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# Adolescent risk correlates of bullying and different types of victimization

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***Abstract:*** This study examined correlates of different types of bullying and victimization relevant to the adolescent context. Of particular interest was the importance of risk factors that emerge and/or undergo significant changes during adolescence. Logistic regressions were performed using a representative sample of approximately 6,500 Canadian adolescents. We found that high-levels of victimization (7.6%), bullying (6.1%), and bully-victimization (0.9%) were quite prevalent amongst adolescents. The patterns of risk associated with each of these labels were different from each group. An examination of the different sub-types of victimization revealed that there were differences in both the prevalence and the risk patterns associated with each sub-type. Physical, verbal, and rumor victimization (the most common types) had similar risk patterns, while sexual victimization and ethnic victimization (the least most common type) each had a unique risk pattern. We conclude that emerging and/or changing risk factors associated with adolescent development are significantly related to bullying and victimization, with the specific relationships depending on the specific type of activity examined. These findings suggest that successful intervention strategies should try to be sensitive to the variations in prevalence and relationships with the risk factors.

***Keywords:*** Bullying, victimization, adolescence, risk factors, Canada

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## INTRODUCTION

Bullying is increasingly recognized as a significant risk to many adolescents' physical, mental, and/or social (1,2) development. Bullying can be defined as a relationship problem characterized by an imbalance of power whereby a more powerful individual repeatedly causes harm to a weaker individual (3). Depending on the time frame measured, the combined prevalence of bullying and victimization in adolescence lies between 10-60% (4-9). An estimate of approximately 1 billion adolescents in the world (10) suggests that 100-600 million adolescents may be directly affected by bullying worldwide.

There are three common categorizations of victimization: direct physical abuse, direct verbal abuse, and indirect (e.g., spreading of rumors and/or social withdrawal) (5,11). A study of these types of victimization found no significant sex differences in the prevalence of verbal abuse in bullying (12). The researchers did find that physical abuse in bullying is significantly more prevalent amongst males, while rumors and/or social withdrawal are significantly more prevalent

amongst females. They also found that the prevalence of all three types of victimization were lower amongst secondary school students than amongst junior school students. However, these three forms of bullying may not reflect the full continuum of victimization experienced by adolescents.

Sexual harassment is an understudied type of adolescent victimization. Adolescents undergo significant physical changes, as well as mental changes associated with sexual drives and sexual identities. These transitions likely make adolescents especially vulnerable to sexual victimization. Sexual harassment affected approximately 40% of a sample of young Canadian adolescents (13). Males were perpetrators significantly more often than females, although there was no sex difference amongst victims (13). The same study also found that cross-gender harassment increased with age, while same gender harassment did not.

A type of adolescent victimization that is not often identified in the bullying literature is abuse concerning ethnicity. Ethnic identity often plays an important role in adolescents' development of self-identity (14). Adolescent self-identity is highly dependent on peers (15), and thus adolescents may be especially susceptible to ethnic victimization. Ethnic stereotyping can be a prevalent and harmful type of social aggression (16,17).

**Adolescent Bullying Risk Factors**

Bullying appears to be influenced by several risk factors that have strong links behaviors that emerge in adolescence (alcohol use, drug use, mental health, pubertal development) or undergo dramatic changes during adolescence (health, parents, peers, schools). Vulnerabilities to bullying may evolve during adolescence as a result of these emerging and/or changing risk factors (18). Therefore, it is important to consider not only the influences of the individual risk factors (e.g., quality of parent relationship) and contextual risk factors (e.g., school climate) in general, but also how those influences change over the course of adolescent development.

*Alcohol*: Alcohol use typically emerges in early adolescence, and generally increases with age (15). Alcohol use is positively correlated with bullying (19,20), but negatively correlated with victimization (7,20).

*Drugs*: As with alcohol use, drug use typically emerges during adolescence (21). Bullies were more likely to have been asked/pressured to use marijuana (19). The same study also showed that bullying is associated with an increased likelihood of tobacco use (as another type of drug abuse).

