



Peer Victimization from Kindergarten to Grade 2

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QLSCD 1998-2010 in brief

This fascicle is based on data from the *Québec Longitudinal Study of Child Development* (QLSCD 1998-2010) which is being conducted by the Institut de la statistique du Québec (Québec Institute of Statistics) in collaboration with various partners (listed on the back cover). The goal of this study is to gain a better understanding of the trajectories which, during early childhood, lead to children's success or failure in the education system.

The target population of the QLSCD comprises children (singleton births) born to mothers residing in Québec in 1997-1998, with the exception of those whose mother, at the time of the child's birth, was living in certain administrative regions of the province (Nord-du-Québec, Terres-Cries-de-la-Baies-James and Nunavik) or on Indian reserves. Certain children were also excluded because of constraints related to the sample frame or major health problems. The initial sample eligible for longitudinal monitoring comprised 2,120 children. The children were monitored annually from about 5 months to 8 years of age, and then biannually up to the age of 12 when they finished elementary school. A round of data collection has been made this year (2011), with most of the children now in their first year of high school (Secondary 1).

The QLSCD employs a variety of data collection instruments to gather data on the child, the person most knowledgeable of the child (PMK), her or his spouse/partner (if applicable), and the biological parent(s) not residing in the household (if applicable). During each data collection round, the child is asked to participate in a variety of activities designed to assess development. As of the 2004 round, the child's teacher is also being asked to respond to a questionnaire covering various aspects of the child's development and adjustment to school. Further information on the methodology of the survey and the sources of data can be accessed on the website of the QLSCD (also known as "I Am, I'll Be"), at www.iamillbe.stat.gouv.qc.ca.



The problem of pupils being victimized by their peers is not a recent phenomenon. As mentioned by Card and Hodges (2008) in their synthesis of the topic, Thomas Hughes in his popular 1857 novel *Tom Brown's Schooldays* had described the suffering endured by a young boy who was a victim of meanness on the part of his classmates. A century and a half later, researchers such as Dan Olweus (1978; Norway) and Perry, Kusel and Perry (1988; U.S.) picked up the torch and reminded us that this reality is very much alive and comprises the daily experience of many pupils. Since then, many researchers around the world have focused on this phenomenon in order to gain a better understanding of it, and suggest possible strategies to prevent it (see for example the many papers on this theme presented at the Biennial Meeting of the Society for Research in Child Development [2011]). According to a literature review by Card and Hodges (2008), victimization by peers is not a marginal phenomenon from 30% to 60% report having been victimized by their peers at least once during the school year and from 6% to 15% say they have been victimized weekly. However, the proportion of students chronically victimized, namely over a period of years, remains poorly known. A study conducted a number of years ago in the greater metropolitan region of Québec City suggested that approximately 15% of pupils in elementary school had been chronically victimized, namely for a period of at least four years (Boivin et al., 2010).

The Québec Longitudinal Study of Child Development (see box entitled *QLSCD 1998-2010 in brief* on this page) has also been interested in this issue, and the results of the first few analyses conducted on children in their early years of school is the main topic of this fascicle. We examine victimization trajectories of children from kindergarten to Grade 2,² and assess to what degree certain individual and socio-familial

factors are associated with them. In addition, we cover associations between victimization and the children's feeling of attachment to their school. The results presented here can provide guidance for future prevention actions and contribute to gaining a better understanding of this phenomenon in elementary school.

Definition of victimization

Peer victimization is defined as aggressive behaviours repeatedly perpetrated by one or more children or youth on another child or youth, in a context wherein the perpetrator has the advantage of size, age, popularity, etc. vis-à-vis the victim (or in a context where there is an imbalance of power) (Boivin, Hymel and Hodges, 2001). The aggressive behaviours can be of a physical nature (such as shoving, hitting, taxing), verbal (such as name-calling, insulting, threatening), or social (such as saying hurtful things behind the back of someone, circulating false rumours, excluding someone from a group – what we will call indirect aggression). Added to these types of violence is harassment or intimidation by various means of electronic communication such as texting, emailing, and website postings. These constitute cyber-bullying (Ministère de l'Éducation, du Loisir et du Sport [MELS], 2011). Therefore, peer victimization includes phenomena such as intimidation and taxing (robbery)³ committed by one or more children on another child. According to whether these acts are examined from the point of view of the perpetrators or targets, we are referring to what are commonly called “bullies” or “victims.”

