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**Bullying and Victimization Among Canadian  
School Children**

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**by**

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## Executive Summary

Previous research has shown that children who are involved in bullying and victimization are at risk for developing problems later in life. Criminality, school drop out, unemployment, depression, anxiety, and reduced attainment and competence in adulthood are just some of the problems that result from being bullied or victimized in childhood.

Research using the NLSCY found that a significant proportion of school-aged children in Canada are either bullies (14%) or victims (5%). Moreover, there is little overlap in these children so that bullies are not victims at other times and victims tend not to bully others. There was a higher percentage of boys compared to girls involved in bullying. More girls reported being victimized compared to boys. These percentages of bullying and victimization are comparable to those reported from other countries.

Bullying was associated with externalizing problems, but not internalizing problems. Children who bully are also displaying other antisocial behaviours such as physical aggression, indirect aggression, and hyperactivity. They tend to engage in property crimes. Children who are victimized exhibit some of these same externalizing behaviours but are better characterized by the internalizing problems they have, such as anxiety, depression, unhappiness, and emotional difficulties. Along with the immediate effects of bullying and victimization, this behaviour has long term negative consequences for all those involved; bullies and victims alike.

It is clear that bullying starts at home. Parents, perhaps stressed because of poor finances, tend to have poor interactions with their children. These parents may be hostile or harsh, and inconsistent in the enforcement of their rules. The lack of positive interactions between parent and child serves to perpetuate aggressive behaviour and bullying. More surprisingly, victimization begins at home too. Children who are victimized come from families with a similar profile but these children react very differently. As in the case of bullying, children who are victimized come from homes where there are few positive interactions, many hostile interactions, and harsh and inconsistent punishment practices.

Schools and parents must become involved to prevent this type of behaviour from continuing. Schools need to adopt zero-tolerance policies on bullying and teach children to seek help if they become a victim. Parents need to understand how poor parenting practises can lead to bullying or victimizing behaviour in their children and how covertly supporting myths that bullying or victimization is a valuable learning experience can have damaging effects.

## Sommaire

Une recherche antérieure a démontré que les enfants qui affichent des comportements d'intimidation et de victimisation risquent de présenter des problèmes plus tard dans la vie. La criminalité, le décrochage scolaire, le chômage, la dépression, l'anxiété, des réalisations et des compétences moindres à l'âge adulte, ce ne sont là que quelques-uns des problèmes qui résultent de l'intimidation ou de la victimisation pendant l'enfance.

Une recherche inspirée des résultats de l'ELNEJ a permis de constater qu'une proportion significative d'enfants d'âge scolaire au Canada affichent des comportements d'intimidation (14 %) ou sont des victimes (5 %). De plus, il y a peu de recoupements entre ces enfants, de sorte que les intimidateurs ne sont pas des victimes à d'autres moments, et que les victimes n'ont pas tendance à manifester de comportements d'intimidation envers les autres. Il y avait une plus forte proportion de garçons que de filles chez les intimidateurs. Les filles étaient plus nombreuses à signaler avoir été victimisées que les garçons. Ces pourcentages d'intimidation et de victimisation sont comparables aux chiffres signalés par d'autres pays.

L'intimidation était associée à des problèmes d'extériorisation, mais non à des problèmes d'intériorisation. Les enfants qui affichent des comportements d'intimidation manifestent également d'autres comportements antisociaux, par exemple l'agression physique, l'agression indirecte et l'hyperactivité. Ils ont tendance à commettre des crimes contre les biens. Les enfants victimisés affichent quelques-uns de ces mêmes comportements d'extériorisation, mais se caractérisent plus souvent par les problèmes d'intériorisation qu'ils manifestent, par exemple l'anxiété, la dépression, la tristesse et des troubles affectifs. Parallèlement à leurs effets immédiats, les comportements d'intimidation et de victimisation ont des conséquences négatives à long terme pour tous, les intimidateurs comme les victimes.

Il est clair que l'intimidation commence à la maison. Les parents, peut-être sous l'effet du stress causé par des difficultés financières, ont tendance à avoir de piètres interactions avec leurs enfants. Ils peuvent se montrer hostiles ou durs, et manquer de constance dans l'application de leurs règles de discipline. Le manque d'interactions positives entre parent et enfant a pour effet de perpétuer les comportements agressifs et l'intimidation. En outre, ce qui est plus surprenant, la victimisation commence aussi à la maison. Les enfants victimisés viennent de familles qui ont un profil semblable, mais ils réagissent très différemment. Comme dans le cas des intimidateurs, les enfants qui sont victimisés viennent de foyer où il y a peu d'interactions positives, de nombreuses interactions hostiles, et des pratiques disciplinaires dures et inconstantes.

Les écoles et les parents doivent intervenir pour empêcher ce genre de comportement de se perpétuer. Les écoles doivent adopter des politiques «tolérance zéro» envers l'intimidation et montrer aux enfants à demander de l'aide s'ils sont victimisés. Les parents doivent comprendre comment de mauvaises pratiques parentales peuvent mener à des comportements d'intimidation ou de victimisation chez leurs enfants et comment le fait de renforcer indirectement le mythe voulant que l'intimidation ou la victimisation soit une expérience d'apprentissage utile peut avoir des effets dommageables.

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## 1. Introduction

Violence and aggression in schools are a problem in many countries around the world (e.g., Australia: Rigby & Slee, 1991; Canada: Pepler, Craig, Zeigler, & Charach, 1993; England: Boulton & Underwood, 1992; Smith & Sharpe, 1994; Scandinavia; Olweus, 1991). One form of aggression that takes place at school is bullying. Bullying is an interaction in which a dominant individual (the bully) repeatedly exhibits aggressive behaviour intended to cause distress to a less dominant individual (the victim) (Olweus, 1991; Smith & Thompson, 1991). In Canada, 15% of children reported bullying others more than twice a term; while 9% of children reported bullying others on a weekly basis (Charach, Pepler, & Ziegler, 1995). Along with the immediate effects of bullying and victimization, this behaviour has long term negative consequences for all those involved; bullies (Farrington, 1993), victims (Olweus, 1987) and the peer group (El-Sheik, Cummings, & Goetch, 1989). Children who are bullies tend to be bullies as adults and have children who are also bullies and children who are victimized tend to have children who are also victimized (Farrington, 1993).

Longitudinal research indicates that childhood bullying is associated with adult antisocial behaviour, such as criminality and limited opportunities to attain socially desired objectives (Farrington, 1993). Victimized children are at risk for a variety of negative outcomes: They are more anxious and insecure (Olweus, 1991); have lower self esteem (Craig, 1998), are lonely, (Boulton & Underwood, 1992), are more likely to be rejected by their peers, and are depressed (Craig, 1998) than non victimized children. There is a stable propensity to be victimized. Olweus (1978) found that adolescent boys who were victimized at age 13 were also victimized at age 16. Peers also suffer from bullying behaviour by feeling group pressure to join in the bullying. Merely observing bullying may lead to distress (e.g., El-Sheik et al., 1989). The prevalence and seriousness of bullying and victimization compels researchers to examine predictors of such behaviour. The knowledge gained can be used to design effective interventions for eliminating or at least curtailing this problem.

