

## Effects of Bullying on the Developing Person



Children's Mental Health Ontario  
Santé mentale pour enfants Ontario

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## Scope of the Problem

- 20% of children and youth have serious mental health (MH) and learning problems
- 10% of children and youth have problems that are chronic and lead to significant impairment in school, home and in the community
- Only 1 in 6 of those with MH problems receive services, those services are often not evidence-based (Evidence-Practice Gap)
- Parents, teachers and primary care providers often do not recognize MH problems in children and youth

## Long-Term Outcome of MH

- MH problems account for at least 20% of the burden of physical illness and disability in adults
- Of the 10 leading causes of disability in adulthood, 7 are MH issues
- MH, educational under-achievement and physical problems occur together
- 50% of all adult MH disorders begin before 15 years of age

## Mental Health and Violence against Children



### UN World Report on Violence against Children (2006)

- "...persistent social acceptance of some types of violence against children..."
- "...corporal punishment and other forms of cruel or degrading punishment, bullying and sexual harassment, and a range of violent traditional practices may be perceived as normal, particularly when no lasting visible physical injury results."
- Peer rejection and victimization has a significant negative impact
- Research points to the fact that for many, peer problems cause MH issues

## Bullying

- A person is being bullied if he or she is exposed repeatedly and over time, to negative actions on the part of one or more persons.

### DEFINITION OF BULLYING

For the purposes of developing and implementing policies on bullying prevention and intervention, boards will use the following definition of *bullying*:

Bullying is typically a form of repeated, persistent, and aggressive behaviour directed at an individual or individuals that is intended to cause (or should be known to cause) fear and distress and/or harm to another person's body, feelings, self-esteem, or reputation. Bullying occurs in a context where there is a real or perceived power imbalance.

## Bullying takes many forms

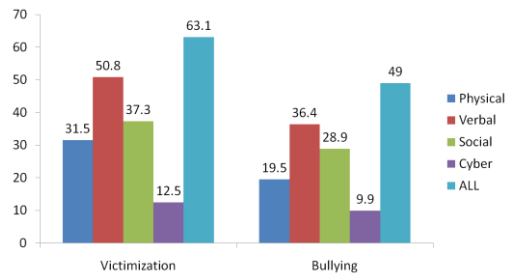
- Also called harassment and includes...

- Physical
- Verbal
- Social
- Cyber
- Racial
- Sexual



## Prevalence: Ontario

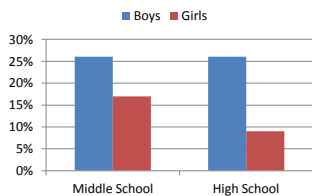
N=16,879 students in grades 4 to 12



Vaillancourt et al., 2010a and 2010b

## Homophobic Bullying

Bullied Others using Homophobic Taunting



- Bullying and homophobia perpetration ( $r = .61$ )

Koenig & Espelage, 2003; Potrat & Espelage, 2005

## “Better Dead than Gay”

- Gay youth are 4 times more likely to attempt suicide than straight youth (Garofalo, et al., 1999; Howard, 1998)

TABLE 1—The Prevalence and Odds of Suicide Risk in Adolescent Males and Females According to Sexual Orientation: Minnesota Public School Survey, Grades 7 through 12, 1987

Suicide Variable	Bisexual/Homosexual		Heterosexual		OR <sup>b</sup>	95%CI
	No. <sup>a</sup>	%	No. <sup>a</sup>	%		
<b>Males</b>						
Ideation	173	31.2	164	20.1*	1.61	0.94, 2.78
Attempts	178	28.1	168	4.2***	7.10	3.05, 16.53
Intent	173	14.5	164	4.3***	3.61	1.40, 9.36
<b>Females</b>						
Ideation	165	36.4	143	34.3	1.09	0.67, 1.78
Attempts	166	20.5	145	14.5	1.50	0.81, 2.75
Intent	165	9.7	142	6.3	1.67	0.66, 4.07

Note: OR = odds ratio; CI = confidence interval.