According to Card and Hodges (2008), only about half of victimized children in elementary school and as few as 15% of victimized youth in high school alert school staff to their situation. The remaining children believe that this will accomplish nothing or fear reprisals. Teachers and parents rarely witness episodes of victimization because they occur in various locations, often sheltered from the watchful eye of adults. The absence of adults in the school yard likely increases the probability that these episodes of victimization happen. Indeed, though insulting and mocking occur in classrooms, corridors and hallways, threats and assaults are most often committed in common areas, such as the school yard, corridors, cloakrooms, washrooms, cafeterias, school buses, on the way to and from school, etc., unbeknownst to teaching staff (Juvonen and Graham, 2001; MELS, 2010a). The presence of children who manifest indifference or approval while witnessing acts of violence around them has also been associated with a greater incidence of episodes of victimization (Salmivalli, 2010).

History, correlates and consequences

Children who are victimized by their peers are sometimes chosen because of their physical appearance (obesity, height, skin color, distinctive clothing), a handicap (hearing or motor as well as mental, visual or language disabilities) or another characteristic that differentiates them from their peers (low marks, excessive anxiety, etc.) (Centre québécois de ressources en promotion de la sécurité et en prévention de la criminalité, 2005).

For example, QLSCD data have already shown that children who are overweight around the age of 7 years are more likely to be laughed at by their peers, as reported by their teachers (Desrosiers, Dumitru and Dubois, 2009). The association between victimization and weight problems could however be bi-directional. Thus, among girls, peer victimization seems to contribute to their weight problem throughout elementary school (Qualter et al., submitted for publication). Even though as a general rule boys are more exposed than girls to episodes of victimization, girls seem to be more exposed to them when weight is a factor. A statistical portrait of Québec based on a large-scale survey conducted by Statistics Canada (*Participation and Activity Limitation Survey – PALS 2006*) revealed that the more severe the disabilities⁴ among children 5-14 years of age, the more likely they are to be victims of threats of assault as well as actual physical attacks or assault (Camirand et al., 2010).

However, it seems that social behaviours are the most important predictors of victimization. Indeed, victimized children more often than not have an atypical behavioural repertoire – they are more likely to lack social skills and have difficulty in asserting themselves (Card, Isaacs and Hodges, 2007, 2008). They also tend to be socially withdrawn, since their self-esteem is lower and they have more depressive affects than their peers (Boivin and Hymel, 1997). Some longitudinal studies have shown that these behavioural and socio-affective characteristics may be at the origin of episodes of victimization. They are also the consequences of these episodes since these distress signs tend to increase following victimization experiences. (Arseneault et al., 2008; Boivin et al., 2010; Boivin, Hymel and Bukowski, 1995; Perren and Alsacker, 2009).

One behavioural aspect that seems systematically associated with peer victimization is the presence of restless, turbulent behaviours, particularly of the hyperactivity or reactive-aggressive kind (Boivin and Hymel, 1997; Poulin and Boivin, 2000). Hyperactive or reactive-aggressive children constitute both a source of provocation and a target for aggressive children (Lamarche et al., 2006). In addition, the stability

and persistence of personal characteristics associated with victimization can explain the link between experiences of victimization at a preschool age and first experiences of victimization in elementary school (Barker et al., 2008).