The topic of bullying and victimization is a relatively new area of research and the majority of the research is descriptive. As a result, the field is lacking theoretical models of bullying and victimization behaviour. The purpose of this paper is to test a model of bullying and victimization that considers both individual and family factors that may contribute to the

development of bullying and victimization behaviours. The model is based on a model of aggressive children's social interactions (cf., Pepler, Craig, & Roberts, 1995) and previous research. In the model, there is a recognition of individual factors (such as disruptive behaviours for the bully and anxious behaviours for the victim) which may interact with family factors to increase the likelihood of a child becoming a bully or a victim. At present the risk factors underlying the development of a predisposition to be bullied or victimized are unclear. Some individual characteristics (such as aggressiveness) may play a direct role, while others may have an indirect influence through family factors. Below, we briefly review the literature on individual and family factors contributing to bullying and victimization.

### 1.1 Individual Characteristics of Bullies and Victims

In general, researchers have found that bullies can be characterized as aggressive toward their peers, teachers, parents, siblings, and others; hence, their bullying behaviour is stable across contexts (i.e., home and school) (Lane, 1989). Male bullies are more impulsive and physically stronger, have a more positive attitude to violence, and a higher need to dominate others than their peers (Olweus, 1987). Stephenson and Smith (1989) found that bullies are generally active and assertive, easily provoked, and attracted to situations with aggressive content. Bullies have little empathy for their victims and little or no remorse about bullying (Olweus, 1984). This positive attitude to violence and aggressive situations may contribute to the bully's behaviour and the stability of the behaviour over time (Stephenson & Smith, 1989). These behaviours are referred to as externalizing problems. Externalizing problems refer to a range of under controlled behaviours, and include symptoms such as aggression, hyperactivity, disruptive behaviour, and inattention. In contrast to boys, there are limited data on girls who bully and how bullying their bullying may change with age. Thus, in the present study the relationship between externalizing behaviour problems (i.e., hyperactivity, conduct problems, inattention, aggression) and bullying for both boys and girls in different age groups will be examined. *It is hypothesized that bullying behaviour will be positively related to externalizing problems for both boys and girls. Because, behaviours become more stable with age, it is predicted that with increasing age, the relationship among externalizing behaviour problems and bullying and victimization will increase.*

Although interpersonal aggression involves two participants, an aggressor and a victim, researchers in the past typically have focussed on the aggressor. Consequently, we know very



little about the role of the victim during these aggressive interactions and individual differences in children's tendencies to become a victim. Researchers have portrayed the prototypical victim as a weakling or "whipping boy" who acquiesces to the aggressor's demands (Olweus, 1978; 1984; Patterson et al., 1967). In general, the majority of children nominated as victims are passive, anxious, weak, lacking self confidence, unpopular with other children, and have low self esteem (Craig, 1998; Olweus, 1991). Thus, victims typically display behaviours that are described as internalizing problems (e.g., depression, anxiety, social phobias). Internalizing problems refer to a range of over controlled behaviours and internal distress. Symptoms of internalizing disorders may include: high levels of anxiety, depression, somatic complaints, and withdrawal. The present study examines the relationship between internalizing problems and victimization and how this relationship may change with age in boys and girls. *It is hypothesized that victimization will be positively related to internalizing problems (i.e., anxiety, depression) and this relationship will be similar for boys and girls.*

A third group of children report being both bullies and victims (bully/victims) (five percent of the Canadian sample) (Pepler et al., 1994). Stephenson and Smith (1987) speculate that the hostility directed by these children toward their victims is fuelled by their own experiences of victimization. The validity of the bully/victim category is currently under dispute. Olweus (1978) argued there was no overlap between bullies and victims; however, his research indicated that 1 in 10 bullies were victims and 1 in 18 victims were also bullies (Olweus, 1991). Roland (1989) found that 20% of victims were bullies and that their bullying was directed against children who did not bully them. A summary of the literature indicates that depending on the study, the percentage of self-reported bully/victims ranges from 3% to 66% (Mellor, 1990; O'Moore & Hillery, 1989). Huesmann et al. (in press) found in a longitudinal study that there were very few victimized children who were not aggressive. Huesmann et al. (in press) argue that aggressive victims may inadvertently promote and maintain aggressive behaviour. To the extent that the victim responds with aggressive and antisocial behaviour of his/her own, the acceptability of aggression in the culture is promoted even when the victim is punished. The present study examines the relationship of bullying to victimization in order to clarify the similarities and differences in these behaviours. *It is hypothesized that bullying and victimization will be correlated with one another.*

## 1.2 Family Factors Contributing to Bullying and Victimization

These underlying individual characteristics may interact with family conditions that serve to promote bullying and victimization behaviours. In this study, we examined both family demographics (e.g., income and education of the parents) and family socialization variables that may contribute to bullying and victimization. According to Patterson (1982), the effects of these family demographic variables on the development of children's aggressive behaviour are mediated by family socialization practices (i.e., parenting) which break down under stressful family circumstances. Patterson and Dishion (1988) found that stress (i.e., low income, unemployment, lack of education) within the family exacerbated parents' antisocial tendencies, which in turn lead to harsh and inconsistent parental discipline practices. These disciplinary practices may in turn contribute to an increase in children's aggressive behaviour patterns. In summary, family demographics may have an indirect effect on the development of aggression and bullying through family socialization processes. *We hypothesize that family demographics will have an indirect effect on bullying and victimization through family socialization practices.*

Research on aggressive behaviour has indicated that children's socialization experiences within the family play a major role in the development of aggressive behaviours (Patterson, 1986). Family influences on the development of aggression that have been examined include: family demographics (e.g., socioeconomic status), parenting techniques (e.g., harsh and inconsistent discipline), and parent-child relationships (e.g., number of positive and negative interactions) (Loeber & Stouthamer-Loeber, 1986). Patterson and his colleagues have described in detail how the breakdown of parenting practices and family management may provide the breeding grounds for aggressive behaviour problems (Patterson et al., 1992). Their research indicates that family members directly train the child to perform antisocial behaviour by being noncontingent in their use of both positive reinforcers for prosocial behaviour and effective punishment for problematic behaviours. The result of these parenting practices are many daily interactions in the family in which aggressive and coercive behaviours are reinforced and prosocial behaviours not attended to. Some of the reinforcement for the negative behaviours comes from attending, laughing, or approving of the behaviour, while other reinforcement is a result of escape-conditioning contingencies. Escape conditioning contingencies occur when the child uses aggressive or aversive behaviours to terminate an aversive response from another family member. In these interactions, when one family member behaves aversively, others respond in kind, and an

aversive exchange ensues and escalates until one family member gives in. Because continuation and escalation of the aversive behaviours successful terminates the other member's aggressive behaviour, each family member is likely to use the aversive behaviour on future occasions. In these interactions, the child learns that negative behaviours are successful and over time tries to control other family members through these coercive means.

