Bullying and mental health: How peer victimization gets under the skin

uOttawa

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Prevalence of MH Disorders in Children and Adolescents

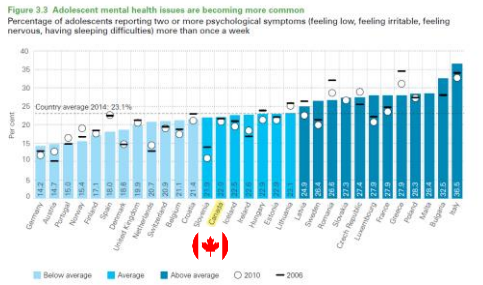
- ☑ 13.4% = Worldwide
  - Polanczyk et al., 2015
- ☑ 15-20% = Economically advanced countries
  - Vaillancourt & Boylan, 2018

National Comorbidity Survey

- 10,123 13 to 18 year-olds
  - Anxiety disorders = 31.9%
  - Behaviour disorders = 19.1%
  - Mood disorders = 14.3%
  - Substance use disorders = 11.4%
  - With severe impairment &/or distress = **22.2%**

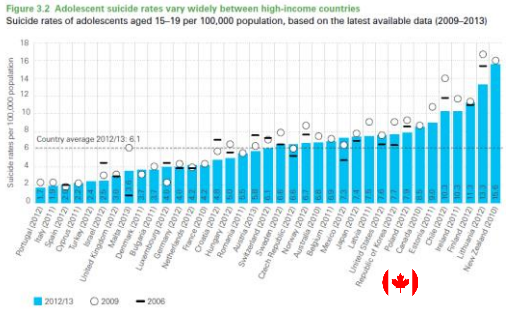
Merikangas et al., 2010

"Adolescent mental health is a growing concern"



UNICEF (2017)

☑ Suicide— leading cause of death among youth in high income countries
- 17.6% of all deaths
- Particular problem for boys



Enormous continuity

☑ 50-75% of adult MH disorders began in childhood

– Typically before age 15

Kim-Cohen et al., 2003; Kessler et al., 2001; 2007; Weisz, 1998

JAMA Psychiatry

Original Investigation

Adult Functional Outcomes of Common Childhood Psychiatric Problems

A Prospective, Longitudinal Study

William E. Copeland, PhD; Dieter Wolke, PhD; Lilly Shanahan, PhD; E. Jane Costello, PhD

JAMA Psychiatry. 2015;72(9):892-898. doi:10.1001/jamapsychiatry.2015.0730
Published online July 15, 2015.

Table 1. Definitions and Prevalence of Young Adult Outcomes

Domain	Definition	Prevalence,* %
Health		
Multiple psychiatric problems	Meeting full criteria for ≥2 different DSM disorders across all adult assessments	3.9
Multiple addictions	Meeting full criteria for DSM substance dependence for ≥2 substances across all adult assessments	5.3
Suicidality	Reporting recurrent thoughts of death (not just fear of dying), recurrent ideation, a suicide attempt, or specific plan for committing suicide	7.1
Serious physical event	Diagnosis with serious physical illness, involved in serious accident or death; physical illness and accidents had to involve risk of death or chronic disability	3.4
Legal		
Serious criminal activity	Official record of felony charge between 16 and 25 y	7.7
Incarceration	Participant reported time spent in jail or prison across adult assessments	3.3
Financial		
High-school dropout	Had not received high school diploma, equivalent degree, or GED by last adult assessment	12.4
Unable to keep job	Participant reported being fired from ≥3 jobs over the course of adult assessments	6.6
Residential instability	Moved ≥6 times in 5 y	5.2
Social		
Early parenthood	Participant reported becoming a parent prior to age of majority or legal adulthood (18 y)	4.6
No social support	Participant reported no best friend/confidante, little to no relationship with parents, and rare contact with peers across all adult assessments	3.0
Relational instability	Multiple divorces	4.8

Abbreviation: GED, General Education Development.
* All percentages are weighted.

Adults with childhood MH disorder

- 6x > to have at least 1 adverse adult outcome
- 9x > to have 2 or more

☑ MH problems in childhood and adolescence leading cause of health-related burden

– In adults, depression is the leading cause of disability worldwide

UNICEF, 2008; Whiteford et al., 2013

JAMA Psychiatry

Original Investigation | META-ANALYSIS

Mortality in Mental Disorders and Global Disease Burden Implications

A Systematic Review and Meta-analysis

Elizabeth Reisinger Walker, PhD, MPH, MAT; Robin E. McGee, MPH; Benjamin G. Druss, MD, MPH

14.3% of deaths worldwide or approx. 8 million deaths each year attributed to mental disorders

☑ Most youth with MH problems do not receive services

– Only 20% receive Tx they require

☑ Youth with severely impairing mental disorders received Tx at ◐ rates

– ADHD and behavioural disorders

Merikangas et al., 2011; Vaillancourt & Boylan, 2018

Call for action…

⇩ MH problems by ⇩ bullying

WHY?