Certain parenting practices such as overprotectiveness (particularly of boys), hostility and negligence also merit attention (Barker et al., 2008; Finnegan, Hodges and Perry, 1998; Ladd and Ladd, 1998). Even though these parenting practices are related to behavioural problems in children, part of their predictive link with victimization experiences follows a trajectory that seems independent of the behavioural characteristics of children. Other socioeconomic or sociodemographic factors, such as family structure and/or ethnic origin, also appear to be associated with the risk of peer victimization, although these associations are not always consistent across studies (Card and Hodges, 2008; Verkuyten and Thijs, 2001).

Even though certain children are usually victimized by just a few of their classmates, they tend to be ignored or avoided by the other children. This social desertion may contribute to their feelings of distress and lack of social skills. It can also translate into a reduced social network and lack of friends or allies who otherwise could protect them from potential aggressors (Boivin and Hymel, 1997; Boivin and Vitaro, 1995; Hodges, Boivin et al., 1999; Lamarche et al., 2006). Even for those who have friends or allies, the latter are also often victimized and are therefore less likely to provide adequate protection (Card and Hodges, 2008). It seems that acts of aggression can have negative consequences not only for the victims, but also for the witnesses to such acts, namely increased externalized behavioural problems, increased feelings of insecurity, absenteeism, and a decrease in academic motivation (Janosz et al., 2008).

Recent research based on data from the QLSCD suggests that engaging in sports activities can attenuate the risk of depressive feelings in victimized children (Perron-Gélinas et al., 2010a). Participating in sports activities, however, does not seem to lower victimized children's risk of presenting externalized behavioural problems (Perron-Gélinas et al., 2010b).

With regards to the experience of school, it seems that many children victimized by their peers do not like school (Buhs, Ladd and Herald, 2006). They tend to be absent often and their academic performance is below average (Schwartz et al., 2005). However, the direction of the association is not clear. Is low attachment to school a precursor or a consequence of peer victimization? In the absence of studies of a longitudinal and transactional nature (namely bi-directional) that begin at school entry, little is known of the magnitude and direction of these associations. It may be that victimization and school attachment reinforce one another and that the association is

bi-directional. It is also possible that the association between victimization and school attachment can be explained by a third variable that may be common to the children, such as hyperactivity. Finally, the mediating and moderating mechanisms likely to explain the association between victimization and low attachment to school remain poorly known even though some studies have addressed the issue (Buhs et al., 2006; Konishi et al., 2010; Ladd, Kochenderfer and Coleman, 1997; Thijs and Verkuyten, 2008).

Objectives of this Fascicle

Based on QLSCD data, this fascicle has three objectives:

1. Identify peer victimization trajectories in the early years of schooling, namely from kindergarten to Grade 2, based on children's questionnaire responses. .
2. Examine associations between certain individual and socio-familial characteristics measured in kindergarten, and victimization trajectories.
3. Assess the relationships among victimization and school attachment trajectories of the children.

Methods of analysis

First, descriptive analyses were conducted to establish the prevalence and trends of various victimization behaviours from kindergarten to Grade 2 (see Box 1). Secondly, trajectory modeling of victimization for this same timeframe was conducted (see Box 2).

Then, taking into account certain theoretical and methodological aspects such as response rates and availability of data, we examined associations between belonging to a particular victimization trajectory and certain variables such as the sex of the child, internalized and externalized behavioural problems, coercive parenting practices, and socioeconomic status of one or both parents as assessed when the child was in kindergarten. This was done using, bivariate logistic regressions (for more details, see Appendix A.1).

To analyze associations between victimization and attachment to school, children's school attachment trajectories were calculated. Then they were compared to victimization trajectories using joint trajectory modeling (see Boxes 1 and 2).

Note that the trajectory analyses covered children for whom we had a score on the victimization scale from kindergarten to Grade 2 and data for the set of variables under study (n = 1,010 children).

