The Association of Suicide and Bullying in Childhood to Young Adulthood: A Review of Cross-Sectional and Longitudinal Research Findings

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Objective: To review the research addressing the association of suicide and bullying, from childhood to young adulthood, including cross-sectional and longitudinal research findings.

Method: Relevant publications were identified via electronic searches of PsycNet and MEDLINE without date specification, in addition to perusing the reference lists of relevant articles.

Results: Cross-sectional findings indicate that there is an increased risk of suicidal ideation and (or) suicide attempts associated with bullying behaviour and cyberbullying. The few longitudinal findings available indicate that bullying and peer victimization lead to suicidality but that this association varies by sex. Discrepancies between the studies available may be due to differences in the studies’ participants and methods.

Conclusions: Bullying and peer victimization constitute more than correlates of suicidality. Future research with long-term follow-up should continue to identify specific causal paths between bullying and suicide.


Clinical Implications

• Both sexes have a markedly different risk profile.
• Bullying and peer victimization are risk factors for later suicidality, especially when there is comorbid psychopathology.
• Children who are involved in bullying behaviour should be actively screened for psychiatric problems and suicidality.

Limitations

• There are very few longitudinal studies available.
• Comparisons between studies is difficult because they differ in age of participants and methods.
• There are still not enough studies that include cyberbullying—a new, important area of research.

Key Words: bullying, peer victimization, suicide

Suicidal behaviours affect millions of teenagers each year, indicating a public health problem in need of attention and intervention. Suicide rates among young people have been increasing to such an extent that they are now the group at highest risk in one-third of countries, both in developed and in developing countries.1,2

Bullying among school-age children is now recognized as a major public health problem in the Western world. In 2001, the Surgeon General of the United States published a report3 emphasizing the importance of focusing attention of this problem. The most widely employed definition of bullying was provided by Olweus4 indicating that a person is bullied when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more people. Olweus further suggested that bullying involves an imbalance of power.4

Bullying behaviour falls into 4 general categories:
direct-physical (for example, assaults or theft), direct-verbal
(threats, insults, or nicknames), indirect-relational (for example,
social exclusion and spreading nasty rumours), and the
newest form, cyber.5

Population-based studies indicate that 20% to 30% of school
children are frequently involved in bullying as bullies and (or)
victims.6-10 In a cross-national study of 113 000 students aged
between 11 and 15 years from 25 countries, involvement in
bullying varied from 9% to 54%.11 Bullies and victims of bullying
are more likely than children uninvolved in bullying to suffer from a wide variety of problems, including low
self-regard,12 depression and anxiety,13,14 and violent beha-
vours.15 Moreover, bullying behaviour during childhood is
related to future psychiatric symptoms.8,16,17

Numerous cases have been reported in the media in which sui-
cide or attempted suicide has been attributed to bullying.
Empirical research has also identified bullying as one of the
risk factors for suicidality.18-24 The importance of studying
bullying as a risk factor of suicidality is underscored by ado-
lescents frequently citing interpersonal problems as a precipi-
tant of suicidal behaviour.25 In a study by Beauchais et al26 one
of the most common precipitants of serious suicide attempts
were interpersonal conflicts and relationship difficulties.

Recently, research has begun to study the association between
cyberbullying and psychopathology and cyberbullying and suicide.22,27 Cyberbullying can be defined as "an aggressive,
intentional act carried out by a group or individual, using elec-
tronic forms of contact, repeatedly and over time against a vic-
tim who cannot easily defend him or herself."28, p 376 The
phenomenon only appeared a few years ago, as the use of elec-
tronic devices such as computers and mobile phones by young
people increased. Existing surveys on the prevalence of
cyberbullying show that it is common among adolescents.
Previous school surveys from the United States and the
United Kingdom show that the rate of being a victim of
cyberbullying and being a cyberbully is in the range of 5% and
20%.28-30 Cyberbullying is unique to other more traditional
forms of bullying because of the perpetrator’s anonymity and
ability to harass their victim 24 hours a day. Extreme cases of
cyberbullying have led to adolescent suicide.31