*Health*: The dramatic physical changes associated with puberty occur during adolescence and may influence both bullying and victimization. Early pubertal development is associated with an increased likelihood of sexual harassment and social victimization (18). Poor physical health is associated with an increased probability of both bullying and victimization (22).

*Mental Health*: Serious mental health problems are typically first diagnosed (and may thus emerge) during adolescence (23). A number of studies (5,24-27) have shown that bullying has a strong relationship with mental health (especially for victims). Both bullying and victimization are associated with depression and anxiety (20,27). However, Craig (5) did not replicate the significant finding for bullies (although there was a similar, non-significant trend). Therefore, depression may be a common symptom amongst victims, but it appears to occur in lower (yet greater than normal) levels amongst bullies.

*Parents*: During adolescence, the relationship between parents and adoles-

cents changes significantly as parents generally play a less direct role in guiding the actions of their children (4,28). Despite this decreased influence positive and supportive parenting may function as a buffer towards negative outcomes (29), while poor family functioning and poor relationships with parents were both associated with increased bullying and increased victimization amongst adolescents (30). Researchers also found that bullies and victims were more likely to have experienced low levels of parental care and/or high levels of parental overprotectiveness (7,30).

*Peer*s: As the influence of parents wanes, the influence of peers becomes increasingly important during adolescence (28). Amongst boys (and to a lesser extent, amongst girls), current peer behavior is a more powerful predictor of bullying behavior than an individual's past behavior (9). Being able to make friends and/or receive peer support is positively associated with bullying and negatively associated with victimization (7,17,25). Craig et al. (18) found that the support of even a single friend can dramatically reduce the likelihood of being victimized.

*School Atmosphere*: Given the significant amount of time adolescents spend in school, school atmosphere may be an important contextual risk factor for adolescent bullying. Many studies have emphasized the importance of schools in regulating bullying behavior (e.g., 31,32). A sample of three United Kingdom middle schools illustrated the differences amongst schools by showing different levels of bullying at each school (11).

### Current Study

There were three goals for the current study. (1) To obtain reliable estimates of rates of victimization and bullying amongst Canadian adolescents using a large, representative sample. (2) To increase the understanding of the relationships between common adolescent risk factors and adolescent bullying. We sought to examine the relationships between victimization, bullying, bully-victimization, and seven composite risk indices: alcohol use, drug use, health problems, mental health problems, parental difficulties, peer pro-social behavior, and school atmosphere. To understand these relationships, we utilized a multivariate, developmental approach. (3) Apply any new knowledge of the risk patterns towards making general recommendations regarding anti-bullying/ victimization strategies.

## METHODS

### Participants

Data for this study were drawn from the Canadian records from the 1998 World Health Organization *Health Behaviour in School-Aged Children Survey* (HBSC). The HBSC is a cross-sectional survey from elementary and high schools in 35 countries. The Canadian sample was designed according to the international HBSC protocols (34). A cluster design was used with the school class being the basic cluster, the distribution of the students reflected the distribution of Canadians in grades 6-10, and the sample was designed to be self-weighting. Within each province, samples were selected to represent distributions of schools by size, location, language, and religion. 74.2% of the students selected for the study completed the questionnaire, and their demographic profile was representative of Canadians in the same age range. Approximately 6,500 Canadian adolescents were used in this study, ranging in age from 12 -19 years old.

### Measures

Seven adolescent risk indices were constructed using items from the HBSC

survey: health problems, school atmosphere, mental health problems, drug use, alcohol use, parental difficulties, and peer pro-social behavior. To construct each index, the individual variables within a particular index were converted to a common Likert scale and summed. Higher scores indicated more frequent (and problematic) behavior.

*Alcohol Use Index*: The Alcohol Use Index was composed of four items (α = .82): how often do you drink even small amounts of the following: beer, wine, liquor; and have you ever had so much alcohol that you were really drunk.