All the data presented here were weighted and therefore adjusted to allow for generalization of the results to the target population of the QLSCD. In addition, the complex sample design was taken into account in calculating the precision of the estimates and in the conducting of statistical tests when feasible. It should be noted that the results cover a cohort of children born in Québec at the end of the 1990s. Therefore excluded were children who arrived in Québec after their birth, comprising 9% of children 8 years of age in 2006.⁵

Box 1

Measuring victimization and school attachment in the QLSCD

Victimization

Victimization was assessed using responses to seven items on the *Paper Questionnaire Administered to the Child* (PQAC). Around the ages of 6 years (kindergarten, 2004 round), 7 years (Grade 1, 2005 round) and 8 years (Grade 2, 2006 round),⁶ the children were asked how often, since the beginning of the school year,⁷ *a child in their school had called him/her names or said bad things to him/her; a child had said bad things about him/her behind his/her back; had prevented him/her from playing in a group when he/she wanted to; a child had pushed, hit or kicked him/her; a child had teased him/her in a mean way; a child had taken away things that belonged to him/her without his/her permission, without giving them back; a child had deliberately broken something that belonged to him/her.* The response choices were: 1- "Never," 2- "Once or twice,"

3- "More often." Based on these responses, scores with values between 0 and 10 were calculated on a scale for each survey round. Each scale presented good reliability (Cronbach alphas between 0.74 et 0.90 according to the grade level).

School attachment

The level of school attachment was measured using responses to the Paper Questionnaire Administered to the Child (PQAC). At about the ages of 6 years (kindergarten, 2004 round), 7 years (Grade 1, 2005 round) and 8 years (Grade 2, 2006 round), the child was asked whether he/she liked school; was happy to go to school when he/she got up in the morning; liked learning new things such as reading and writing; looked forward to seeing the other children in his/her class when going to school; liked playing with other children at school. The response choices in 2004 were: 1- "A little," 2- "Medium," 3- "A lot." The choice 1- "Not at all" was added in 2005 and 2006. Based on responses to these questions, scores were calculated on a scale from 0 to 10 for each survey round. Each scale presented good reliability (Cronbach alphas between 0.72 and 0.79 according to the grade level).

Box 2

Trajectory analysis

Trajectory analysis provides a means of identifying distinct trajectories in a given population and estimating the proportion of this population in each trajectory (Nagin, 2005; Nagin and Tremblay, 2005; Nagin and Tremblay, 1999). Assigning a population to a given trajectory is based on a probabilistic method. Therefore the estimated proportions represent the approximate population following the same developmental trajectory. To determine the optimal number of victimization and school attachment trajectories, models incorporating between one and five trajectories were tested. In each case, the choice of an optimal model was based on Bayesian Information Criterion (BIC) and convergence analyses.

The joint trajectory method provides a means of estimating the percentage of children belonging to a trajectory as a function of belonging to another trajectory and vice-versa, and the percentage of children in each possible dyad of association between the two groups of trajectories (victimization and attachment).

Modeling of each trajectory and joint trajectories was conducted using the “traj” procedure in the SAS computer program. The “risk” procedure in this program was used to analyze the factors related to the victimization trajectories. It provided a means of accounting for the variable probability of the children of belonging to a victimization trajectory. Since this procedure does not provide a means of taking into account the design effect, a threshold of 0.01 was set to conclude that a result was significant at the threshold of 0.05.



Results

Prevalence and trends over time of victimization behaviours from kindergarten to Grade 2

It is encouraging to see that the majority of children, between 52% and 79% depending on the behaviour and grade level analyzed, (see Appendix A.2 for detailed results) reported *never* having been subjected to experiences where bad things were said about them behind their back, personal belongings were taken from them or broken on purpose by another child. However, approximately a quarter or more of the children, between 25% and 37% depending on the behaviour and year analyzed, reported having *often* been victims of behaviours such as being called names, being pushed, hit or kicked, or being teased.