<sup>a</sup>Number of respondents; numbers varied owing to missing data.

<sup>b</sup>Odds ratio associated with homosexuality, adjusted for race in females and socioeconomic status in males.

\* $P < .05$ ; \*\* $P < .0015$ ; \*\*\* $P < .00001$ .

Remafedi et al., 1998



## Need to belong is so strong that...

- Being rejected by a deplorable, loathed group like the Klu Klux Klan is perceived as hurtful to people who are not part of, nor condone, such a group

## The priority of relationships

- Social ties are not just a luxury, but rather are essential for optimal development
- Evidence from social deprivation...
  - Isolating people from others

## United Nation Convention Against Torture

- "...torture means any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession, punishing him for an act he or a third person has committed, intimidating or intimidating a person, or for any reason based on discrimination of any kind, when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity. It does not include pain or suffering arising only from, inherent in or incidental to lawful sanctions".

Extended solitary confinement  
Shunning

## Infant Mortality



## NYC vs. Bellevue

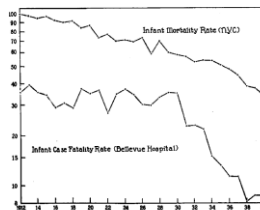


Fig. 8.—The case fatality of infants under 1 year of age in the children's medical service of Bellevue Hospital, 1912 to 1940. The upper curve represents the infant mortality rate for New York city (deaths of infants under 1 year per thousand births). The lower curve represents the infant case fatality rate at Bellevue Hospital (deaths of infants under 1 year per hundred admissions). The curves are plotted logarithmically so that the rates of fall can be compared.

## Rene Spitz (1887-1974)

- Issues of social deprivation best illustrated by documentary film of Mexican Foundling Homes
  - Kids resembled concentration camp victims
  - Behavior was consistent with what is seen in autism
  - Scientific community went nuts
    - Biases sample
    - Small sample size



## Harry Harlow (1905-1981)

- Interested in love
- Studied maternal deprivation



Protest → Despair → Detachment  
(Hinde)

## Attachment

- Continuous process
  - Parental
  - Siblings
  - Teachers
  - Peers
- Sets the stage for other social relationships
  - Prototype

21 August 1959, Volume 130, Number 3373

## SCIENCE

### CURRENT PROBLEMS IN RESEARCH

### Affectional Responses in the Infant Monkey

Orphaned baby monkeys develop a strong and persistent attachment to inanimate surrogate mothers.

Harry F. Harlow and Robert R. Zimmermann

preconceived theoretical framework. An exception to the above generalization is seen in the recent attempt by Bowlby (11) to analyze and integrate the available observational and experimental evidence derived from both human and subhuman infants. Bowlby has concluded that a theory of component instinctual responses, species specific, can best account for the infant's tie to the mother. He suggests that the species-specific responses for human beings (some of these responses are not strictly limited to human beings) include contact, clinging, sucking, crying, smiling, and following. He further emphasizes that these responses are manifested independently of primary drive reduction in human and subhuman infants.



## Beyond Caregiver Attachment

- Juvenile monkeys thrived when raised among family and peers
  - NOT when isolated from either during infancy, especially not when isolated from peers

- Relationships are essential for optimal development.
  - Although parent-child attachment was important, for Harlow's monkeys peer relationships were critical in order to flourish



## Importance of Peers

- Parents are often primary source of social/emotional support for young children, BUT as children age, peer group becomes ↑ important.
- Peers provide an important context for social-emotional and cognitive development.