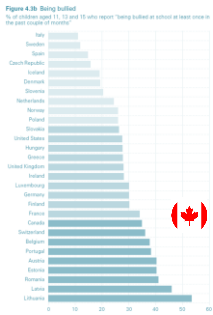
bullying ⇨ MH problems

What is bullying?

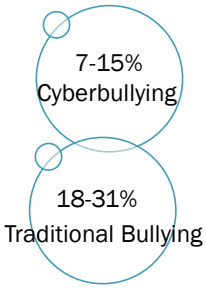
- A person is being bullied if he or she is exposed repeatedly and over time, to negative actions on the part of one or more persons.
  - Three Criteria:
    repeated over time
    imbalance of power
    intentionality
- Systematic abuse of power

Prevalence Rate

30% bullied occasionally
7-10% bullied ***on a daily basis***



Cook et al., 2010; Delfabbro et al., 2006; Gee & Cho, 2014; Olsen et al., 2014; UNICEF, 2013; Vaillancourt et al., 2010a, 2010b



National Academies of Sciences, Engineering, and Medicine, 2016

Link b/w bullying and MH

- MH profile of targets

- MH profile of perpetrators

Long-Term Adult Outcomes of Peer Victimization in Childhood and Adolescence

Pathways to Adjustment and Maladjustment

Patricia McDougall — *University of Saskatchewan*
Tracy Vaillancourt — *University of Ottawa*

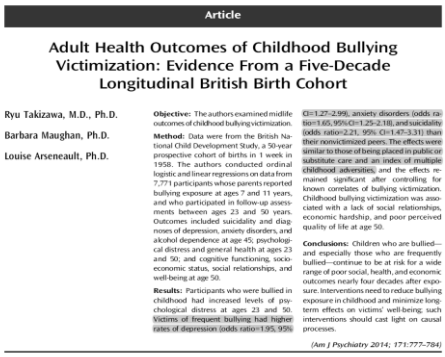
May–June 2015 • American Psychologist

Vol. 70, No. 4, 300–310 http://dx.doi.org/10.1037/a0039174

Long term consequences

- academic difficulties
- school truancy/avoidance
- increased absenteeism
- somatic complaints
- stress-related illness
- physical health problems
- low self-esteem
- depression
- social withdrawal/isolation
- social anxiety
- loneliness
- suicide
- aggressive behaviour

Bullied youth either get mad or they get sad.



Article

Adult Health Outcomes of Childhood Bullying Victimization: Evidence From a Five-Decade Longitudinal British Birth Cohort

Ryu Takizawa, M.D., Ph.D.
Barbara Maughan, Ph.D.
Louise Arseneault, Ph.D.

Objective: The authors examined midlife outcomes of childhood bullying victimization.

Method: Data were from the British National Child Development Study, a 50-year prospective cohort of births in 1 week in 1958. The authors conducted ordinal logistic and linear regressions on data from 7,771 participants whose parents reported bullying exposure at ages 7 and 11 years, and who participated in follow-up assessments between ages 23 and 50 years. Outcomes included suicidality and diagnoses of depression, anxiety disorders, and alcohol dependence at age 45; psychological distress and general health at ages 23 and 50; and cognitive functioning, socioeconomic status, social relationships, and well-being at age 50.

Results: Participants who were bullied in childhood had increased levels of psychological distress at ages 23 and 50. Victims of frequent bullying had higher rates of depression (odds ratio=1.95, 95% CI=1.27–2.99), anxiety disorders (odds ratio=1.65, 95% CI=1.25–2.18), and suicidality (odds ratio=2.21, 95% CI=1.47–3.31) than their nonvictimized peers. The effects were similar to those of being placed in public or substitute care and an index of multiple childhood adversities, and the effects remained significant after controlling for known correlates of bullying victimization. Childhood bullying victimization was associated with a lack of social relationships, economic hardship, and poor perceived quality of life at age 50.

Conclusions: Children who are bullied—and especially those who are frequently bullied—continue to be at risk for a wide range of poor social, health, and economic outcomes nearly four decades after exposure. Interventions need to reduce bullying exposure in childhood and minimize long-term effects on victims' well-being; such interventions should cast light on causal processes.

(Am J Psychiatry 2014; 171:777–784)

Adult mental health consequences of peer bullying and maltreatment in childhood: two cohorts in two countries

Lereya et al.

Summary

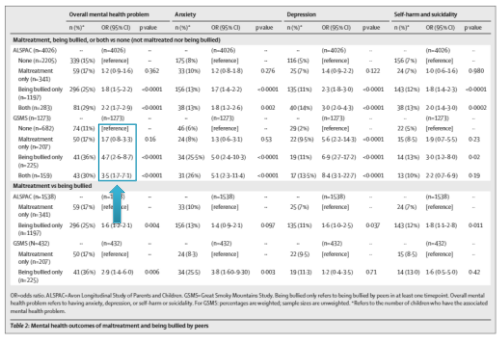
Background The adult mental health consequences of childhood maltreatment are well documented. Maltreatment by peers (ie, bullying) has also been shown to have long-term adverse effects. We aimed to determine whether these effects are just due to being exposed to both maltreatment and bullying or whether bullying has a unique effect.