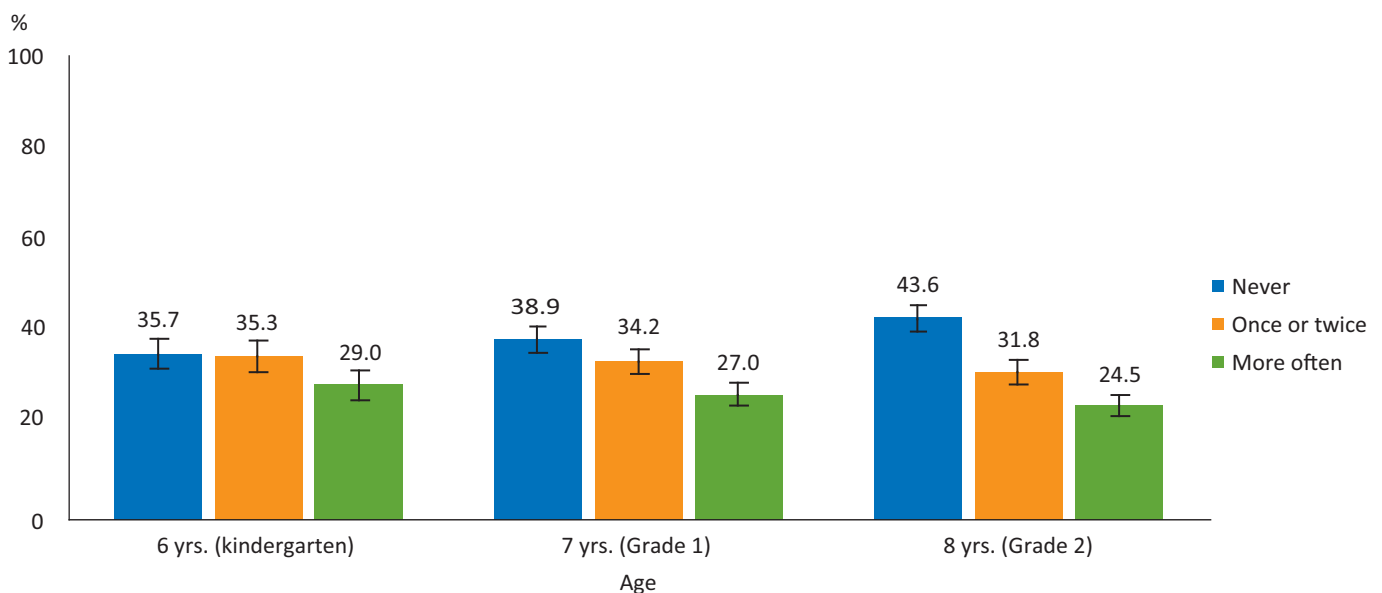
In terms of trends over time, certain victimization behaviours tended to decrease between kindergarten and Grade 2. Indeed, compared to those in kindergarten, a higher proportion of children in Grade 2 reported never having been pushed, hit or kicked (44% vs. 36%) (see Figure 1). Similarly, the proportion of children reporting having had personal belongings taken

from them *often* without their permission (more than twice) decreased in Grade 1 and Grade 2 compared to that in kindergarten (9% and 8% vs. 15% respectively) (see Figure 2). Noteworthy is that the proportion of children having had their personal belongings broken on purpose by another child *often* (more than twice) decreased between kindergarten and Grades 1 and 2 (11% vs. 4% and 3%) (see Figure 3).

As indicated in Appendix A.2, irrespective of the grade level, certain behaviours were more frequently manifested by children acting alone (taking personal belongings without asking, deliberately breaking things), while other behaviours, such as being prevented from playing in a group, were attributed to being engaged in by more than one child. With regards to being called names, it was reported in Grade 2 to involve many children acting together, while in kindergarten, it involved children acting either alone or in a group.

Finally, according to the grade level, between 8% and 10% of children reported not being the target of any act of intimidation or aggression. Therefore, the vast majority of children reported indeed having been the victim of at least one behaviour being measured. However, only a tiny proportion of children (1% or less⁸) reported being the target of all the behaviours under study often.