In the families of aggressive children there seem to be two processes: Parents of aggressive children support the use of aversive and aggressive behaviours in their children by inadvertently reinforcing aggressive behaviour in their children and by failing to adequately reinforce prosocial behaviour (Patterson, 1982). As a consequence, parents of aggressive children appear to fail in teaching compliance and appropriate social problem solving and instead positively reinforce aggressive and coercive behaviour. Within the family context, aggressive children's are unbalanced in favour of learning antisocial, aggressive behaviours. *Extrapolating from this research on aggressive children, we hypothesize that bullying behaviour will be related to hostile and few positive family interactions.* Few researchers have examined the contribution of these variables to victimization. Consequently, in this study we explore the relationship between hostile and positive family interactions and victimization.

The families of aggressive children are also characterized by harsh and inconsistent punishment practices. Longitudinal studies have provided evidence supporting the relationship between poor parental disciplinary practices (i.e., erratic or inconsistent or overly harsh and punitive) during childhood and the incidence of delinquency in adolescence (Olweus, 1979). Poor and erratic discipline contributes to the development of aggressive behaviour because parents fail to consistently label, track, and provide consequences for negative behaviour. Consequently, a large number of children's behaviours go unpunished, and some of the behaviours are punished excessively. Furthermore, parents' use of harsh punishment practices may serve to model aggressive and antisocial modes of problem solving and relating to others. Similar family behaviour patterns of may be operating in families of bullies. *We hypothesize that harsh and inconsistent punishment practises will be related to bullying behaviour.* To date, there is little research on the role of family demographics and socialization practises for victims. The present study considers the role of hostile and positive interactions and punitive practises in contributing to bullying and victimization behaviours for boys and girls, across three age groups.

In summary, individual and family factors may contribute to the development of bullying and victimization. The present study compares the relative contribution of these factors in boys and girls attending school ranging in age from 4 to 11. *It is hypothesized that family demographics will be directly related to family functioning and indirectly related to externalizing behaviours and bullying. Externalizing problems will be related to bullying, while internalizing problems will be related to victimization. Finally, these associations will be similar for boys and girls, but with increasing age the associations will be stronger.*

## 2. Method

### 2.1 Participants

Respondents were parents of children aged four to 11 who were attending school and participating in the Cycle 1 of the National Longitudinal Study of Children and Youth (NLSCY). Table 1 presents the number of boys and girls in each of the three age groups, their mean age, and the standard deviation of their age.

**Table 1: Ages of Each Cohort**

	Age 4 to 6			Age 7 to 9			Age 10 to 11		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Boys	2418	4.99	0.82	2221	7.99	0.82	1023	10.49	0.5
Girls	2309	4.95	0.82	2236	7.98	0.81	1101	10.51	0.5

### 2.2 Measurement Model

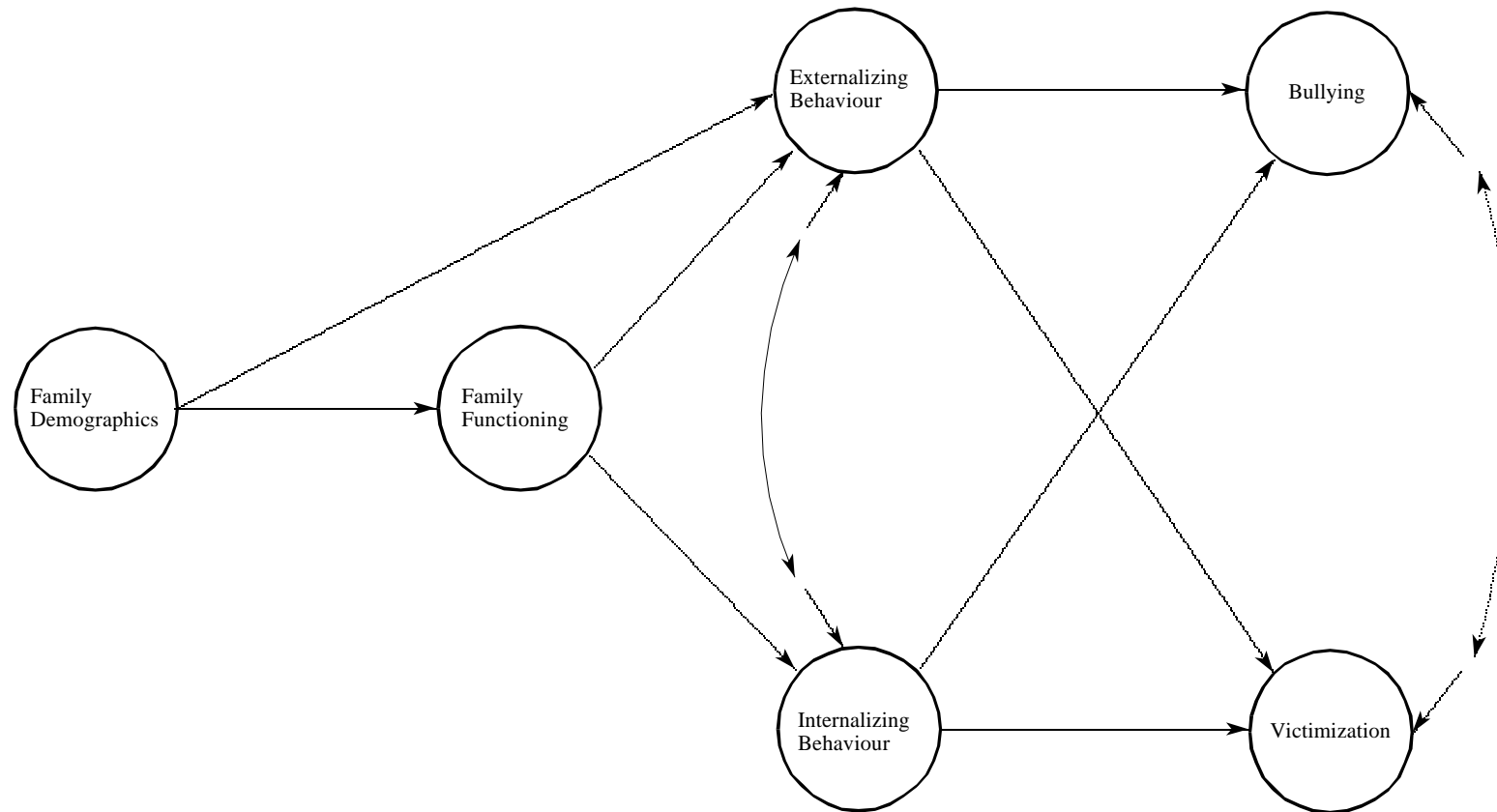
Latent variables are those representing theoretical constructs (i.e., abstract). Parent rating scales of family demographics, family functioning, and child behaviours were used to form the six latent composite variable: (1) family demographics (parents' education, household income, and age of parents); (2) family functioning (Positive interaction, hostile interaction, consistency, and punitive practises); (3) externalizing behaviour problems (physical aggression, indirect aggression, property offenses, hyperactivity, and prosocial behaviour); (4) internalizing behaviour problems (emotional problems), (5) victimization (parent ratings of victimization), and (6) bullying (parent ratings of bullying). The measures are briefly described in Table 2.