Methods We used data from the Avon Longitudinal Study of Parents and Children in the UK (ALSPAC) and the Great Smoky Mountains Study in the USA (GSMS) longitudinal studies. In ALSPAC, maltreatment was assessed as physical, emotional, or sexual abuse, or severe maladaptive parenting (or both) between ages 8 weeks and 8·6 years, as reported by the mother in questionnaires, and being bullied was assessed with child reports at 8, 10, and 13 years using the previously validated Bullying and Friendship Interview Schedule. In GSMS, both maltreatment and bullying were repeatedly assessed with annual parent and child interviews between ages 9 and 16 years. To identify the association between maltreatment, being bullied, and mental health problems, binary logistic regression analyses were run. The primary outcome variable was overall mental health problem (any anxiety, depression, or self-harm or suicidality).

Findings 4026 children from the ALSPAC cohort and 1420 children from the GSMS cohort provided information about bullying victimisation, maltreatment, and overall mental health problems. The ALSPAC study started in 1991 and the GSMS cohort enrolled participants from 1993. Compared with children who were not maltreated or bullied, children who were only maltreated were at increased risk for depression in young adulthood in models adjusted for sex and family hardships according to the GSMS cohort (odds ratio [OR] 4·1, 95% CI 1·5–11·7). According to the ALSPAC cohort, those who were only being maltreated were not at increased risk for any mental health problem compared with children who were not maltreated or bullied. By contrast, those who were both maltreated and bullied were at increased risk for overall mental health problems, anxiety, and depression according to both cohorts and self-harm according to the ALSPAC cohort compared with neutral children. Children who were bullied by peers only were more likely than children who were maltreated only to have mental health problems in both cohorts (ALSPAC OR 1·6, 95% CI 1·1–2·2; p=0·005; GSMS 3·8, 1·8–7·9, p<0·0001), with differences in anxiety (GSMS OR 4·9; 95% CI 2·0–12·0), depression (ALSPAC 1·7, 1·1–2·7), and self-harm (ALSPAC 1·7, 1·1–2·6) between the two cohorts.

Interpretation Being bullied by peers in childhood had generally worse long-term adverse effects on young adults' mental health. These effects were not explained by pub-victimisation. The findings have important implications for public health planning and service development for dealing with peer bullying.

Funding Wellcome Trust, Medical Research Council, Economic and Social Research Council, National Institute of Mental Health, the National Institute on Drug Abuse, NARSAD (Early Career Award), and the William T Grant Foundation.



	Overall mental health problem			Anxiety			Depression			Self-harm and suicidality		
	n (%)*	OR (95% CI)	p value	n (%)*	OR (95% CI)	p value	n (%)*	OR (95% CI)	p value	n (%)*	OR (95% CI)	p value
Maltreatment, being bullied, or both vs none (not maltreated nor being bullied)												
ALSPAC (n=4026)	–	(n=4026)	–	–	(n=4026)	–	–	(n=4026)	–	–	(n=4026)	–
None (n=2395)	339 (15%)	[reference]	–	175 (8%)	[reference]	–	116 (5%)	[reference]	–	156 (7%)	[reference]	–
Maltreatment only (n=341)	59 (17%)	1·2 (0·9–1·6)	0·362	33 (10%)	1·2 (0·8–1·8)	0·276	25 (7%)	1·4 (0·9–2·2)	0·122	24 (7%)	1·0 (0·6–1·6)	0·980
Being bullied only (n=1197)	296 (25%)	1·8 (1·5–2·2)	<0·0001	156 (13%)	1·7 (1·4–2·2)	<0·0001	135 (11%)	2·3 (1·8–3·0)	<0·0001	143 (12%)	1·8 (1·4–2·3)	<0·0001
Both (n=283)	83 (29%)	2·2 (1·7–2·9)	<0·0001	38 (13%)	1·8 (1·2–2·6)	0·002	40 (14%)	3·0 (2·0–4·3)	<0·0001	38 (13%)	2·0 (1·4–3·0)	0·0002
GSMS (n=1273)	–	(n=1273)	–	–	(n=1273)	–	–	(n=1273)	–	–	(n=1273)	–
None (n=682)	74 (11%)	[reference]	–	46 (6%)	[reference]	–	29 (2%)	[reference]	–	22 (5%)	[reference]	–
Maltreatment only (n=197)	50 (17%)	1·7 (0·8–3·3)	0·16	24 (8%)	1·3 (0·6–3·1)	0·53	22 (9·5%)	5·6 (2·2–14·3)	<0·0001	35 (8·5)	1·9 (0·7–5·5)	0·23
Being bullied only (n=225)	43 (36%)	4·7 (2·6–8·7)	<0·0001	34 (25·5%)	5·0 (2·4–10·3)	<0·0001	19 (11%)	6·9 (2·7–17·2)	<0·0001	14 (13%)	3·0 (1·2–8·0)	0·02
Both (n=153)	43 (30%)	3·5 (1·7–7·1)	<0·0001	33 (26%)	5·1 (2·3–11·4)	<0·0001	17 (13·5%)	8·4 (3·1–22·7)	<0·0001	13 (10%)	2·2 (0·7–6·9)	0·19
Maltreatment vs being bullied												
ALSPAC (n=3538)	–	(n=3538)	–	–	(n=3538)	–	–	(n=3538)	–	–	(n=3538)	–
Maltreatment only (n=341)	59 (17%)	[reference]	–	33 (10%)	[reference]	–	25 (7%)	[reference]	–	24 (7%)	[reference]	–
Being bullied only (n=1197)	296 (25%)	1·6 (1·2–2·1)	0·004	156 (13%)	1·4 (0·9–2·1)	0·097	135 (11%)	1·6 (1·0–2·5)	0·03†	143 (12%)	1·8 (1·1–2·8)	0·011
GSMS (N=432)	–	(n=432)	–	–	(n=432)	–	–	(n=432)	–	–	(n=432)	–
Maltreatment only (n=202)	50 (17%)	[reference]	–	24 (8·1)	[reference]	–	22 (9·5)	[reference]	–	35 (8·5)	[reference]	–
Being bullied only (n=225)	43 (36%)	2·9 (1·4–6·0)	0·006	34 (25·5)	3·8 (1·60–9·30)	0·003	19 (11·1)	1·2 (0·4–3·5)	0·71	14 (13·0)	1·6 (0·5–5·0)	0·42