A recent review has presented the studies examining the asso-
ciation between bullying and suicide, but included only
cross-sectional studies.32 Longitudinal studies provide sup-
port for the view that the effects of bullying can be long-
lasting. Children involved in bullying, particularly those who
were bully victims, at early elementary school age and those
who were victims in their early teens, had more psychiatric
symptoms at the age of 15 years.3 To our knowledge there are
no existing reviews of the research base that have included
the longitudinal association between bullying and suicide. Our
paper has 2 goals: to provide a review of the association
between suicide and bullying, both in cross-sectional and in
longitudinal studies, and to highlight the areas in need of fur-
ther investigation.

Method
Our paper is precisely focused on empirical research address-
ing suicide and bullying among children, adolescents, and
young adults of the general population. Papers that focused
on specific populations (such as homosexuals or prisoners)
or adults were excluded from this review. Articles were iden-
tified by electronic literature search of PsycNet and
MEDLINE without date specification, in addition to perus-
ing the reference lists of relevant articles. The search terms
included: bullying, peer victimization, harassment, and sui-
cide. An initial search yielded about 300 articles; however,
ultimately only 31 articles were appropriate for inclusion in
the current review.

Results
Bullying and Suicide in Cross-Sectional Studies
Only in the last 20 years have studies examined the cross-
sectional relation between bullying and suicidal behaviour
among children and adolescents. Online eTable 1 presents a
summary of some of the most important studies, which have
population-based samples. These cross-sectional studies
found that victims of bullying exhibit high levels of suicidal
ideation,33,34,35 and be more likely to have attempted
suicide34,38,40 compared with nonvictims. Bullies have also
been reported to have an increased prevalence of suicidal
ideation33,34,36,41 and suicide attempts9 than those not
involved in bullying behaviour. These associations between
bullying behaviour and suicidality have been found in ele-
mentary school,37 middle school,42,43 and high school
students.21,33,35 Suicidal ideation and suicide attempts are sig-
ificantly associated with victimization and with bullying
others both in and away from school.42 In most of the studies,
the most disturbed group were those who were both bullies
and victims.19,21,33,42,44,45 However, Liang et al46 have found
that suicidal ideation was just as common in bully-victims as
in victims of bullying. A study by van der Wal et al37 has
found the associations between bullying and suicide to be
stronger for indirect than for direct forms of bullying.
The increased risk (odds ratios) of suicidal ideation and (or)
suicide attempts associated with bullying behaviour in
cross-sectional studies ranges from 1.4 to 10.0.32 A few stud-
ies reported on a dose-response relation.21,33 Studies also
indicate that school bullying is a significant risk factors for
suicidal ideations and behaviours in adolescents, independ-
ent of other suicide risk factors, such as depression, sex,
socioeconomic status, and family structure.19,34

Significant interactions between sex and school bullying in
the risk of suicidal ideation have emerged in these cross-
sectional studies, but the results are inconsistent. Roland46
found that only among girls did bullies have more suicidal
thoughts. Similarly, Kim et al19 found that only female stu-
dents who were involved with school bullying (as victim or
perpetrator) were at significantly greater risk for suicidal
ideation, and van der Wal reported that only among girls was there a strong association between being bullied and suicidal ideation. Park et al. reported that for females, unlike males, victim of bullying behaviour was predictive of suicidal ideation. Luukkonena et al. have found that among girls, being bullied or bullying others are risk factors for suicidal behaviour. Conversely, Rigby and Slee reported that the association between being a bully and suicidal ideation applied to boys only. Katiala-Heino et al. found that, among girls, severe suicidal ideation was associated with frequently being bullied or being a bully and for boys it was associated with being a bully. Herba et al. found no overall sex differences in suicidal ideation.