### 2.3 Models and Statistical Analysis

The bullying and victimization model was estimated with LISREL 8 (Jöreskog & Sörbom, 1996), using weighted least squares (WLS) estimation. The bullying and victimization model is an application of the full LISREL model that comprises two major parts: (a) the measurement submodel which specifies the relationship of directly observed to latent variables (the hypothetical underlying constructs, such as family demographics, family functioning, internalizing and externalizing problems, bullying and victimization); and (b) the structural submodel which specifies the relationship among the latent variables (e.g., the relationship of bullying to victimization). See the figure on page 9 for the model of bullying and victimization that was tested.

Table 2: Summary of Measures

Measure	NLSCY Measure	Description
Family demographics	5 items were included in the construct: parent education, household income, and the age of each of the parents.	Parent's education Household income (In dollars), Age of parents (in years)
Family functioning	Parent Questionnaires: Positive interaction (5 items), hostile interaction (7 items), consistency (5 items), and punitive practises (5 items).	Interval measure of certain aspects of parenting behaviours. Items are responded to on 5 point-Likert types scale. For the positive interaction and consistency scales higher scores indicate more positive behaviours. For the remaining scales higher scores indicate more negative interactions.
Externalizing behaviour problems	Parent Questionnaires: physical aggression (6 items), indirect aggression (5 items), property offenses (6 items), hyperactivity (8 items), and prosocial behaviour (10 items).	Interval measure of children's behavioural functioning. Items responded to on a 3-point Likert type scale. With the exception of the prosocial scale, higher scores indicating more behavioural problems. For the prosocial scale a higher score indicates more social skills.
Internalizing behaviour problems	Parent Questionnaire: emotional problems (7 items)	Interval measure of children's anxiety, depression, and happiness. Items are responded to on a 3 point Likert type scale, with higher scores indicating more internalizing problems.
Victimization	Parent ratings of victimization	Single items asking if a child is bullied. Items are responded to on a 3 point Likert type scale, with higher scores indicating more victimization.
	Child ratings of victimization	Single item asking if a child is bullied by others.
Bullying	Parent ratings of bullying	Single items asking if a child bullies others. Item is responded to on a 3 point Likert type scale, with higher scores indicating more bullying.
	Child ratings of bullying	One item asking if a child is cruel, bullies, or is mean to others.

**Model of Bullying and Victimization**

### 3. Results

#### 3.1 National Trends of Bullying and Victimization

Parents were asked if their children were bullying others or bullied at school. In addition, children aged 10 and 11 were also asked how often they bullied others or were bullied at school. Table 3 presents the percentages of children who are involved either as victims or bullies sometimes or very often. For all age groups, parents report that more boys are bullying others compared to girls. For both boys and girls, there is an increase in victimization by bullying with age. For boys, self-reported rates of both bullying and victimization is higher than parent reported rates. For girls, parent and self reports of bullying and victimization are similar.

**Table 3: Prevalence of Bullying and Victimization in Canada**

	Parent Report		Self Report	
	Boys	Girls	Boys	Girls
<u>Ages 4-6</u>				
Bullying	14.4%	9.4%	-*	-
Victimization	4.9%	4.4%	-	-
<u>Ages 7-9</u>				
Bullying	14.8%	7.9%	-	-
Victimization	4.0%	7.4%	-	-
<u>Ages 10-11</u>				
Bullying	13.0%	9.2%	17.2%	8.7%
Victimization	8.6%	9.1%	13.6%	8.1%

\* Data were not collected in these age groups.

#### 3.2 Testing a Model of Bullying and Victimization

The goal of this study was to evaluate the role of family demographics and socialization, and externalizing and internalizing behaviours in bullying and victimization. The model tested is depicted in the figure on page 9. Results indicate that the model was the same for boys and girls in each of the three age cohorts: 4-6, 7-9, and 10-11 year olds. No across group constraints, testing interaction and main effects of sex and age, were imposed in this stage of the analysis. Except for the relationship between bullying and victimization, data indicate that all of the pathways were significant.



Results indicate that the model describes well the contributions of family demographics and family socialization to externalizing and internalizing behaviours and bullying and victimization. To test whether a model is a good fit to the data, the models are evaluated by the chi-square statistic, adjusted goodness-of-fit index (AGFI), the root mean square error of approximation (RMSEA), and the comparative fit index (CFI). AGFI values above .90 indicate adequate model fit (Jöreskog & Sörbom, 1993). The RMSEA is a measure of discrepancy between the true population model and the hypothesised model per degree of freedom, and, consequently, it favours more parsimonious models. RMSEA of .05 indicate a close fit, and values up to .10 represent reasonable errors of approximation (Browne & Cudeck, 1993). Finally, the CFI measures how much better the model fits as compared to a baseline (independence) model. CFI above .90 indicate a reasonable fit (Jaccard & Wan, 1996). In the present study, the values of the AGFI ranged between .91 and .93, the CFI was equal to 1, and the RMSEA was between .052 and .061, in the six samples in which the model was examined. These statistics are presented in Table 4 for each of the age and sex groups.

**Table 4: Model Fit: Baseline Model**

Sample	$\chi^2$	df	RMSEA	AGFI	CFI
Boys: 4 -6	717.32*	83	0.056	0.92	1
Girls: 4-6	659.23*	83	0.055	0.92	1
Boys: 7-9	693.81*	83	0.058	0.92	1
Girls: 7-9	598.84*	83	0.052	0.93	1
Boys: 10-11	399.41*	83	0.061	0.91	1
Girls: 10-11	357.03*	83	0.055	0.93	1
Comparison	3416.63*	498			

Note: \* p < .001

The standardized and unstandardized coefficients are presented in Table 5. These coefficients indicate the strength of association between variables and whether or not there is a significant relationship between the variables. From this Table, three features of the model are worth noting. First, the hypothesised correlation between bullying and victimization was not significant in each age and sex sample, indicating the independence of the two variables. That is, for boys and girls of all ages, bullying and victimization are not related to one another. Second, internalizing

problems were not related to bullying. Finally, the effect of parent demographics on family functioning was not significant for 7-9 and 10-11 girls, indicating no effect of parent demographics on family functioning for girls in the older age cohorts. However, for boys of all ages, the effect of family demographics to family functioning was significant.