OR=odds ratio. ALSPAC=Avon Longitudinal Study of Parents and Children. GSMS=Great Smoky Mountains Study. Being bullied only refers to being bullied by peers in at least one timepoint. Overall mental health problem refers to having anxiety, depression, or self-harm or suicidality. For GSMS: percentages are weighted; sample sizes are unweighted. *Refers to the number of children who have the associated mental health problem.

Table 2: Mental health outcomes of maltreatment and being bullied by peers

Temporal Sequence

Bullied ➲ poor MH? ☑

Poor MH ➲ bullied ➲ poorer MH?

Internalizing Problems

- Peer victimization linked to ↑ internalizing problems in ensuing years

Arseneault et al., 2006; Faris & Felmlee, 2014; Goodman et al., 2001; Hanish & Guerra, 2002; Hodges et al., 1999; Hodges & Perry, 1999; Kumpulainen & Rasanen, 2000; Krygsman & Vaillancourt, 2017; Lee & Vaillancourt, 2018; Schwartz et al., 2005; Snyder et al., 2003; Sweeting et al., 2006; Troop-Gordon & Ladd, 2005; Vaillancourt et al., 2011, 2013; Zwierzynska et al., 2012; see also meta-analyses by Reijntjes et al., 2010; Ttofi et al., 2011

Do the victims of school bullies tend to become depressed later in life? Yes
A systematic review and meta-analysis of longitudinal studies

Maria M. Ttofi, David P. Farrington, Friedrich Lösel and Rolf Loeber

Maria M. Ttofi, David P. Farrington and Friedrich Lösel are based at the Institute of Criminology, Cambridge University, Cambridge, UK. Rolf Loeber is based at the Western Psychiatric Institute and Clinic, University of Pittsburgh, Pittsburgh, Pennsylvania, USA.

Abstract

Purpose – *The purpose of this paper is to investigate the extent to which bullying victimization in school predicts depression in later life and whether this relation holds after controlling for other major childhood risk factors.*

Design/methodology/approach – *As no previous systematic review has been conducted on this topic, effect sizes are based on both published and unpublished studies: longitudinal investigators of 28 studies have conducted specific analyses for the authors' review.*

Findings – *The probability of being depressed up to 36 years later (mean follow-up period of 6.9 years) was much higher for children who were bullied at school than for non-involved students (odds ratio (OR) = 1.99; 95 per cent CI: 1.71-2.32). Bullying victimization was a significant risk factor for later depression even after controlling for up to 20 (mean number of six covariates) major childhood risk factors (OR = 1.74; 95 per cent CI: 1.54-1.97). Effect sizes were smaller when the follow-up period was longer and larger the younger the child was when exposed to bullying. Finally, the summary effect size was not significantly related to the number of risk factors controlled for.*

Originality/value – *Although causal inferences are tentative, the overall results presented in this paper indicate that bullying victimization is a major childhood risk factor that uniquely contributes to later depression. High quality effective anti-bullying programmes could be viewed as an early form of public health promotion.*

Keywords *Bullying, Schools, Adults, Depression*

Paper type *Research paper*

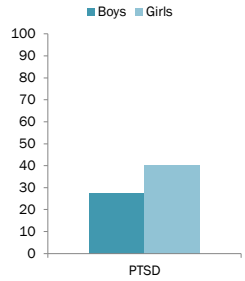
J Abnorm Child Psychol (2012) 40:901–911
DOI 10.1007/s10802-012-9620-0