A study by Klomek et al. suggests that there is a different threshold in which bullying is associated with suicidality among females and males. Females who bullied others were found to be at risk for suicidal ideation and suicide attempts, even when the bullying was infrequent. However, among males, only frequent bullying was associated with ideation and attempts. Infrequent bullying among males may be a more normative behaviour, consistent with reports that the level of aggression is higher among males, compared with females. The sex differences in the association with bullying may be understood by a gender paradox. Wasserman et al. found that female adolescents who demonstrate conduct problems are at higher risk of affective disorders than comparable males. Bullying behaviour could be another example of a gender paradox, whereby the females are less likely to be bullies, but, when they are, they have a more severe impairment than their male counterparts. The results suggest a different sex threshold in victimization as well. Among females, victimization at any frequency increased the risk of ideation and attempts. Among males, only frequent victimization increased the risk of ideation; although infrequent victimization was associated with an increased risk of attempts. These findings contradict reports that only female victims are at greatest risk for ideation.

Klomek et al. have reported that experience with cyber victimization is also associated with an increase in suicidal ideation and suicide attempts. Among females, being bullied via Internet or email infrequently or frequently was significantly associated with depression and suicidal ideation. However, only frequent victimization was associated with attempts. Among males, frequent but not infrequent victimization was associated with depression and both levels of victimization were associated with suicidal ideation. In this study, the small number of males who were victimized via Internet or email and made an attempt precluded a meaningful examination of the risk of attempts. Interactions between this type of victimization and sex were not significant regarding depression, suicidal ideation, and attempts. Hinduja and Patchin have recently found that youth who experienced cyberbullying, as either an offender or a victim, had more suicidal thoughts and were more likely to attempt suicide than those who had not experienced such forms of peer aggression. They note that traditional bullying and cyberbullying seem to be related to suicidal ideation in similar ways.

These cross-sectional studies indicate a clear association between bullying behaviour and suicidality among children and adolescents; however, the generalizability of these findings is limited by important methodological problems. First, most studies suffer from shared method variance caused by the use of the same informants to identify both bullying and suicidality. Second, many studies have assessed suicide-related thoughts and behaviour using brief screening instruments. Third, not all studies include a definition of bullying. Different meanings for the terms bullying and bullied may have been construed. Fourth, most studies assessed the association between school bullying and suicidal ideation, but only a few assessed the association between school bullying and suicidal behaviour.

In longitudinal studies, the small number of males who were victimized via Internet or email and made an attempt precluded a meaningful examination of the risk of attempts. Interactions between this type of victimization and sex were not significant regarding depression, suicidal ideation, and attempts. Hinduja and Patchin have recently found that youth who experienced cyberbullying, as either an offender or a victim, had more suicidal thoughts and were more likely to attempt suicide than those who had not experienced such forms of peer aggression. They note that traditional bullying and cyberbullying seem to be related to suicidal ideation in similar ways.

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Last and most important, while establishing useful associations, these cross-sectional studies are unable to provide adequate evidence that bullying and peer victimization constitute anything more than correlates of suicidality. Longitudinal studies are necessary to establish causality. Longitudinal studies are able to distinguish mere correlates from predictive risk factors of suicidality. Next, we summarize findings from recent longitudinal studies.

Bullying and Suicide in Longitudinal Studies

Longitudinal studies are important to provide adequate evidence about the nature of the relation between bullying behaviour with suicidal ideation, suicide attempts, and completed suicide. Research on the long-term consequences of bullying has only recently been published (see online eTable 1).

There are only a few longitudinal studies of bullying and peer victimization and later depression. In a study by Sourander et al. frequent victimization among girls predicted use of antidepressants even when controlling for baseline psychopathology. A few studies have examined bullying and peer victimization and later suicidal ideation and suicidal behaviour. The increased risk (odds ratios) of suicidality associated with bullying behaviour in these longitudinal studies ranges from 1.7 to 11.8.