### UN World Report on Violence against Children (2006)

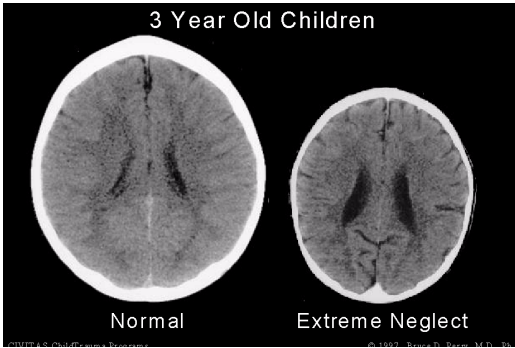
- "...persistent social acceptance of some types of violence against children..."
- "...corporal punishment and other forms of cruel or degrading punishment, bullying and sexual harassment, and a range of violent traditional practices may be perceived as normal, particularly **when no lasting visible physical injury results.**"

Sticks and stones may break my bones but words will never hurt me.

SAYS WHO????



- Studies show that people can relive and re-experience social pain more easily than physical pain and the emotions they feel are more intense and painful.
  - Chen, Williams, Fitness, Newton, 2008
- It seems that physical pain is often short lived whereas social pain can last a life time.
- Vaillancourt et al. (2010a, 2010b) suggest, understanding biological underpinnings of peer relations helps legitimize the plight of peer-abused children and youth
- Encouraging policy makers and practitioners to prioritize the reduction of school bullying



## Insight from Neuroscience

- “Criticism may not be agreeable, but it is necessary. It fulfills the same function as pain in the human body. It calls attention to an unhealthy state of things”  
– Sir Winston Churchill (1874-1965)



doi:10.1093/scans/nqz007

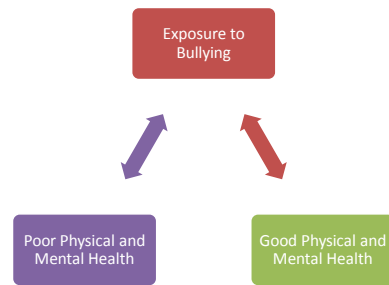
SCAN (2019) 4:143-157

### Neural correlates of social exclusion during adolescence: understanding the distress of peer rejection

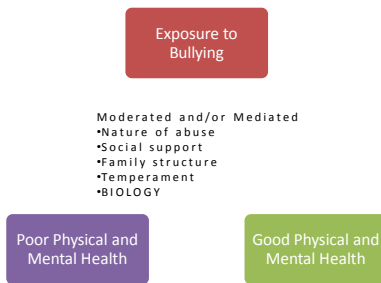
Recent neuroimaging studies have shown that parts of the cortical physical pain network are also activated when a person is socially excluded  
Physical & social pain share similar neural structures  
Linked to evolution  
↑ survival among mammalian species

Keywords: peer rejection; adolescence; functional magnetic resonance imaging

## Divergent Pathways



## Divergent Pathways

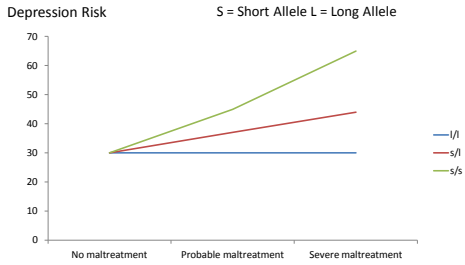


## Influence of Life Stress on Depression: Moderation by a Polymorphism in the 5-HTT Gene

Avshalom Caspi,<sup>1,2</sup> Karen Sugden,<sup>1</sup> Terrie E. Moffitt,<sup>1,2\*</sup> Alan Taylor,<sup>1</sup> Ian W. Craig,<sup>1</sup> Honalee Harrington,<sup>2</sup> Joseph McClay,<sup>1</sup> Jonathan Mill,<sup>1</sup> Judy Martin,<sup>3</sup> Antony Braithwaite,<sup>4</sup> Richie Poulton<sup>3</sup>

In a prospective-longitudinal study of a representative birth cohort, we tested why stressful experiences lead to depression in some people but not in others. A functional polymorphism in the promoter region of the serotonin transporter (5-HTT) gene was found to moderate the influence of stressful life events on depression. Individuals with one or two copies of the short allele of the 5-HTT promoter polymorphism exhibited more depressive symptoms, diagnosable depression, and suicidality in relation to stressful life events than individuals homozygous for the long allele. This epidemiological study thus provides evidence of a gene-by-environment interaction, in which an individual's response to environmental insults is moderated by his or her genetic makeup.

