Pediatr Adolesc Med* 2007;161:78-88.
2. Human Resources Development Canada. Bullying and victimization among Canadian school children. Hull, QC: Applied Research Branch, Human Resources Development, 1998.
3. Totten M. CPHA safe school study. [online] 2004. Available at: http://www.cpha.ca/uploads/progs/_/safeschools/safe_school_study_e.pdf (Accessed July 19, 2010).
4. Griffin RS, Gross AM. Childhood bullying: Current empirical findings and future directions for research. *Aggression Violent Behav* 2004;9:379-400.
5. World Health Organization. Young people's health in context. HSBC international report from the 2001/2002 survey. Copenhagen: WHO, 2004.
6. Statistics Canada. National Longitudinal Survey of Children and Youth, Cycle 5, Microdata Users Guide. Ottawa, ON: Statistics Canada and Human Resources Development, 2003.
7. Boyce W. Young People in Canada: Their Health and Wellbeing. Health Behaviors in School Aged Children Survey. Ottawa, 2004.
8. Poulin C, Hand D, Bourdeau B. Validity of a 12 item version of the CES-D used in the National Longitudinal Survey of Children and Youth. *Chronic Dis Can* 2005;26:65-72.
9. Wang F, Wild TC, Kipp W, Kuhle S, Veugelers PJ. The influence of childhood obesity on the development of self-esteem. *Statistics Canada Health Reports* 2009;20:21-27.
10. Lemstra M, Neudorf C, Opondo J. Health disparity by neighbourhood income. *Can J Public Health* 2006;97:435-39.
11. Statistics Canada. 2006 Community Profiles- Census Subdivision- Saskatoon. 2010. Available at: http://www12.statcan.gc.ca/censusrecensement/2006/dppd/prof/92591/details/page.cfm?Lang=E&Geo1=CSD&Code1=4711066&Geo2=PR&Code2=47&Data=Count&SearchText=Saskatoon&SearchType=Begins&SearchPR=01&B1=All&Custom= (Accessed April 20, 2010).
12. Carney JV. Perceptions of bullying and associated trauma during adolescence. *ASCA Professional School Counseling* 2008;11:179-87.
13. Mytton J, DiGuiseppi C, Gough D, Taylor R, Logan S. Are school based programs aimed at children who are considered at risk of aggressive behavior effective in reducing violence? *Cochrane Rev* 2006;3:1-93.
14. King KA, Vidourek RA, Davis B, McClellan W. Increasing self-esteem and school connectedness through a multidimensional mentoring program. *J Sch Health* 2002;72(7):294-99.
15. Lamb J. Approach to bullying and victimization. *Can Fam Phys* 2009;55(4):356-60.
16. Borowsky IW, Mozayeny S, Stuenkel K, Ireland M. Effects of a primary care-based intervention on violent behavior and injury in children. *Pediatrics* 2004;114(4):392-99.

Received: July 22, 2010
Accepted: July 7, 2011

RÉSUMÉ

Objectifs : L'intimidation est une forme d'agression par laquelle des enfants sont intentionnellement intimidés, harcelés ou maltraités.

Notre étude visait principalement à déterminer les indicateurs de risque, ajustés et non ajustés, associés à l'intimidation physique. Notre deuxième objectif était de clarifier les répercussions des brimades physiques répétées sur les résultats de santé – à savoir, l'humeur dépressive.

Méthode : Nous avons demandé à tous les élèves de la 5e à la 8e année fréquentant les écoles de la ville de Saskatoon, au Canada, de remplir le questionnaire Saskatoon School Health Survey.

Résultats : En tout, 4 197 jeunes ont rempli le questionnaire; 23 % d'entre eux ont déclaré avoir subi des brimades physiques au moins une fois ou deux au cours des quatre semaines précédentes.

Après l'apport d'ajustements multivariés, les covariables indépendamment associées au fait d'être victime d'intimidation physique étaient le sexe masculin (RC=1,39), la fréquentation d'une école de quartier à faible revenu (RC=1,41), une vie malheureuse à la maison (RC=1,19), les nombreuses disputes avec les parents (RC=1,16) et l'envie de quitter la maison (RC=1,23).

Les enfants qui subissaient des brimades physiques répétées étaient plus susceptibles d'avoir de mauvais résultats de santé. Par exemple, 37,3 % des enfants physiquement intimidés plusieurs fois par semaine étaient d'humeur dépressive, contre seulement 8,1 % des enfants n'ayant jamais subi de brimades. Après l'analyse de régression, les enfants qui avaient subi des brimades physiques étaient 0,8 fois plus susceptibles d'être d'humeur dépressive.

Conclusion : La plupart des indicateurs de risque indépendamment associés à l'intimidation physique sont évitables par l'application de politiques sociales appropriées et de mesures de soutien familial. Il semble aussi qu'il faudrait axer les interventions sur la prévention de l'intimidation répétée plutôt que sur l'intimidation occasionnelle.

Mots clés : indicateurs de risque; intimidation; adolescents