**Table 5: Standardized and Unstandardized Coefficients for the Model**

Unstandardized Coefficients										
Sample	$\gamma_{1,1}^*$	$\gamma_{2,1}$	$\beta_{2,1}$	$\beta_{3,1}$	$\beta_{4,2}$	$\beta_{5,2}$	$\beta_{4,3}$	$\beta_{5,3}$	$\Psi_{3,2}$	$\Psi_{5,4}$
Boys 4-6	0.05	0	-1.3	-1.4	0	0.2	0.14	.00 n.s.	0.66	.00 n.s.**
Girls 4-6	0.09	0	-0.7	-1	0	0.1	0.14	.01 n.s.	0.31	.00 n.s.
Boys 7-9	0.03	0	-1.4	-1.4	0	0.13	0.13	.00 n.s.	1.20	.00 n.s.
Girls 7-9	0.01 n.s.	0	-0.7	-1.2	0	0.1	0.14	.00 n.s.	0.56	.00 n.s.
Boys 10-11	0.09	0	-0.7	-1.2	0	0.1	0.13	.01 n.s.	0.95	.00 n.s.
Girls 10-11	0.01 n.s.	0	-0.7	-1.8	0	0.1	0.13	.00 n.s.	0.46	.00 n.s.
Standardized Coefficients										
Sample	$\gamma_{1,1}^*$	$\gamma_{2,1}$	$\beta_{2,1}$	$\beta_{3,1}$	$\beta_{4,2}$	$\beta_{5,2}$	$\beta_{4,3}$	$\beta_{5,3}$	$\Psi_{3,2}$	$\Psi_{5,4}$
Boys 4-6	0.15	0	-0.7	-0.4	0	0.48	0.99	0.03	0.23	-0.01
Girls 4-6	0.24	0	-0.8	-0.4	0	0.34	0.99	0.07	0.2	-0.01
Boys 7-9	0.11	0	-0.7	-0.4	0	0.65	1	0.03	0.31	-0.01
Girls 7-9	0.03	0	-0.7	-0.4	0	0.4	0.99	0.05	0.29	0
Boys 10-11	0.16	0	-0.6	-0.4	0	0.43	1.02	0.09	0.38	-0.02
Girls 10-11	0.03	0	-0.7	-0.4	-1	0.36	1	-0.1	0.31	0.01

Notes: \* Denotes the pathways that correspond with coefficients  
 \*\* Denotes nonsignificant pathway  
 $\gamma_{1,1}$  Family demographics to family functioning  
 $\gamma_{2,1}$  Family demographics to externalizing behaviour  
 $\beta_{2,1}$  Family functioning to externalizing behaviour  
 $\beta_{3,1}$  Family functioning to internalizing behaviour  
 $\beta_{4,2}$  Externalizing behaviour to victimization  
 $\beta_{5,2}$  Externalizing behaviour to bullying  
 $\beta_{4,3}$  Internalizing behaviour to victimization  
 $\beta_{5,3}$  Internalizing behaviour to bullying  
 $\Psi_{3,2}$  Externalizing behaviour to internalizing behaviour  
 $\Psi_{5,4}$  Bullying to victimization

The next set of analyses addressed the question of whether the model and the relative strength of the paths in the model were similar for boys and girls of all ages? According to Jaccard and Wan (1996), a multi sample strategy was adapted in the present study. The tests of the interaction and main effects involved fitting an unconstrained and a number of constrained models, where each of the constrained models addressed a specific across group invariance hypothesis. This test examined if there were age or sex differences in the models. The hypotheses were assessed by the change in the chi-square value, denoted as  $\Delta\chi^2$ , between the unconstrained and a specific constrained model. In the first and a preliminary step of the analysis, of the interaction and main effects of our two moderator variables (age and sex), we simultaneously examined the invariance of the six

parameters (family functioning to externalizing behaviour problems, family functioning to internalizing behaviour problems, externalizing problems to victimization, internalizing problems to victimization, externalizing problems to internalizing problems, bullying and victimization) across the six samples of children. As can be seen in Table 6, the  $\Delta\chi^2(\Delta df=30, N=11308) = 164.29$  is highly significant, indicating that at least one of the six parameters was not invariant across the six groups of children. Subsequent analyses, separately testing the invariance of each parameter, revealed that four parameters, (family functioning to externalizing problems, family functioning to internalizing problems, externalizing problems to victimization, bullying and victimization) were not equal across the six samples of children, indicating the presence of either an interaction or main effect(s) of age and sex. Furthermore, two parameters (internalizing to victimization, and externalizing and internalizing problems) were equal in the six groups, indicating there were no age or sex differences in these pathways (see Table 6).

**Table 6: Test of Invariance Across Sex and Age**

Parameter	$\chi^2$	df	$\Delta\chi^2$	$\Delta df$
All 6 parameters	3580.92	528	164.29**	30
Family functioning on externalizing behaviour	3458.19	503	41.56**	5
Family functioning on internalizing behaviours	3427.98	503	11.35*	5
Externalizing behaviours to victimization	3428.26	503	11.63*	5
Internalizing behaviours to victimization	3425.87	503	9.24	5
Externalizing behaviours to internalizing behaviours	3466.21	503	49.58**	5
Bullying to victimization	3426.04	503	9.41	5

Notes: \*  $p < .05$ ; \*\*  $p < .001$

Next, we tested whether there was an interaction between sex and age for the parameters (family functioning to externalizing, family functioning to internalizing, externalizing to victimization, and externalizing and internalizing behaviour problems) for which the previous analysis revealed the lack of invariance across the six samples. That is, we examined whether the moderating effect of sex on the path coefficients differ as a function of age. The results are summarized in Table 7. As can be seen, only three contrasts, a sex effect at 6-7 vs. a sex effect at 10-11 for the slope coefficients of family functioning to externalizing behaviour problems and family functioning to internalizing behaviour problems, and a sex effect at 6-7 vs. a sex effect at 10-11 for the slope coefficients of family functioning to externalizing behaviour problems, were

statistically significant. In other words, the two moderators (sex and age) interacted only for the path coefficients family functioning to externalizing problems and family functioning to internalizing problems, and the analysis revealed the lack of interaction between sex and age for externalizing to victimization and externalizing and internalizing.