**Serotonin Gene, Experience, and Depression: Age 26**  
 Caspi et al., Science, 18 July 2003, Vol 301



*Development and Psychopathology* 20 (2008), 455-471  
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 Printed in the United States of America  
 DOI: 10.1017/S0954579408000229

**Gene-environment interaction between peer victimization and child aggression**

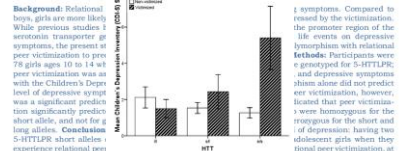
“Genetic modeling showed that peer victimization is an environmentally driven variable that is unrelated to children’s genetic disposition.”

**Abstract**  
 Although peer victimization places children at serious risk for aggressive behavior, not all victimized children are aggressive. The diathesis-stress hypothesis of disease proposes that an environmental stressor such as peer victimization should lead to maladjustment mostly in those individuals with preexisting genetic vulnerabilities. Accordingly, this study examined whether the link between peer victimization and child aggression is moderated by children’s genetic risk for such behavior. Using a sample of 506 6-year-old twins, peer victimization was assessed through peer nominations and aggressive behavior was assessed through peer and teacher reports. Children’s genetic risk for aggression was estimated as a function of their co-twin’s aggression and the pair’s zygosity. Genetic modeling showed that peer victimization is an environmentally driven variable that is unrelated to children’s genetic disposition. Results also provided support for the notion of a gene-environment interaction between peer victimization and child’s genetic risk for aggressive behavior, albeit only in girls. For boys, peer victimization was related to aggression regardless of the child’s genetic risk for such behavior. Different socialization experiences in girls’ compared to boys’ peer groups may explain the different pattern of results for girls and boys.

**5-HTTLPR moderates the effect of relational peer victimization on depressive symptoms in adolescent girls**

Corina Benjet,<sup>1</sup> Renee J. Thompson,<sup>2</sup> and Ian H. Gotlib<sup>1</sup>

<sup>1</sup>National Institute of Psychiatry (Instituto de Psiquiatria), de la Facultad de Medicina, UNAM, Mexico & Department of Psychology, Stanford University, USA



**Figure 1** Depressive symptoms by genotype and relational peer victimization group. Note. l/l = homozygous for long allele, s/l = heterozygous for short and long allele, s/s = homozygous for short allele. \* $p < .05$ , \*\* $p < .01$ .

**Beyond the vulnerability of genes...**

- Peer victimization changes the function (and structure?) of the developing child’s brain

**Model Building (1)**



• Longitudinal studies have shown that peer victimization causes maladjustment which includes depression  
 e.g., Arseneault et al., 2006; Kim et al., 2006; Kumplainen & Rasanen, 2006; Sourander et al., 2006

**Model Building (2)**



• Causal link is consistent with literature on depression  
 e.g., Duggal et al., 2000; Goodyer, et al., 1985; Kaufman, 1991; Williamson et al., 1998

### Model Building (3)



•Relationship b/w victimization and dysregulation of the HPA axis estimated via the stress hormone cortisol  
 e.g., Kliewer, 2006; Knack et al., 2011; Vaillancourt et al., 2008, 2011

AGGRESSIVE BEHAVIOR  
 Volume 34, pages 294-305 (2008)

### Variation in Hypothalamic-Pituitary-Adrenal Axis Activity Among Bullied and Non-bullied Children

Tracy Vaillancourt<sup>1\*</sup>, Eric Duku<sup>2</sup>, Denys Decatanzaro<sup>1</sup>, Harriet Macmillan<sup>3,4</sup>, Cameron Muir<sup>4</sup>, and Louis A. Schmidt<sup>1</sup>