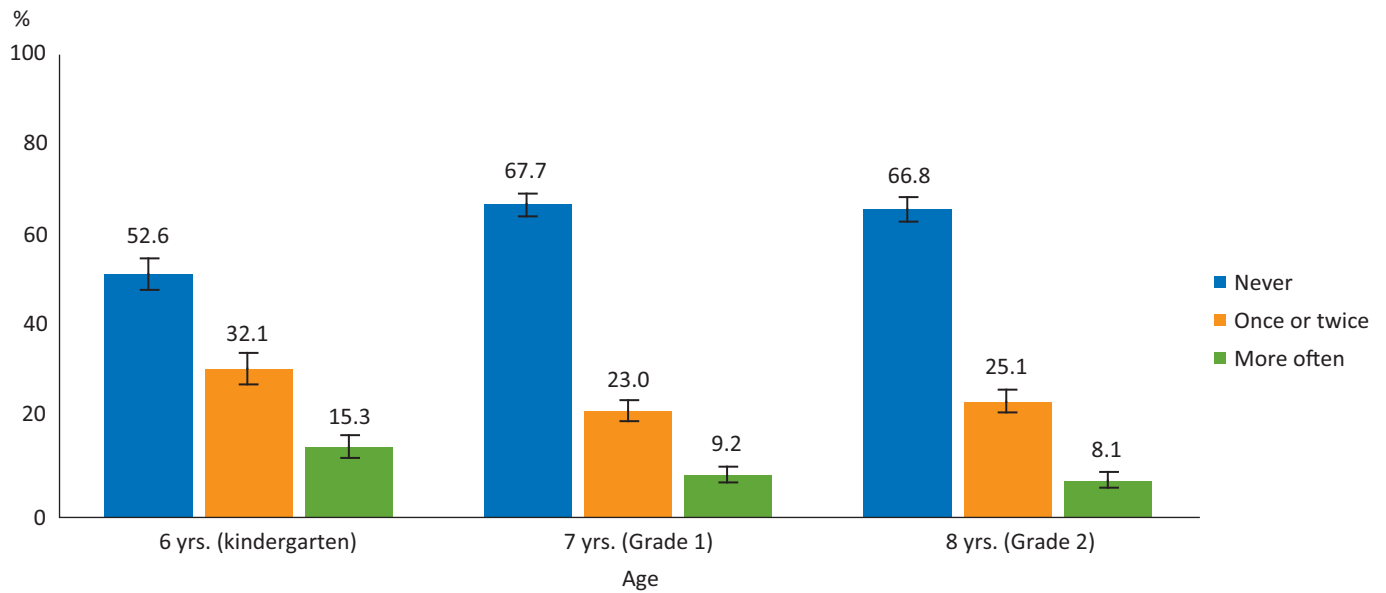
Figure 1
Children's reported frequency of being pushed, hit or kicked, by age,¹ Québec, 2004 to 2006