Bullying and PTSD Symptoms

Thormod Idsoe · Atle Dyregrov · Ella Cosmovici Idsoe

Published online: 6 March 2012

Abstract PTSD symptoms related to school bullying have rarely been investigated, and never in national samples. We used data from a national survey to investigate this among students from grades 8 and 9 (n=963). The prevalence estimates of exposure to bullying were within the range of earlier research findings. Multinomial logistic regression showed that boys were 2.27 times more likely to be exposed to frequent bullying than girls. A latent variable second-order model demonstrated an association between frequency of bullying exposure and PTSD symptoms (beta=0.49). This relationship was not moderated by gender. However, the average levels of PTSD symptoms as well as clinical range symptoms were higher for girls. For all bullied students, 27.6% of the boys and 40.5% of the girls had scores within the clinical range. A mimic-model showed that youth who identify as being both a bully and a victim of bullying were more troubled than those who were victims only. Our findings support the idea that exposure to bullying is a potential risk factor for PTSD symptoms among students. Future research could investigate whether the same holds for PTSD through diagnostic procedures, but this will depend on whether or not bullying is decided to comply with the DSM-IV classification of trauma required for diagnosis. Results are discussed with regard to their implications for school interventions.



Externalizing Problems

- Peer victimization linked to ↑ externalizing problems in ensuing years
  - Barker et al., 2008; Haltigan & Vaillancourt, 2014; Hanish & Guerra, 2002; Ladd & Troop-Gordon, 2003; Smith et al., 2004; Vaillancourt et al., 2013; Yeung & Leadbeater, 2010; see also meta-analysis by Reijntjes et al., 2011

Target ➲ perpetrator

Developmental Psychology
2014, Vol. 50, No. 11, 2526–2538

0012-1649/14/$12.00 http://dx.doi.org/10.1037/a0038035

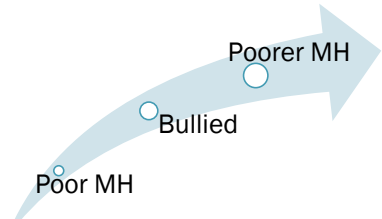
Joint Trajectories of Bullying and Peer Victimization Across Elementary and Middle School and Associations With Symptoms of Psychopathology

John D. Haltigan and Tracy Vaillancourt
University of Ottawa

The joint development of trajectories of bullying perpetration and peer victimization from Grade 5 to Grade 8 and concurrent and predictive associations with parent- and child-reported symptoms of psychopathology (anxiety, depression, attention-deficit/hyperactivity disorder, and somatization) were examined in a large sample (*N* = 693) of Canadian children. Dual trajectory modeling revealed four distinct subgroups of children: (a) those low in both bullying perpetration and peer victimization (low/limited involvement); (b) those with moderately increasing levels of involvement as bullying perpetrators and low levels of victimization (bullies); (c) those with low levels of bullying perpetration and moderate/decreasing levels of peer victimization (initial-declining victims); and (d) a victim-to-bully group characterized by increasing bullying perpetration and moderate decreasing victimization. Conditional probability results suggest that a pathway from peer victimization to involvement as bullying is more likely than a pathway from bullying perpetration to peer victimization. Children classified as the victim-to-bully and initial-declining victim groups showed more pervasive elevations in parent- and child-reported symptoms of psychopathology across elementary and middle school and in Grade 9 than individuals with limited involvement as bullying or peer victimization. Most associations with Grade 9 parent- and child-reported symptoms of psychopathology remained even after controlling for initial symptoms of psychopathology. Results are discussed in the context of extant taxonomies of involvement as bullying, the temporal relationship between bullying and victimization, and the increased mental health risk associated with both peer victims and bully–victims.

Keywords: bullying, peer victimization, trajectory modeling, symptoms of psychopathology

- But for some, the pathway is symptoms-driven



J Abnorm Child Psychol
DOI 10.1007/s10802-013-9781-5

Longitudinal Links Between Childhood Peer Victimization, Internalizing and Externalizing Problems, and Academic Functioning: Developmental Cascades

Tracy Vaillancourt · Heather L. Brittain · Patricia McDougall · Eric Duku

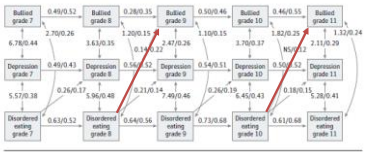
5 INT → 6 VIC → 7 INT → 8 VIC

JAMA Psychiatry | Original Investigation

Longitudinal Associations Among Bullying by Peers, Disordered Eating Behavior, and Symptoms of Depression During Adolescence

Kirsty S. Lee, PhD; Tracy Vaillancourt, PhD

Figure. Final Model (Model 3) of the Concurrent and Longitudinal Associations Among Bullying by Peers, Disordered Eating Behavior, and Depressive Symptoms



Within time, values before the forward slash represent covariance and values after the forward slash represent correlations (r), across time (ie, stability and cross-lag paths). values before the forward slash represent unstandardized coefficients (b) and values after the forward slash represent standardized coefficients (β). Pathways shown are statistically significant (P< .05). Nonsignificant (NS) variables remained in the model but are not displayed in the figure for ease of interpretation.