Recently, Kim et al. have published a study that examined the independent impact of bullying on suicide risk after 10 months. This study’s results indicated that bully-victims and female victims at baseline showed increased risk for persistent suicidality (OR 2.4 and 9.8, respectively). Male incident victims exhibited increased risk for suicidal behaviours and ideations (OR 4.4 and 3.6, respectively). Female persistent bullies exhibited increased risks for suicidal behaviours; male incident perpetrators had increased risk for suicidal ideations (OR 2.7 and 2.3, respectively). Baseline-only male
bully-victims showed increased risk for suicidal ideations (OR 6.4). The authors conclude that bullying is a significant, independent risk factor for suicidal ideations and (or) behaviours in adolescents.

Until recently there have been no longitudinal cohort studies that examined the psychiatric outcomes in late adolescence or early adulthood of children who bully or were victimized in childhood. To our knowledge, the only large-scale, population-based, long-term follow-up study of childhood bullying and victimization and early adulthood outcome is the nationwide Finnish 1981 Birth Cohort Study. The Finnish data includes a birth cohort of boys and girls aged 8 years followed up until they were aged 25 years to investigate, in part, the relation between childhood bullying and adulthood outcomes. A first follow-up was done for boys only when they were called up for military service. The next follow-up was done using different Finnish data sources (for example, Statistics Finland’s Cause of Death Register; the Finnish Hospital Discharge Register; copies of death certificates from forensic medical-legal investigations; and the Finnish National Police Register).

The Finnish reports on males only examined the relation between childhood bullying behaviour and depression and suicidal ideation 10 years later. This study found that childhood bullying behaviour among boys aged 8 years is a risk factor for later depression. However, the association between bullying others and suicidal ideation became nonsignificant when controlling for depression in boys aged 8 years. A very recent study was the first to examine the relation between childhood bullying with suicidal behaviour among both sexes. The purpose of our study was to examine the association of bullying behaviour at age 8 (based on pooled information from child, parent, and teacher) with suicide attempts and deaths by suicide until age 25 for both sexes. Specifically, our study examined the extent to which children who experience infrequent or frequent bullying behaviours at age 8 are at risk for later suicide attempts and deaths by suicide. As suicide attempts and deaths by suicide are associated with both externalizing and internalizing disorders, the aim was to discover whether children who experience bullying behaviours at age 8 are at risk for later suicide attempts and deaths by suicide after controlling for baseline conduct and depression symptoms. The impact of frequent victimization also seems to be different for boys and girls. Among boys, frequent victimization in the absence of co-occurring bullying behaviour was not associated with later suicidal behaviour. When victimization and bullying co-occur, this was associated with later suicidal behaviour; however, this association became nonsignificant after controlling for both childhood depression and conduct symptoms. Among girls, frequent victimization in the absence of co-occurring bullying behaviour was associated with later suicidal behaviour, even after controlling for baseline psychopathology. In other words, frequent victimization among girls has an independent effect that goes beyond childhood psychopathology. Our findings support the notion that the long-term effects of victimization differ by sex. This finding may be explained by the different types of peer victimization to which girls and boys are exposed. Boys often experience more overt, physical victimization, while girls are more liable to experience indirect, relational victimization. Relational victimization has been found to have a greater impact on mental conditions (for example, depression and loneliness) than overt victimization.

Our findings indicate that when controlling only for baseline depression at age 8 the results remained very similar to the unadjusted results. This is in contrast to the results we found when adjusting only for baseline conduct symptoms. These findings may indicate that it is the baseline conduct symptoms that mediate the association between bullying and suicidal behaviour among males. This is consistent with studies indicating an association between deaths by suicide and externalizing problems.

Discussion
Our paper reviewed the empirical research addressing the association between bullying and suicide, and included 31 studies, most of which were cross-sectional. Data from...
than correlates of suicidality. Studies indicate that bullying have just started to be published. The few studies available these studies indicate a clear association between bullying and suicidality when it is accompanied with psychopathology, specifically conduct problems. Further population-based longitudinal studies that include severe suicide attempts and deaths by suicide are needed to support these recent findings.