*Drug Use Index*: The (illegal) Drug Use Index was composed of nine items (α = .88) assessing how often have you taken any of the following drugs: hashish/marijuana (e.g. hash, grass), solvents (e.g. glue sniffing), cocaine (e.g. crack), heroin/opium/ morphine, amphetamines (e.g. uppers, speed), LSD (e.g. acid), E or ecstacy, medical drugs to get stoned (e.g. tranquilizers such as Valium or sedatives such as Seconal), anabolic steroids to change the way you look or improve athletic performance.

*Health Problems Index*: The Health Problems Index was composed of eight items (α = .70) assessing how often have you experienced: headache, stomachache, backache; and how often have you taken medicine or pills for: cough, cold, headache, stomachache.

*Mental Health Problems Index*: The Mental Health Problems Index was composed of nine items (α = .73)assessing how often have you experienced: left out of things, helpless, unsure of yourself, feeling low, a bad mood, feeling nervous, difficulties getting to sleep; and how often have you taken medicine or pills for: difficulty sleeping, nervousness.

*Parental Difficulties Index*: The Parental Difficulties Index was composed of five items (α = .70): if I have problems at school, my parent(s) are ready to help me, my parent(s)are willing to come to the school to talk to teachers, my parent(s) encourage me to do well at school; and how easy is it for you to talk to a) your mother or b) your father about things that really bother you.

*Peer Antisocial Index*: The Peer Antisocial Index was composed of eleven items (α = .72) assessing how many of your friends: smoke cigarettes, do not like school, do not think getting good marks at school is important, do not get along with their parents, carry weapons like knives, use drugs to get stoned, have been drunk, do not play for sports teams; and: the students in my class(es) do not enjoy being together, most of the students in my class(es) are not kind and helpful, other students do not accept me as I am.

*School Atmosphere Index*: The School Atmosphere Index was composed of ten items (α = .80): in our school, students take part in making rules, students are not treated too severely/strictly in this school, the rules in this school are fair, our school is a nice place to be, I feel I belong at this school, I am encourage to express my own views in class(es), our teachers treat us fairly, when I need extra help I can get it, my teachers are interested in me as a person, my teachers do not expect too much of me at school.

**Dependent Variable Dichotomization**

Perpetration and victimization were dichotomized into values of one (at least one incident per week) or zero (less than one incident per week). While these standards are relatively stringent, we wanted to focus on the most serious cases.

Bullying was defined to students: “A person is being bullied when another person, or a group of people, says or does nasty and unpleasant things to him/her. It is also bullying when one is teased repeatedly

in a way he/she doesn't like. It is not bullying when two students of about the same strength quarrel or fight." Students were asked: how often have you taken part in bullying other students in school this term (bullying) and how often have you been bullied in school this term (victimization). Students were also asked: how often has someone bullied you in school this term in the ways listed below: hit, slapped, or pushed you (physical); spread rumors or mean lies about you (rumor); made fun of you because of the way you looked or talk, or threatened you (verbal); made sexual jokes, comments, or gestures to you (sexual); made fun of you because of religion (ethnic).

**RESULTS**

Hierarchical logistic regressions were performed to examine the relationship between bullying and the adolescent risk indices. The regression involved two steps. The first step incorporated participant age (ranging from 13-18) and gender (♂ = 1, ♀ = 2), while the second step incorporated the seven adolescent risk indices. There were minor variations in the sample sizes for each regression because of missing data.

**Victimization, Bullying, and Bully-Victimization**

Approximately 7.6% of the adolescents reported being victimized at least once a week. Bullying had a slightly lower prevalence, as 6.1% of the adolescents in this sample reported bullying others at least once a week. Bullying-victimization was less frequent than either of the above, with about 1/6 of the bullies and victims reported both being a victim and bullying others at least once a week (0.9% of the total sample). There were differences between the sexes as well as the age groups. See Table 1.

The odds-ratios for the risk factors and victimization are presented in Table 2. Being young and male both significantly increase the likelihood of being a victim. The likelihood of being victimized is also significantly related to decreased alcohol use, increased mental health problems, and increased peer anti-sociality.