**Table 7: Sex by Age Interaction Effects**

Interaction Contrasts <sup>+</sup>	4-6 years vs. 7-9 years		4-6 years vs. 10-11 years		7-9 years vs. 10-11 years	
	$\chi^2$ (499)	$\Delta\chi^2$ (df=1)	$\chi^2$ (499)	$\Delta\chi^2$ (df=1)	$\chi^2$ (499)	$\Delta\chi^2$ (df=1)
Family functioning to externalizing problems	3416.78	0.15	3423.72	7.09**	3426.23	9.60**
Family functioning to internalizing problems	3417.19	0.56	3422.97	6.34*	3420.45	3.82
Externalizing problems on victimization	3416.85	0.22	3416.63	0	3416.67	0.04
Externalizing to internalizing problems	3418.95	2.32	3417.11	0.48	3417	0.37

Notes: \*  $p < .05$ ; \*\*  $p < .01$ ; + The difference between boys and girls within each age group is compared to the difference between boys and girls in the second age group.

In the final step of the analysis, we examined the sex and age main effects, for the four model parameters, family functioning to externalizing problems, family functioning to internalizing problems, externalizing problems to victimization, and externalizing to internalizing problems for which there was either an age by sex interaction, or an age and/or sex main effect. For the two path coefficients (family functioning to externalizing and family functioning to internalizing) for which there was a significant age by sex interaction, the analysis of each effect was conducted separately within each level of the other moderator variable (either sex or age).

The results of the analysis of the age main effects are summarized in Table 8. For the boys, the slope coefficient of family functioning to externalizing behaviour problems has not significantly changed,  $\Delta\chi^2(\Delta df=1, N=11308) = 0.23, ns$ , between the 4 to 6 and 7 to 9 age cohorts, indicating no age differences between 4 and 9 for this pathway in the model. However, for the oldest cohort the slope coefficient diminished significantly in magnitude,  $\Delta\chi^2(\Delta df=1, N=11308) = 12.75, p < .001$ . Thus, at age 10-11, the strength of association between family functioning and externalizing problems was lower than it was for boys between ages 4 and 9. For the girls, age had no effect on the magnitude of this path coefficient,  $\Delta\chi^2(\Delta df=2, N=11308) = 0.01, ns$ . Turning to the slope of family functioning to internalizing behaviour problems, the analysis revealed that, while for boys, age had no significant effect,  $\Delta\chi^2(\Delta df=2, N=11308) = 0.79, ns$ . For girls, the

association between family functioning and internalizing behaviour was not significantly different,  $\Delta\chi^2(\Delta df=1, N=11308) = 2.54, ns$ , between the 4 to 6 and 7 to 9 age cohorts, but had significant increased in magnitude for the oldest cohort,  $\Delta\chi^2(\Delta df=1, N=11308) = 9.87, p < .01$ . Thus, this association increased in strength with age. With respect to the externalizing behaviour problems to victimization path coefficient, the analysis revealed that the nature of the age main effect was such that, while there was no change,  $\Delta\chi^2(\Delta df=2, N=11308) = 0.28, ns$ , between the 4 to 6 and 7 to 9 age cohorts, the magnitude of the coefficient significantly,  $\Delta\chi^2(\Delta df=2, N=11308) = 8.98, p < .05$ , increased for the oldest (10 to 11) age cohort. Finally, the nature of the age main effect on changes in the strength of the relation between externalizing behaviour problems and internalizing behaviour problems was such that the covariation significantly,  $\Delta\chi^2(\Delta df=2, N=11308) = 17.45, p < .001$ , increased between the 4 to 6 and the 7 to 9 age cohorts. However, the covariance parameter did not significantly,  $\Delta\chi^2(\Delta df=2, N=11308) = 2.15, ns$ , change between the 7 to 9 and the 10 to 11 age cohorts.

The results of the analysis of the sex effects are summarized in Table 9. Sex had a significant effect on the slope of family functioning to externalizing behaviour problems only for the 4 to 6,  $\Delta\chi^2(\Delta df=1, N=11308) = 11.49, p < .001$ , and the 7 to 9,  $\Delta\chi^2(\Delta df=1, N=11308) = 20.14, p < .001$ , age groups. The path coefficient was consistently lower for boys than for girls in the same age groups. However, for the oldest (10 to 11) age group, sex had no significant,  $\Delta\chi^2(\Delta df=1, N=11308) = 0.03, ns$ , effect. With respect to the slope of family functioning to internalizing behaviour problems, the analysis revealed that, while sex had a significant effect,  $\Delta\chi^2(\Delta df=1, N=11308) = 4.18, p < .05$  for the youngest age cohort, sex had no effect in the 7 to 9,  $\Delta\chi^2(\Delta df=1, N=11308) = 0.62, ns$ , and the oldest,  $\Delta\chi^2(\Delta df=1, N=11308) = 0.62, ns$ , age groups. Finally, the analysis revealed that, sex had no effect on the externalizing behaviour problems to victimization path coefficient ( $\beta_{4,2}$ ),  $\Delta\chi^2(\Delta df=3, N=11308) = 1.87, ns$ . Sex had a significant effect, however, on the covariance between externalizing behaviour problems and internalizing behaviour problems,  $\Delta\chi^2(\Delta df=3, N=11308) = 35.66, p < .001$ , with the covariance being consistently higher for boys than that for girls in the same age cohort.

**Table 8: Test of Age Main Effects**

Gender	$\chi^2$	df	$\Delta\chi^2$	$\Delta df$
<u>Boys</u>				
Family functioning to externalizing	3429.73	500	13.10*	2
4-6 vs. 7-9	3416.86	499	0.23	1
4-6 vs. 10-11	3426.69	499	10.08**	1
7-9 vs. 10-11	3429.38	499	12.75***	1
Family functioning to internalizing	3417.42	500	0.79	2
<u>Girls</u>				
Family functioning to externalizing	3416.64	500	0.01	2
Family functioning to internalizing	3426.52	500	9.89*	2
4-6 vs. 7-9	3419.17	499	2.54	1
4-6 vs. 10-11	3426.5	499	9.87**	1
7-9 vs. 10-11	3420.31	499	3.68	1
<u>Boys and Girls</u>				
Externalizing to victimization	3426.26	502	9.63*	4
4-6 vs. 7-9	3416.91	500	0.28	2
4-6 vs. 10-11	3424.69	500	8.06*	2
7-9 vs. 10-11	3425.61	500	8.98*	2
Externalizing to internalizing	3436.8	502	20.17***	4
4-6 vs. 7-9	3434.08	502	17.45***	2
4-6 vs. 10-11	3421.26	502	4.63	2
7-9 vs. 10-11	3418.78	502	2.15	2