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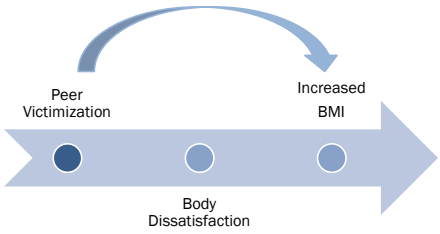
PAPER

WILEY Developmental Science

Body mass index, peer victimization, and body dissatisfaction across 7 years of childhood and adolescence: Evidence of moderated and mediated pathways

Kirsty S. Lee[1] | Tracy Vaillancourt[1,2]



MH profile of perpetrators

Research Article

aps ASSOCIATION FOR PSYCHOLOGICAL SCIENCE

Psychological Science
XX(X) 1–13

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pss.sagepub.com

SAGE

Impact of Bullying in Childhood on Adult Health, Wealth, Crime, and Social Outcomes

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[1]Department of Psychology and Division of Mental Health and Wellbeing, University of Warwick, and [2]Department of Psychiatry and Behavioral Sciences, Duke University Medical Center

Abstract
Bullying is a serious problem for schools, parents, and public-policymakers alike. Bullying creates risks of health and social problems in childhood, but it is unclear if such risks extend into adulthood. A large cohort of children was assessed for bullying involvement in childhood and then followed up in young adulthood in an assessment of health, risky or illegal behavior, wealth, and social relationships. Victims of childhood bullying, including those that bullied others (*bully-victims*), were at increased risk of poor health, wealth, and social-relationship outcomes in adulthood even after we controlled for family hardship and childhood psychiatric disorders. In contrast, pure bullies were not at increased risk of poor outcomes in adulthood once other family and childhood risk factors were taken into account. Being bullied is not a harmless rite of passage but throws a long shadow over affected people's lives. Interventions in childhood are likely to reduce long-term health and social costs.

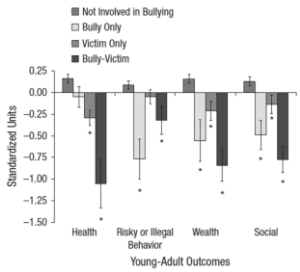

Fig. 2. Associations between childhood role in bullying and young-adult standardized outcome scales (unadjusted for childhood family hardships and childhood psychiatric problems). Across all domains, negative scores indicate more problems than the mean for the total sample, and positive scores indicate fewer problems. Asterisks indicate significant differences from the not-involved-in-bullying group ($p < .05$).

- Controlling for family hardship and childhood psychiatric disorders
  - Targets at risk
    - poor health, wealth, & social-relationship outcomes in adulthood
  - Perpetrators were not at risk

Bullying Is Power:
Implications for School-Based Intervention Strategies

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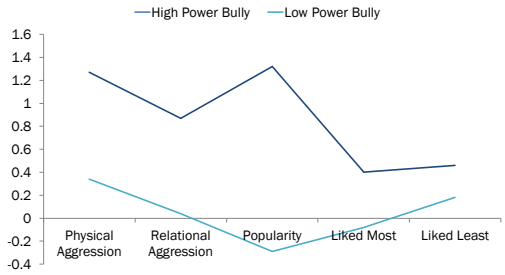
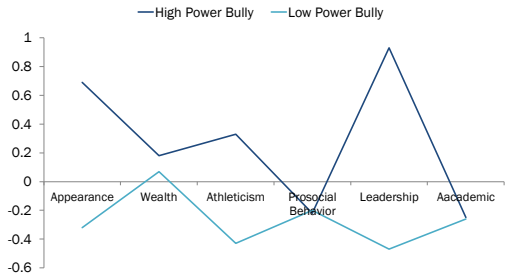
Shelley Hymel
University of British Columbia
Patricia McDougall
University of Saskatchewan

Journal of Applied School Psychology





Why these divergent pathways?

Targets

- Interferes with fundamental need to belong.

Perpetrators

- Does not interfere with fundamental need to belong.
- Linked to high status.

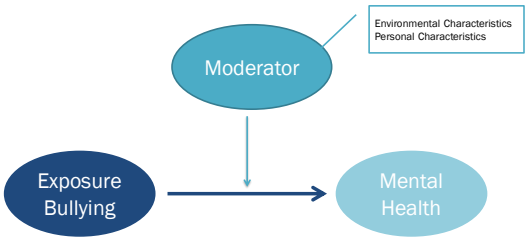
Youth bully others to achieve and maintain social status

- Cillessen & Mayeux, 2004
- Faris & Felmlee, 2014
- Lee, Brittain,& Vaillancourt, 2018
- Prinstein & Cillessen, 2003
- Vaillancourt & Hymel, 2006
- Vaillancourt et al., 2003
- Vaillancourt, 2005; 2010; 2013; 2018

Heterogeneity in MH outcomes

- Why is it that some youth are so adversely affected by bullying while others seem to cope better?