Bullying was significantly related to all of the risk indices except for parental problems (see Table 2). As with victimization, young males were significantly more likely to report being bullies. Unlike victimization, the likelihood of bullying was negatively associated with mental health problems. The remaining indices (problems with alcohol, drugs, health, peers, and school atmosphere) were all positively related to the likelihood of bullying.

Young males were most likely to be bully-victims (see Table 2). Drug use was associated with a significant increase in the likelihood of being a bully-victim. Mental health and school atmosphere problems were positively related to the likelihood of being a bully-victim, while the role of health (bullying) and peers (victimization) were not significant.

**Sub-Types of Victimization**

The prevalence of the different sub-types of victimization amongst victims is in Table 3. The relationship between the risk indices and the types of victimization is presented in Table 4. Physical, rumor, and verbal victimization all shared a similar pattern between the risk indices and the likelihood of their occurring. Physical victimization was reported by 48.5% of victims. The likelihood of physical victimization was significantly related to being young and male. Low levels of alcohol use, and high levels of mental health problems, antisocial peers, and school atmosphere problems were all associated with an increased probability of physical victimization.

Table 1. *Prevalence of bullying, victimization and bully-victimization*

| Age (years) | Bullying (%) | Victimization (%) | Bully-Victimization (%) |
|---|---|---|---|
| *Males* | | | |
| 13 | 7.2 | 11 | 1.3 |
| 14 | 12.1 | 11.8 | 2.3 |
| 15 | 10.4 | 7.3 | 0.6 |
| 16+ | 9.3 | 4.4 | 1.3 |
| *Females* | | | |
| 13 | 3.0 | 7.5 | 0.6 |
| 14 | 4.4 | 5.3 | 0.6 |
| 15 | 3.3 | 4.2 | 0.3 |
| 16+ | 1.9 | 4.2 | 0.2 |

Table 2. *Odds-ratios for risk factors and victimization, bullying and bullying-victimization*

| | Victimization | Bullying | Bully-Victimization |
|---|---|---|---|
| Age | .733*** | .716*** | .612** |
| Sex | .478*** | .296*** | .246*** |
| Alcohol | .915*** | 1.137*** | ns |
| Drugs | ns | 1.050** | 1.123*** |
| Health | ns | 1.039*** | ns |
| Mental Health | 1.134*** | .969** | 1.111*** |
| Parents | ns | ns | ns |
| Peers | 1.065*** | 1.043*** | ns |
| School atmosphere | ns | 1.071*** | 1.055* |

Note: * = p < .05; ** = p < .01; *** = p < .001

Rumor victimization was the most prevalent type of victimization, and was reported by 54.0% of all victims. The likelihood of rumor victimization had the same relationships with the risk indices as physical victimization; with the exception that school atmosphere was not a significant predictor of rumor victimization. Verbal victimization was reported by 35.7% of victims. As with rumor victimization, verbal victimization had the same relationship with the risk indices as physical victimization, except that drug use was associated with an increase in the likelihood of verbal victimization. Supplementary analyses revealed that the similarities in risk patterns between physical, rumor, and verbal victimization

Table 3. *Prevalence of victimization sub-types amongst victims in percentages*

| Age | Type of Victimization | | | | |
|---|---|---|---|---|---|
| | **Ethnic** | **Physical Assault** | **Rumors** | **Sexual Harassment** | **Verbal Assault** |
| *Males* | | | | | |
| 13 | 22 | 81 | 59 | 35 | 35 |
| 14 | 10 | 68 | 59 | 42 | 46 |
| 15 | 13 | 52 | 55 | 37 | 47 |
| 16+ | 9 | 49 | 57 | 48 | 34 |
| *Females* | | | | | |
| 13 | 3 | 35 | 49 | 38 | 32 |
| 14 | 9 | 31 | 37 | 50 | 17 |
| 15 | 4 | 18 | 40 | 45 | 16 |
| 16= | 10 | 17 | 44 | 37 | 18 |