Notes: \* p &lt; .05; \*\* p &lt; .01; \*\*\* p &lt; .001

**Table 9: Test of Sex Main Effects**

Age	$\chi^2$	df	$\Delta\chi^2$	$\Delta df$
<u>Age : 4-6</u>				
Family functioning to externalizing	3430.12	499	13.49***	1
Family functioning to internalizing	3420.82	499	4.18*	1
<u>Age: 7-9</u>				
Family functioning to externalizing	3436.77	499	20.148**	1
Family functioning to internalizing	3417.25	499	0.62	1
<u>Age: 10-11</u>				
Family functioning to externalizing	3416.66	499	0.03	1
Family functioning to internalizing	3419.87	499	3.24	1
<u>All Age Groups</u>				
Externalizing to victimization	3418.5	501	1.87	3
Externalizing to internalizing	3452.29	501	35.66***	3

Notes: \* p &lt; .05; \*\*\* p &lt; .001

## 4. Discussion

This study examined the prevalence of bullying and victimization in Canada, and the individual and family factors contributing to these behaviours. The results indicate that a significant number of children in Canada experience bullying and victimization at school. In addition, bullying others was not associated with being victimized by others. Finally, children who were involved in bullying others had other related mental health problems (i.e., externalizing and internalizing problems). Specifically, bullying others was related to externalizing problems, while being victimized by others was related to both internalizing and externalizing problems. The associations among externalizing and internalizing problems and bullying and victimization were different for boys and girls at different ages. Finally, family factors (i.e., demographics and family functioning) were indirectly related to bullying and victimization.

### 4.1 National Trends of Bullying and Victimization

In Canada, about one in seven boys between the ages of 4 and 11 (14%) bully others and approximately one in 20 (5%) are victimized by others sometimes or very often. Approximately one in 11 girls between the ages of 4 and 11 (9%) bully others, while one in fourteen are victimized (7%). For both boys and girls, however, victimization increased with age. At all ages, there was a higher percentage of boys compared to girls involved in bullying. More girls aged seven to nine reported being victimized compared to boys. For the youngest and oldest age groups, boys and girls were equally likely to be victimized. These percentages of bullying and victimization are comparable to those reported from other countries. For example, in Norway, in a nation-wide survey, 15% of students reported involvement in bully/victim problems "now and then" or more frequently. In Great Britain, Stephenson and Smith (1989) found that 23% of children in their British sample were either bullies or victims. The prevalence of bullying and victimization in Canada highlight the need to design and implement effective interaction programs.

For children aged 10 and 11 years old, there were some differences between the parents' reports of bullying and children's self reports. Compared to parents' reports, a higher percentage of boys reported bullying others or being bullied. For girls, the percentages of bullying and victimization were relatively similar to parents' reports. Since aggression is more atypical of girls, it may that parents may be more likely to be aware of their daughters bullying than their sons. With respect

to victimization, compared to boys, girls may be more willing to tell parents when it occurs, consequently parents' reports are similar to the self reports from girls. One aspect of intervention programs to combat bullying and victimization should be increasing parents' awareness of bullying and victimization behaviours in both boys and girls, as well as associated behaviour problems.

## **4.2 Individual Factors Contributing to Bullying and Victimization**

There are some important trends emerging from this cross-sectional data. First, for both boys and girls of all ages, bullying and victimization were not related to each other. Children who bully others tend not to be victimized by others. Similarly, children who are victimized tend not to bully others. Thus, programs should be designed that are specifically aimed for bullies and for victims since they may display different types of problematic behaviours.. In addition, since there are different children who are bullies and victims, the number of children that are involved in bullying and victimization in Canada is particularly of concern.

Second, for both boys and girls at all ages, bullying was associated with externalizing problems, but not internalizing problems. Thus, children who bully are also displaying other antisocial behaviours such as physical aggression, indirect aggression, hyperactivity, and engaging in property crimes, as well as demonstrating few prosocial behaviours. Bullying may be one of many types of aggressive and antisocial behaviour that these children display. Children who bully have a significant number of overt problem behaviours that may be easily identified. The negative short and long term prognosis associated with these types of behaviours highlights the need for early identification of these children.

Third, for boys and girls of all ages, victimization was associated with both externalizing and internalizing behaviour problems. Children who are victimized are characterized by the behaviour problems that bullies experience as well as internalizing problems such as anxiety, depression, unhappiness, and emotional problems. Children who have internalizing problems are more easily aroused (Rubin, Coplan, Fox, & Clakins, 1995) and may have difficulty in regulating their emotional expressions and as a result may manifest this problem with heightened anxiety which may lead to further victimization. In fact, the high anxiety in children with internalizing problems may make them particularly susceptible to displaying extreme emotional reactions. Evidence does support this reactivity notion in that victims tend to cry easily, are manifestly



anxious, lack humour, lack self confidence, and self esteem, and reward their attackers by being submissive (Olweus, 1978, Patterson et al., 1967; Perry et al., 1988).

In addition, for older children, the strength of the association between externalizing problems and victimization increased with age suggesting that with increasing age, these problems are both likely to present. Thus, victims have significantly more problems than bullies and a more intensive intervention may be required for them. The problematic behaviour of victims is also more diverse than bullies and may not be as easily identified. For example, since internalizing problems such as anxiety and depression are not readily observable, they may be more likely to go undetected compared to externalizing behaviours such as aggression and disruptive behaviour. Furthermore, research has demonstrated that despite that fact that one in three children report their primary fear is abuse at the hands of their peers, they are unlikely to report such behaviour to an adult (Olweus, 1991).

It is important to note that from this cross-sectional data, it is not possible to determine if the externalizing or internalizing problems developed before the bullying or victimization behaviours. It may be that children who are bullied become aggressive as a consequence of their own experiences of being victimized. Alternatively, some victims may be bullied because they are aggressive towards others. Researchers have found that aggressive victims are more likely to display a hostile style of interaction, are disruptive, aggressive, and argumentative (Perry et al., 1988). These behaviours may serve to irritate and provoke other children, especially bullies, and may lead to future victimization. Future longitudinal research will allow for an examination of these types of issues.

### **4.3 Family Factors Contributing to Bullying and Victimization**

Family demographics and family socialization processes had an indirect on bullying and victimization. Low socioeconomic status, unemployment, and being young parents was related to negative parenting practises and externalizing behaviour problems in children. It is likely that family stress (as measured by family socioeconomic status) contributes to few positive and increased hostile interactions between parents and their children, and inconsistent and harsh punishment practises. These types of interactions may serve to perpetuate aggressive behaviour and bullying through several processes. First, a parent who is aggressive toward her children models aggression and the combined use of aggression and power. Secondly, through coercive

parenting practices parents train their children in the use of antisocial behaviours (Patterson, 1982). Thirdly, harsh parenting practices promote children to develop hostile attitudes and orientations to others in their social environments. The aggressive behaviours may then be generalized to the school where they are manifested in the form of bullying and other aggressive behaviours. These family processes are likely occurring in the families of bullies.