Divergent Pathways



Environmental characteristics

- Better home environments ➲ fare better
  - Baldry & Farrington, 2005; Flouri & Buchanan, 2002
- In classrooms where bullying emerges as central, negative impact of victimization on mental health outcomes is greater
  - Huitsing et al., 2012

Personal Characteristics

- Internalizing problems persisted even after bullying had stopped
  - —for girls, but not boys
- Boys bullied because of their sexual orientation experience more adverse outcome than boys bullied for other reasons

Klomek et al., 2009; Rueger et al., 2011; Swearer et al., 2008;
see Vaillancourt, 2013, 2017 for reviews

J Abnorm Child Psychol (2018) 46:11–26
DOI 10.1007/s10802-017-0342-1

CrossMark

The Influence of Static and Dynamic Intrapersonal Factors on Longitudinal Patterns of Peer Victimization through Mid-adolescence: a Latent Transition Analysis

John D. Haltigan[1,2,3] · Tracy Vaillancourt[1,2]

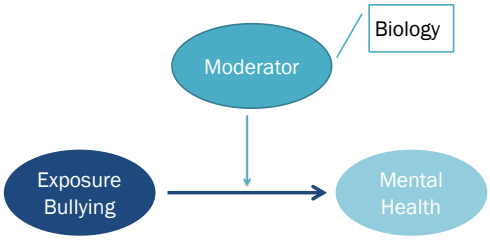
For boys…

Off-time puberty linked to victimization

☑ Late maturing boys disproportionately bullied at follow-up; especially from grade 5 to 6

☑ **22 times** more likely to get bullied compared to on-time male peers

Divergent Pathways



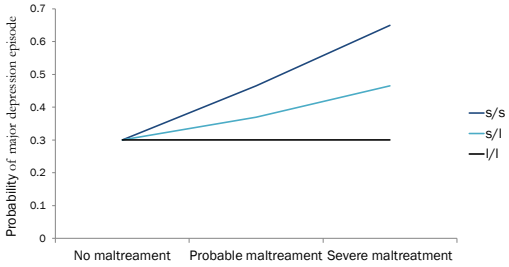
Influence of Life Stress on Depression: Moderation by a Polymorphism in the 5-HTT Gene

Avshalom Caspi,[1,2] Karen Sugden,[1] Terrie E. Moffitt,[1,2]*
Alan Taylor,[1] Ian W. Craig,[1] HonaLee Harrington,[2]
Joseph McClay,[1] Jonathan Mill,[1] Judy Martin,[3]
Antony Braithwaite,[4] Richie Poulton[3]

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.

18 JULY 2003 VOL 301 SCIENCE www.sciencemag.org

Serotonin Gene, Experience, and Depression: Age 26



Replicated with bullied youth in 5 different studies

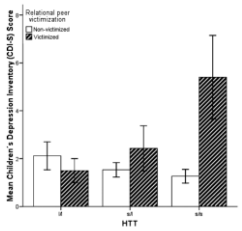


Figure 1 Depressive symptoms by genotype and relational peer victimization group. *Note.* *l/l* = homozygous for long allele; *s/l* = heterozygous for short and long allele; *s/s* = homozygous for short allele; **t* = 3.8, $p < .01$

Banny et al., 2013
Benjet et al., 2010 ☑
Iyer et al., 2013
Sugden at al., 2010
Kretschmer et al. 2014

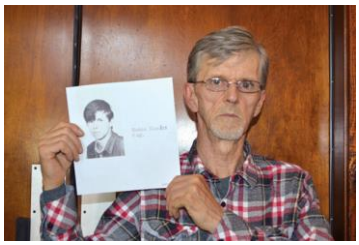
UN World Report on Violence Against Children

- "…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.**"

Neurophysiological Evidence

Robin Tomlin
Fag.

"I feel like, emotionally, they have been beating me with a stick for 42 years"



- We relive and re-experience social pain more easily than physical pain.
- Emotions more intense and painful.

- Physical pain is often short lived; social pain can last a life time.

Chen et al., 2008

Sir Winston Churchill

"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"

doi:10.1093/scan/nsp007 SCAN (2009) 4, 143–157

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

Parts of cortical physical pain network are also activated when a person is socially excluded

- Physical and social pain share similar neural structures
- Linked to evolution

cingulate cortex (subACC) related to greater distress, and that activity in the ventral striatum related to less distress and appeared to play a role in regulating activity in the subACC and other regions involved in emotional distress. Finally, adolescents with higher rejection sensitivity and interpersonal competence scores displayed greater neural evidence of emotional distress, and adolescents with higher interpersonal competence scores also displayed greater neural evidence of regulation, perhaps suggesting that adolescents who are vigilant regarding peer acceptance may be most sensitive to rejection experiences.