<sup>1</sup>Department of Psychology, Neuroscience & Behaviour, McMaster University, Hamilton, Ontario;  
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<sup>3</sup>Department of Pediatrics;  
<sup>4</sup>Department of Psychology

Bullied girls ↓ cortisol

Bullied boys ↑cortisol

We examined the relationship between peer victimization and hypothalamic-pituitary-adrenal (HPA) axis activity in middle- to late elementary school children. Saliva samples were collected during a laboratory visit. After controlling for age, gender, and cortisol circadian rhythm, we found that bullied girls had lower cortisol levels than nonbullied girls, whereas bullied boys had higher cortisol levels than nonbullied boys. The present study highlights the need to consider the plight of peer-victimised children, as it is associated with alterations to the HPA axis that affect males and females differently, and that it diminishes a person's ability to cope with stress, possibly placing them at risk for psychopathology and ill health. *Aggr. Behav.* 34:294-305, 2008. © 2007 Wiley-Liss, Inc.

Keywords: bullying; HPA axis; cortisol; children; multilevel modeling; sex differences

### A Discordant Monozygotic Twin Design Shows Blunted Cortisol Reactivity Among Bullied Children

Isabella Ouellet-Morin, Ph.D., Andrea Danese, M.D., Ph.D., Lucy Bowes, Ph.D., Sonia Shakoor, M.Sc., Antony Ambler, M.Sc., Carmine M. Pariante, M.D., M.Ch., Ph.D., Andrew S. Papadopoulos, Ph.D., Avshalom Caspi, Ph.D., Terrie E. Moffitt, Ph.D., Louise Arseneault, Ph.D.

Objective: Childhood adverse experiences are known to engender persistent changes in stress-related systems and brain structures involved in mood, cognition, and behavior in animal models. This study examined whether blunted cortisol reactivity is a neuroendocrine marker of childhood adversity.

“Results from this natural experiment provide support for a causal effect of adverse childhood experiences on the neuroendocrine response to stress”.

patterns of cortisol secretion after the PST. Specifically, bullied twins exhibited a blunted cortisol response compared with their nonbullied MZ co-twins, who showed the expected increase. This difference in cortisol response to stress could not be attributed to children's genetic makeup, their familial environments, pre-existing and concomitant individual factors, or the perception of stress and emotional response to the PST. Conclusion: Results from this natural experiment provide support for a causal effect of adverse childhood experiences on the neuroendocrine response to stress. *J. Am. Acad. Child Adolesc. Psychiatry.* 2011;50(6):574-582. Key words: early-life stress, cortisol, HPA axis, discordant MZ twin design, bullying

JOURNAL OF THE AMERICAN ACADEMY OF CHILD & ADOLESCENT PSYCHIATRY  
 VOLUME 50 NUMBER 6 JUNE 2011

### Model Building (4)



•Depression also linked to HPA dysregulation— ↑ cortisol  
 e.g., Holsboer, 1995; Markopoulou et al., 2009; Stoke & Sikes, 1987; see McEwen 2003 for review).

### Model Building (5)

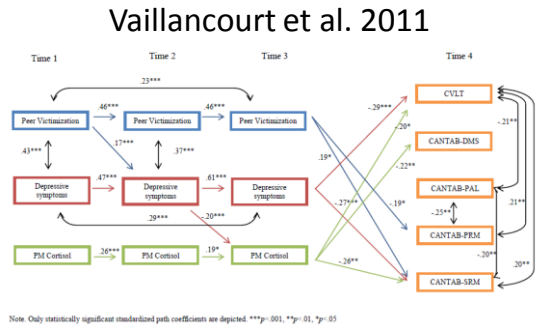
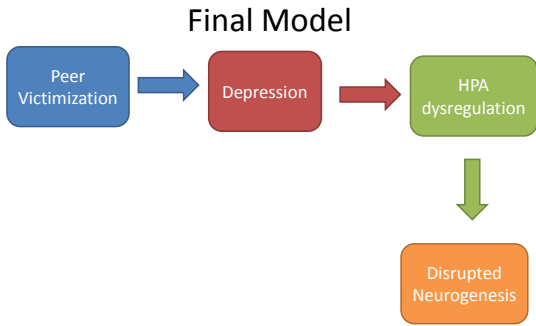