Differences in the findings of the studies examining the association between bullying and suicide may be due to several important aspects. One aspect may be the inconsistent terminology of both bullying and peer victimization and of suicide-related thoughts and behaviours in the research literature. In studies examining the association between bullying and suicide, some examine suicidal ideation, while others examine attempts or a combination of the 2. Among those examining suicidal ideation, some studies include any suicidal ideation, while others include only severe ideation. Differences are also apparent in suicidal behaviour. In Kim et al.'s study the suicide attempt item included both suicidal and self-injurious behaviours. However, the outcome of Klomel et al.'s study included suicide attempts requiring hospitalization as well as deaths by suicide. Similarly, despite the recognition of the need to study bullying behaviour, problems persist owing to the use of different bullying and cyberbullying terms in the literature. Moreover, there are different ways to identify children involved in bullying. Some studies use self-reports, while others use peer nomination or a combination of self-reports with reports by others. In addition, different studies include different ages. Among the cross-sectional studies, some assessed children aged between 9 and 13 years, while others assessed adolescents aged between 14 and 16 years. The ages are also different in the longitudinal studies. Kim et al. included seventh and eighth graders, while the Finnish data included students aged 8 years until they were aged 25 years. Another explanation of the inconsistent findings may be that the different studies controlled for different factors. These factors may confound the associations between bullying and suicide. Most studies control for sex, but only a few also controlled for depression. A study that did not find an association between bullying and suicide in multivariate analyses controlled for sex, depression, and suicidal history. Lastly, the longitudinal studies differ, marked by in the duration of their follow-up period. Kim et al. followed students for 10 months, while Klomel et al. followed the students for up to 17 years. The main target of effective prevention of suicides by youth is to reduce suicide risk factors. This review highlights bullying and peer victimization as clear risk factors for later suicidality, again, especially when there is comorbid psychopathology.

The findings that baseline conduct symptoms may mediate the association between bullying and suicidal behaviour among males is consistent with research indicating that suicide and interpersonal violence share numerous important risk and protective factors across multiple domains of influence. This suggests that prevention approaches can integrate suicide and violence prevention. The findings also support recommendations to differentiate suicidal youth based on the presence or absence of violent behaviour. This differentiation may add to our understanding of suicidal phenomena and may thus have important clinical consequences.

An understanding of the relation between bullying behaviour and suicide is critical to clinicians who deal with children and adolescents as well as to those designing educational and public health prevention programs for schools. Children who are frequently involved in bullying behaviour should be actively screened for psychiatric problems. School-based screening could be implemented simply by means of parent and teacher symptom checklists. If a frequent bully has a high level of psychiatric symptoms, he or she should be referred for further psychological assessment and (or) treatment. Parents, teachers, and other school staff should routinely supervise their offline and online behaviours. Future research should continue to identify specific causal paths between bullying and suicide.

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40. The Association of Suicide and Bullying in Childhood to Young Adulthood: A Review of Cross-Sectional and Longitudinal Research Findings

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Résumé : L'association du suicide et de l'intimidation de l'enfance au jeune âge adulte : une revue des résultats de la recherche transversale et longitudinale

Objectif : Examiner la recherche portant sur l'association du suicide et de l'intimidation, de l'enfance au jeune âge adulte, y compris les résultats de la recherche transversale et longitudinale.

Méthode : Les publications pertinentes ont été identifiées par des recherches électroniques dans PsycNet et MEDLINE sans spécification de date, et un examen des bibliographies des articles relevés a été effectué.

Résultats : Les résultats d'études transversales indiquent qu'il existe un risque accru d'idéation suicidaire et (ou) de tentatives de suicide associé au comportement intimidant et à la cyberintimidation. Les quelques résultats longitudinaux disponibles indiquent que l'intimidation et la victimisation des pairs mènent à la suicidabilité, mais que cette association varie selon le sexe. Les écarts entre les études disponibles sont peut-être attribuables aux différences des participants et des méthodes des études.

Conclusions : L'intimidation et la victimisation des pairs constituent plus que des corrélats de la suicidabilité. La recherche future, avec un suivi à long terme, doit continuer à identifier les enchaînements de causalité spécifiques entre l'intimidation et le suicide.