Family demographics also may have an indirect effect on victimization. As in the case of bullying, children who are victimized may come from homes where there are few positive interactions, many hostile interactions, and harsh and inconsistent punishment practices. These negative interactions in the home may contribute to the development of victimization. There is evidence to suggest that children who develop victimization problems are more likely than nonvictimized peers to have family histories of insecure attachment, child abuse, and poorly managed family conflict (Perry, Perry, & Kennedy, 1992). These children may enter school with significant exposure to aggressive, angry, and conflictual situations in the home and may react to peers who bully them with similarly high anxiety. This behaviour may contribute to their continued victimization as the bully will feel rewarded in triumphing over the victim.

The role of family processes on bullying and victimization are influenced by the age and sex of the children. For example, for boys, the association between family functioning and externalizing behaviours (which are related to both bullying and victimization) decreased for the 10 and 11 year olds. For girls, there were no age differences in this association. Thus, for boys the influence of negative family interactions on externalizing problems and bullying becomes less salient with age whereas as for girls the influence of the family functioning remains constant with age. In contrast, for girls, the association between family functioning and internalizing behaviour (which is related to victimization) increased for the 10 and 11 year olds. For boys, there were no age differences in this association. Taken together, these results indicate that it may be that the indirect effect of family socialization on externalizing behaviours problems is stronger for younger boys and the indirect effect of the family on internalizing problems and victimization is more important for girls than boys. The indirect role on family demographics and functioning on bullying and victimization highlights the importance of supporting families in order to decrease bullying and victimization.

#### 4.4 Limitations of the Research

There are some limitations to the present study. The results are based on cross sectional data. Longitudinal research is needed to test the developmental pathways to bullying and victimization. In addition, longitudinal research will allow for the testing of causal models. A second limitation of the research is that reports of bullying and victimization in the model tested were based on parent report. There are discrepancies between adults' and children's reports of bullying and victimization. There is a lower prevalence of these behaviours in responses from adults than responses from children. Finally, all the measures were collected concurrently. It is possible that there are alternative explanations with regards to the direction of the effects. For example, variables we have conceptualized as causing victimization may actually be outcomes of a third untested variable (i.e., history of abuse).

#### 4.5 Social Policy Implications

Bullying and victimization at school is a significant problem in our country. Children who are involved in bullying and victimization are at risk for developing problems later in life such as criminality, school drop out, unemployment, depression, anxiety, and generalized levels of reduced attainment and competence in adulthood (Olweus, 1989). In addition, bullying and victimization and their associated behaviour problems are not only chronic, but are often transmitted across generations (Farrington, 1993). Finally, the monetary costs of chronic involvement in bullying and victimization are high: These children generate life-long costs because they are involved in multiple systems such as the mental health, juvenile justice, special education, and social services. Interrupting this pattern of behaviour is a critical issue. Thus, the implications from this study are important to both the development of social policy and prevention and intervention programs. Both of social policy and prevention/intervention programs should be aimed at direct (i.e., externalizing and internalizing behaviour problems) and indirect (i.e., family demographics, family functioning) influences on bullying and victimization.

Because bullying happens at school, schools need to develop and implement anti-bullying policies. Along with the staff and parents, the principal should implement a policy of zero tolerance for bullying, an appropriate discipline program, and opportunities for professional development for teachers. The principal and school staff can work to develop a school ethos with the aims of changing attitudes towards bullying and creating a school climate that will not

tolerate aggressive acts towards fellow students. Preventing bullying in the school can be incorporated into a larger school effort ensuring equity among students (e.g., between sex, among cultural groups). In order to change behaviour patterns and attitudes that underlie bullying and victimization, interventions must be extensive and address the problem with individual bullies and victims, the peer group, the school environment, and the families. Research has indicated that antibullying programs that are ecological in design with an implementation at the school, class, and individual levels are successful in reducing bullying by 50% over three years (Olweus, 1991; Pepler et al., 1993).

Children who are victimized have other mental health problems. These problems, as well as the victimization need to be addressed. The definition of bullying implies that the victim is less powerful than the bully and unable to defend himself/herself. The first step in assisting victims is to encourage them to report bullying incidents so that an adult can intervene. Teachers can provide support for victims to help them develop skills and strategies to avoid further victimization. These include teaching victims when and where to go for help and training victims in the skills of resisting and asserting themselves. Efforts should be made to enhance the self-image of victims, perhaps by providing opportunities for them to achieve attention and recognition within their peer group (e.g., peer pairing).

Interventions with bullies should address their specific deficits. Interventions with bullies should teach empathy, problem-solving, social skills, and self-regulation. To redirect bullying behaviours, the bully might be provided with other means of experiencing leadership in the class and school. Because bullying is also associated with externalizing and internalizing behaviour, these mental health issues also need attention.

The indirect influence of family demographics and family socialization practices on bullying and victimization, underscores the need to address these issues from a policy perspective. First, parents need to be educated and informed about bullying and victimization problems, on the signs of bullying and victimization and ways to talk with their children about any difficulties they might be experiencing. The myths of bullying that are covertly supporting it could be dispelled (e.g., it is a valuable learning experience). The parents have a particularly important role in providing consistency in the approach to bullying problems across school and home contexts. With an awareness of the problem, parents may become increasingly able to recognize

when bullying or victimization occurs at home between siblings, between parents and children, or between the parents themselves.

Because of the indirect effect of family factors, resources should be allocated to high risk families, such as those with low income or unemployment. These types of stressors in the family are related to poor parenting practices such as many hostile and few positive interactions with the children and harsh punishment. Programs need to be developed to support not only the child, but the parents. The programs for children could involve individual or group counselling to provide a forum for these children to express their concerns and anxieties, to help them develop appropriate social skills, as well as provide more supervision outside of school. Improving the children's social skills may also reduce the risk of developing both internalizing and externalizing behaviour problems. Programs for the parents could include increased financial resources or support. These could take the form of the community programs for their children or direct payment to facilitate their ability to financial support their family. In addition, a community based support service could be provided to help the family cope with the stress and help the family develop more positive and prosocial ways of interacting. This service could take a preventive approach where workers could meet regularly with the family and act as information, educational, and emotional support.

## 5. Conclusion

A significant number of Canadian children bully others or are bullied at school. This research tested a model of bullying and victimization that examined the direct and indirect effects of family functioning and internalizing and externalizing behaviour problems on bullying and victimization. Bullying and victimization are associated with other mental health problems, as well as family issues such as low income and negative parenting. It was found that parenting and family management practices directly and indirectly contribute and interact with individual behavioural attributes (externalizing and internalizing problems) which then contribute to bullying and victimization. Early identification of these problems either within the family or in the individual may reduce problems that some Canadian children experience at school in the form of being bullied or bullying others. Social policies aimed at developing school based anti-bullying programs, supporting families with low incomes and educational levels, and providing parenting education would facilitate reducing this societal problem of bullying and victimization.

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