•Link b/w depression and stress-related structural and functional brain changes  
 e.g., Horna et al., 1997; Leon-Carrion et al., 2009; Michopoulos et al., 2008

### Model Building (6)



•Animal studies clearly demonstrated that excessive exposure to GCs leads to structural changes in the brain which includes neural cell death  
 •Cortisol binds to GC receptors



## Conclusion

- Preventive efforts to end bullying in schools and communities must be accelerated.

## Program for International Student Assessment (PISA)

- Science 3<sup>rd</sup>
  - Finland, Hong-Kong – China
- Reading 4<sup>th</sup>
  - Korea, Finland, Hong-Kong – China
- Mathematics 7<sup>th</sup>
  - Chinese Taipei, Finland, Hong-Kong – China, Korea, Netherlands, Switzerland

## UNICEF Report Card 7

- The true measure of a nation's standing is how well it attends to its children – their health and safety, their material security, their education and socialization, and their sense of being loved, valued, and included in the families and societies into which they are born.
  - Child poverty in perspective: An overview of child well-being in rich countries

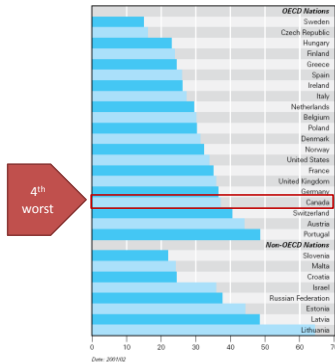


The chart below presents the findings of this Report Card in summary form. Countries are listed in order of their average rank for the six dimensions of child well-being that have been assessed. A light blue background indicates a place in the top-third of the table; mid-blue denotes the middle third and dark blue the bottom third.

Dimensions of child well-being	Average ranking position (for all 6 dimensions)	Dimension 1 Material well-being	Dimension 2 Health and safety	Dimension 3 Educational well-being	Dimension 4 Family and peer relationships	Dimension 5 Behaviours and risks	Dimension 6 Subjective well-being
Netherlands	4.2	10	2	6	3	3	1
Sweden	5.0	11	1	5	16	1	7
Denmark	7.2	4	4	8	9	6	12
Finland	7.5	3	3	4	17	7	11
Spain	8.0	12	6	16	6	5	2
Switzerland	8.3	5	9	14	4	12	6
Norway	8.7	2	8	11	10	13	8
Italy	10.0	14	5	20	1	10	10
Ireland	10.2	19	19	7	7	4	5
Belgium	10.7	7	16	1	5	19	16
Germany	11.2	13	11	10	13	11	9
Canada	11.8	6	13	2	16	17	16
Greece	11.8	16	16	16	11	8	3
Poland	12.3	21	15	3	14	2	19
Czech Republic	12.5	11	10	9	19	9	17
France	13.0	9	7	18	12	14	18
Portugal	13.7	16	14	21	2	15	14
Austria	15.8	8	20	16	16	16	4
Hungary	14.5	20	17	13	4	18	13
United States	18.0	17	21	12	20	20	-
United Kingdom	18.2	18	12	17	21	21	20

OECD countries with insufficient data to be included in the overview: Australia, Iceland, Japan, Luxembourg, Mexico, New Zealand, the Slovak Republic, South Korea, Turkey.