Table 4. *Odds-ratios for risk factors and different types of victimization*

| | **Physical** | **Rumor** | **Verbal** | **Sexual** | **Ethnic** |
|---|---|---|---|---|---|
| Age | .660*** | .634*** | .718*** | .793*** | n.s. |
| Sex | .192*** | .341*** | .181*** | .736** | .220*** |
| Alcohol | .927*** | .894*** | .918*** | ns | .865*** |
| Drugs | ns | ns | 1.053* | 1.044* | 1.155*** |
| Health | ns | ns | ns | ns | ns |
| Mental Health | 1.116*** | 1.148*** | 1.120*** | 1.124*** | 1.106*** |
| Parents | ns | ns | ns | ns | 1.092** |
| Peers | 1.050*** | 1.077*** | 1.069*** | 1.054*** | ns |
| School atmosphere | 1.021* | ns | 1.028* | ns | ns |

Note: * = $p < .05$; ** = $p < .01$; *** = $p < .001$

were not due to the common influence of those individuals who belonged to all three groups.

Sexual victimization was reported by 39.6% of victims. Sexual victimization was most likely amongst young males, although the sex difference was relatively small. Increased drug use, mental health problems, and antisocial peer behavior were all associated with an increased probability of sexual victimization.

Ethnic victimization was reported by 10.8% of victims. The likelihood of ethnic victimization was independent of age, but was significantly more likely amongst males. Problems with alcohol were negatively associated with the likelihood of ethnic victimization, while problems with

drugs, mental health, and parents were all significantly associated with an increased likelihood of ethnic victimization.

## DISCUSSION

### Victimization, Bullying, and Bully-Victimization

The percentage of Canadian adolescents who reported bullying, victimization, and bully-victimization at least once a week is similar to the prevalence of these three behaviors as reported in other studies. Males had higher levels of all three types of behaviors and there was an increase in the prevalence of all three behaviors at age 14. The latter finding appears contrary to the results of the logistic regressions that show a strong negative correlation between age and likelihood of exhibiting the behaviors. This discrepancy illustrates the importance of examining age-related data at both macro and micro levels.

Victims were most likely to be young males. Alcohol use, mental health, and peer behavior were the only risk factors that significantly predicted victimization. The relationship between victimization and mental health problems supports the literature (25). The increased likelihood of decreased use of alcohol amongst victims is somewhat puzzling, especially when compared to the increased likelihood of peer antisocial behavior. In this context decreased alcohol use may be a sign that the individual is not engaging in typical adolescent social behavior (e.g., drinking at parties and dances). Taken together, the increased peer anti-sociality and decreased alcohol use may indicate that victims are either disengaged from peers, or are engaged with peers who do not experiment with drugs. Their mental health problems may further exacerbate their social withdrawal (23). Youth who are victimized are most likely to benefit from programs that seek to improve their emotional and social ability to successfully engage in peer interactions.

Bullies were also significantly more likely to be young and male. While they showed a greater likelihood of having health problems, they had a lower likelihood of mental health problems (unlike any other group in the study) or the externalized and aggressive nature of bullying versus the more internalized and passive nature of victimization. Bullies were also more likely to have peers who engaged in more anti-social behavior. They had an increased likelihood of higher levels of alcohol consumption, and increased problems with parents and school atmosphere. Bullying was significantly related to all of the risk indices except for drug use. From a treatment perspective, addressing the risk factors associated with bullying may be more difficult than treating victimization. Bullying may be influenced by risk factors at an earlier age, making early intervention a priority. Given the multi-faceted nature of bullying, treatment programs may benefit from an intensive, comprehensive approach that addresses many of these risks.