1. Children born in Québec, 1997-1998.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

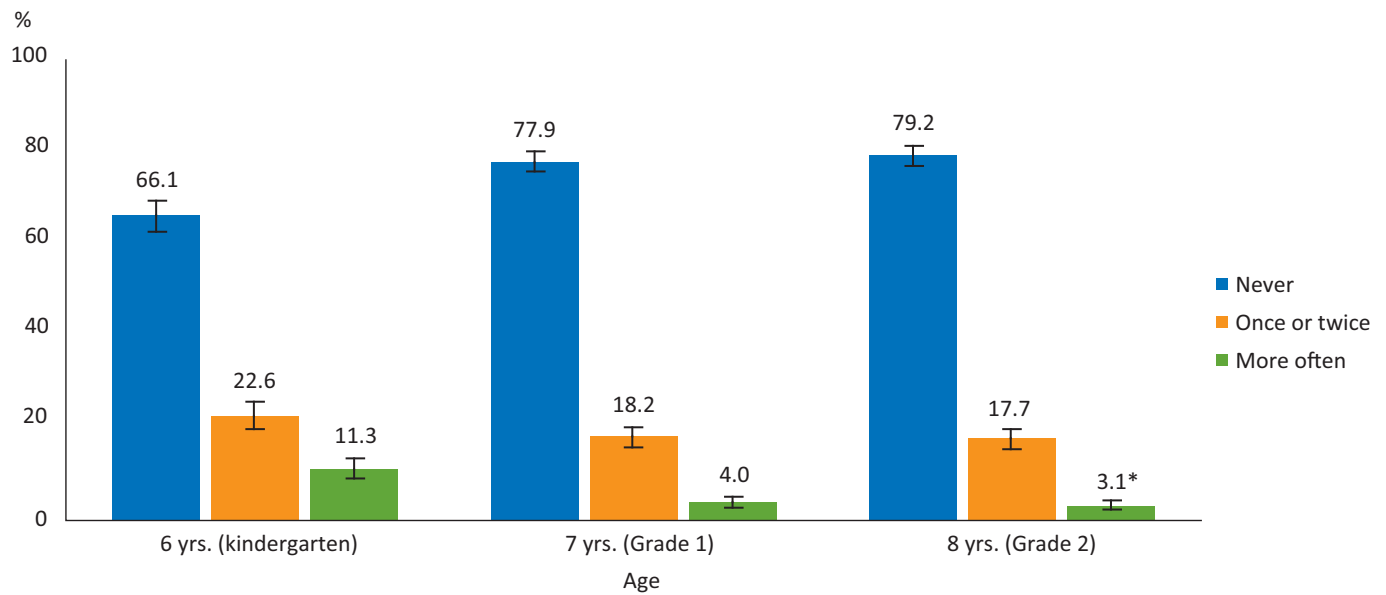
Figure 2
Children's reported frequency of having personal belongings taken from them without their permission and not getting them back, by age,¹ Québec, 2004 to 2006



1. Children born in Québec, 1997-1998.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Figure 3
Children's reported frequency of having a personal belonging deliberately broken by another child,¹ by age, Québec, 2004 to 2006



* Coefficient of variation between 15% and 25%; interpret with caution.

1. Children born in Québec, 1997-1998.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Victimization trajectories

Figure 4 presents three victimization trajectories from kindergarten to Grade 2 based on data from the QLSCD. Slightly more than a third of children (37%) were relatively unlikely to have been the object of victimization behaviours during this period (*low victimization trajectory*). These children had a score of around 2 on the victimization scale (maximum score 10), indicating they reported few or no incidents of this nature. Slightly more than half of children (53%) were in the *moderate victimization trajectory* (scores of around 4 out of 10), indicating they would sometimes be targeted with many behaviours or often with certain behaviours. The last trajectory, undoubtedly the most worrying, comprised 10% of the children, those manifesting a *high victimization trajectory* in the first few years of elementary school (scores of around 7 out of 10).

Individual and socio-familial characteristics associated with victimization trajectories