Figure 5.3b Percentage of young people age 11, 13 and 15 who report being bullied in the previous 2 months



## What can we do to reduce bullying?

We need to appreciate that all children are capable of bullying

- Cannot change what we don't acknowledge

## Silence is complicity

- History is replete of such examples...
  - Recent teen suicides
  - Penn State (Jerry Sandusky): **Penn State's Massive Moral Failure to Put the Most Vulnerable First Instead of Last**



BUT when bystanders intervene bullying stops; almost always (and immediately). Why?

- Need to belong is a fundamental human motivator
- Wired to belong

## Bystanders

- Peers are present in over 85% of the bullying incidents
  - Yet only intervene about 11% of the time ☹ (but in another study 25% of time ☺)
- Peers who regularly see hostile exchanges without sanction are exposed to example of aggression working
  - They see powerful individuals reinforced
  - They see that the aggressor is rarely admonished by the peer group and rarely caught by adults

Craig & Pepler, 1995, 1997; Hawkins et al., 2001; Vaillancourt et al., 2009

## Involve bystanders

- Peer mediation is the most promising approach to reducing bullying
  - Engages students in prosocial behaviour
  - Teaches them conflict resolution skills
  - Increases playground supervision
  - AND is evidence-based

## Increase Monitoring

Journal of School Psychology, 51(2), 101–108, 2012  
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DOI: 10.1080/00220272.2012.657174



### A Qualitative Analysis of the Bullying Prevention and Intervention Recommendations of Students in Grades 5 to 8

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*Purpose:* grade explored the bullying prevention suggestions of 62 Grade 5 to 8 students. Discussions were structured and analyzed thematically. Students advocated a comprehensive approach including: improved supervision, playground activities, group monitoring to prevent social isolation, influential prevention practices with parents, school/parental presence, and meaningful consequences. In addition, students suggested that parents should improve relationships with their children.

- Students suggest this point as well
- Places to Avoid Study



## Places to Avoid: Population-Based Study of Student Reports of Unsafe and High Bullying Areas at School

Canadian Journal of School Psychology, 51(1), 46–54  
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DOI: 10.1177/0886260510380866  
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Tracy Vaillancourt,<sup>1,2</sup> Heather Brittain,<sup>2</sup> Lindsay Bennett,<sup>2</sup> Steven Arnocky,<sup>2</sup> Patricia McDougall,<sup>2</sup> Shelley Hymel,<sup>1</sup> Kathy Short,<sup>2</sup> Shaik Sunderani,<sup>2</sup> Carol Scott,<sup>2</sup> Meredith Mackenzie,<sup>2</sup> and Lesley Cunningham<sup>1</sup>

### Abstract

Students' perceptions of school safety and experiences with bullying were examined in a large Canadian cohort of 5,493 girls and 5,659 boys in Grades 4 to 12. Results indicate notable differences in when and where students felt safe based on their own perceptions of safety and their own experiences with bullying, particularly across elementary and secondary schools. For elementary students, especially those involved in bullying, the playground/school yard and outside recess/break time were particularly hazardous, whereas for secondary students involved in bullying, the hallways, school lunchroom/cafeteria, and outside recess/break were considered especially dangerous. The commonality across student-identified unsafe areas is that they tend to not be well supervised by school personnel. Accordingly, the present results underscore the need to increase adult supervision in areas in which an overwhelming majority of students report feeling unsafe.

Bullying occurs most frequently in:

- playground (ES)
- halls (HS)
- cafeteria (HS)
- outside recess (HS)

## Encourage children to report bullying

- When children tell bullying ↓
  - Recall reporting obligations of Bill 157
- How?
  - Can download a letter to adults ([www.prevnet.ca](http://www.prevnet.ca))
  - Create a anonymous reporting website
    - Recognizing that it will be misused so safeguards need to be in place
  - Be available; ask children about their peer relations; know their friends; and monitor as well

## Work in partnership

- Bullying is not a school problem, it's a community issue.