Keywords: peer rejection; adolescence; functional magnetic resonance imaging

Neural Alarm

- Rejection differentiated <500 ms by children
  - Using event-related potentials (ERPs) to study neural activity that occurs when a person is rejected

Crowley et al., 2010

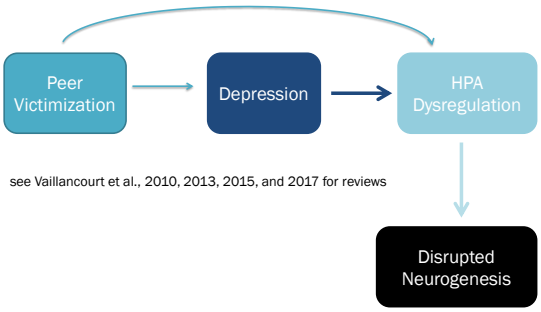
Merrill-Palmer Quarterly, Vol. 64, No. 1

Peer Victimization Is Associated With Neural Response to Social Exclusion

Theresa A. McIver, Rachael L. Bosma, Aislinn Sandre, Sarah Goegan, Janell A. Klassen, and Julian Chiarella *Queen's University*
Linda Booij *Concordia University*
Wendy Craig *Queen's University*

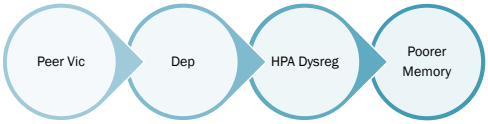
Peer victimization is associated with increased risk for mental health problems. These adverse psychological outcomes are linked with altered cognitive and emotional processes and their related neural functioning. In the present study, by using functional magnetic resonance imaging (fMRI), we examined whether peer victimization was associated with heightened neural response to social exclusion. Participants (N = 45; M_{age} = 17.7 years, SD = 0.60; 36 women) included three mutually exclusive groups: peer-victimized individuals (targets of bullying), cyberdefenders (defended peers who were being cyberbullied), and controls (not involved as targets or cyberdefenders). All participants underwent an fMRI scan while playing Cyberball, an experimental paradigm that simulates social exclusion. Peer victimization was associated with increased neural response in the left amygdala, left parahippocampal gyrus, left inferior frontal operculum, and right fusiform gyrus. Understanding the acute neural response to social exclusion in peer-victimized individuals may provide insight into their increased risk for poor mental health.

Neuroendocrine Evidence



see Vaillancourt et al., 2010, 2013, 2015, and 2017 for reviews

Peer victimization, depressive symptoms, and high salivary cortisol predict poorer memory in children



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

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

PNAS, 2014

Childhood bullying involvement predicts low-grade systemic inflammation into adulthood

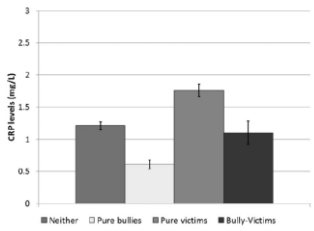


Fig. 2. Adjusted mean young adult CRP levels (milligrams per liter) based on childhood/adolescent bullying status. These values are adjusted for baseline CRP levels as well as other CRP-related covariates. All analyses used robust SEs to account for repeated observations.

Epigenetic Evidence

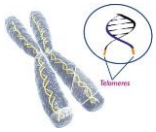
- Environmental signals are translated into molecular events
- Example: DNA methylation
  - Δ gene expression by activating or silencing gene
  - childhood adversity linked to Δ in DNA methylation ➲ later stress reactivity

ORIGINAL ARTICLE

Increased serotonin transporter gene (*SERT*) DNA methylation is associated with bullying victimization and blunted cortisol response to stress in childhood: a longitudinal study of discordant monozygotic twins

- Found that…
  - ❶ ↑ DNA methylation of *SERT* between ages 5 and 10 for bullied twins but not for non-bullied twins
  - ❷ associated with blunted cortisol response to stress

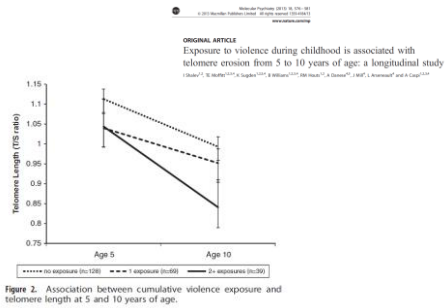
Telomere erosion



Linked to normal processes like aging and …

- health behaviour
- diseases

Also linked to psychological stress and mortality.



ORIGINAL ARTICLE

Exposure to violence during childhood is associated with telomere erosion from 5 to 10 years of age: a longitudinal study

Figure 2. Association between cumulative violence exposure and telomere length at 5 and 10 years of age.

Merrill-Palmer Quarterly, Vol. 64, No. 1

Introduction to the Special Issue: The Neurobiology of Peer Victimization

Tracy Vaillancourt *University of Ottawa*

What does this all mean?

We must not approach bullying with the attitude that *kids will be kids*.

- ☑ significant impairment
- ☑ biologically embedded
  - –Invisible scars Δ person's capacity to deal with subsequent stressors and negatively modifies future health.

☑ Must prioritize the reduction of bullying

Call for action…

↓ MH problems by ↓ bullying

WHY?

bullying ➲ MH problems