Bully-victims showed a pattern of risks associated with both bullying and victimization. The odds of being a bully-victim were greatest for young males (even more so than for either bullies or victims). Drug use, mental health problems, and school atmosphere problems all significantly increased the likelihood of bully-victimization. Drug use represents a serious type of antisocial behavior, and may represent self-medication that bully-victims use to cope with their high stress levels. The lack of significant relationship with the other risk factors does not mean that they are not present in bully-victims. It could be that bully-victims are affected by both relationships, thereby canceling out the statistical predictability of those risk factors. Treatment programs for bully-

victims should target young male adolescents and focus on addressing the negative association with drug abuse, mental health, and school problems. Given the unique profile of risk factors and their high risk for negative outcomes, this group perhaps will require the most intensive intervention (35,36).

**Sub-Types of Victimization**

Amongst the sub-types of victimization, there were three different patterns of risk. The first pattern was associated with physical, rumor, and verbal victimization, the second pattern was unique to sexual victimization, and the third pattern was unique to ethnic victimization. Physical, rumor, and verbal victimization appear to concur with current general findings in the literature regarding risks associated with victimization (11,12). These two types also highlight the often-reported differences between males (physical victimization) and females (rumor). Verbal victimization occurred at fairly high levels in both sexes.

All three types of victims were likely to have mental health problems, not engage in frequent and/or heavy drinking, and have higher levels of antisocial peers. School atmosphere was not significant for rumor victimization, while drug abuse was significant only for verbal victimization. Although these three types of victimization are similar, they have slightly different patterns of risk that may require different treatment approaches. Rumor and physical victimization were the two most prevalent types of victimization, suggesting that targeting these two types of victimization would affect the greatest number of children who are victimized.

Sexual victimization had a different pattern of risk. Sexual victimization was prevalent amongst victims of both sexes. Compared to the three previous types of victimization, being young and male appeared to be less predictive of being sexually victimized. Furthermore, the prevalence of sexual victimization increases with age. Victimized males show initially lower levels of sexual victimization than victimized females, but higher levels at later ages. This finding may be related to the timing difference in sexual maturity between the sexes, with vulnerability to victimization peaking during the initial states of sexual development. Sexual victimization also appeared to be associated with a constellation of risk factors that included increased drug use. Unlike the previous types of victimization, sexual victimization was not associated with a lower likelihood of alcohol consumption. Alcohol and drug use associated with sexual victimization reflects the kind of drug-related self-medication that is reported by survivors of rape and/or sexual abuse (37). Alcohol and drug use may also make victims more vulnerable to sexual victimization.

Successful intervention programs for reducing sexual victimization should recognize the emerging vulnerabilities associated with adolescent sexual development. The program should be directed more evenly across age and sex, and should focus on those social and environmental factors that are associated with adolescent sexuality.

The risk patterns associated with ethnic victimization (the least prevalent type of victimization) suggest that it is based on a very different set of underlying risks. In contrast to other studies of substance abuse (38) ethnic victims were not significantly associated with an increase in antisocial peer behavior. Ethnic victimization may occur because these individuals are isolated from the mainstream social groups. Problems with parents may reflect parents who are unwilling and/or unable to help their children make the necessary adjustments regarding the fit of their ethnicity with

Canadian society in general.

As ethnic victimization may be related to a more general disposition towards members of other groups, programs should teach a general tolerance and respect for members of all ethnic groups. Giving parents the tools to help their adolescent in such transitions may be helpful for teaching the adolescent and improving the parent-adolescent relationship. Unlike other types of victimization, ethnic victimization does not appear to diminish in frequency with age and consequently may reflect enduring prejudices.

There were several limitations to the current study. The correlational nature of the study limited our ability to draw causal inferences. It is difficult to know whether the risk factors cause increases in bullying or victimization, or if the relationship is reversed. A second limitation is that the data are self-report. Although, researchers argue that self-report regarding bullying is fairly reliable in children (39).

It may prove fruitful for future research to examine whether different types of bullying are associated with different patterns of risk. Also, the clinical implications of the differences between patterns of risk for different types of victimization need to be studied. While it is important to uniquely target programs for each type of bullying and victimization, this may not represent a cost-effective or even cost-feasible solution. However, the prevalence of bullying and victimization amongst Canadian adolescents clearly indicates that it is a task that is deeply worthy of the undertaking.

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