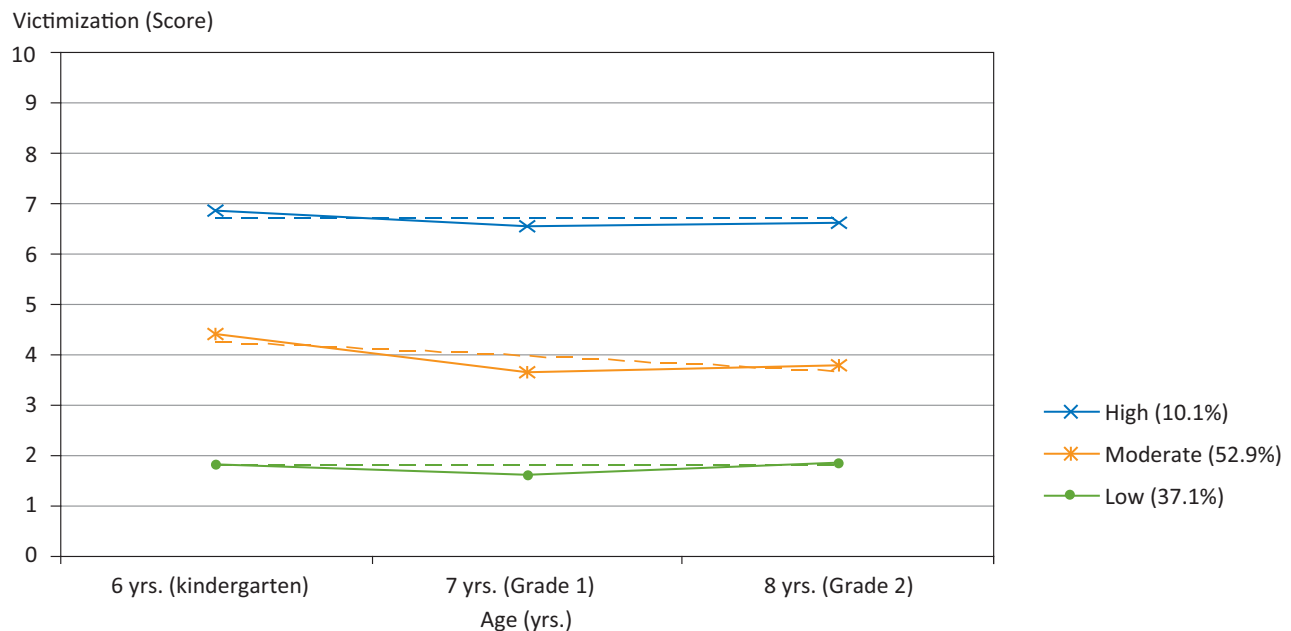
When we examined the five factors under study separately, three were associated with the probability of belonging to victimization trajectories. Children with a higher score on the scale of externalized behavioural problems and those whose parents reported using coercive practices were more likely to be in the high or moderate victimization trajectories. Though the probability of being in a high trajectory was not differentiated by sex, the fact of being a boy was however associated with a higher risk of being in

the moderate rather than low victimization trajectory. No significant association was observed between belonging to a victimization trajectory in the early years of elementary school and symptoms of internalized behavioural problems or household socioeconomic status when the children were in kindergarten. However, it should be noted that the characteristics associated with being in diverse trajectories were interrelated. For example, externalized behavioural problems were strongly associated with coercive parenting practices, and boys were more likely to present such problems or be the object of these practices (data not shown). Given the strong correlation among externalized behavioural problems, coercive parenting practices and the fact of being a boy, more in-depth analyses would be required to discern their respective contribution to the probability of being on one or another victimization trajectory.



Figure 4

Victimization trajectories of children from 6 to 8 years of age,¹ Québec, 2004 to 2006



1. Children born in Québec, 1997-1998.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Table 1
Certain characteristics associated with the probability of being in a victimization trajectory from the age of 6 to 8 years,¹ odds ratios based on multinomial bivariate logistic regressions, Québec, 2004 to 2006

	Odds ratio ^{2,3}	
	Moderate victimization	High victimization
Externalized behavioural problems	1.21 [†]	1.49 [†]
Internalized behavioural problems	0.93	1.13
Coercive parenting practices	1.39 [†]	1.79 [†]
Socioeconomic status	0.95	0.84
Boys	1.44 [†]	0.73

1. Children born in Québec 1997-1998.

2. The reference trajectory was the group of children in the low victimization trajectory. An odds ratio higher than 1 indicates that the children presenting a given characteristic or a higher score in a given scale were more likely to be assigned to the high or moderate victimization trajectory, while an odds ratio lower than 1 indicates they were less likely.

3. Threshold: † = 0.05. Since the complex sample design could not be taken into account, the confidence intervals associated with the estimates are not presented.

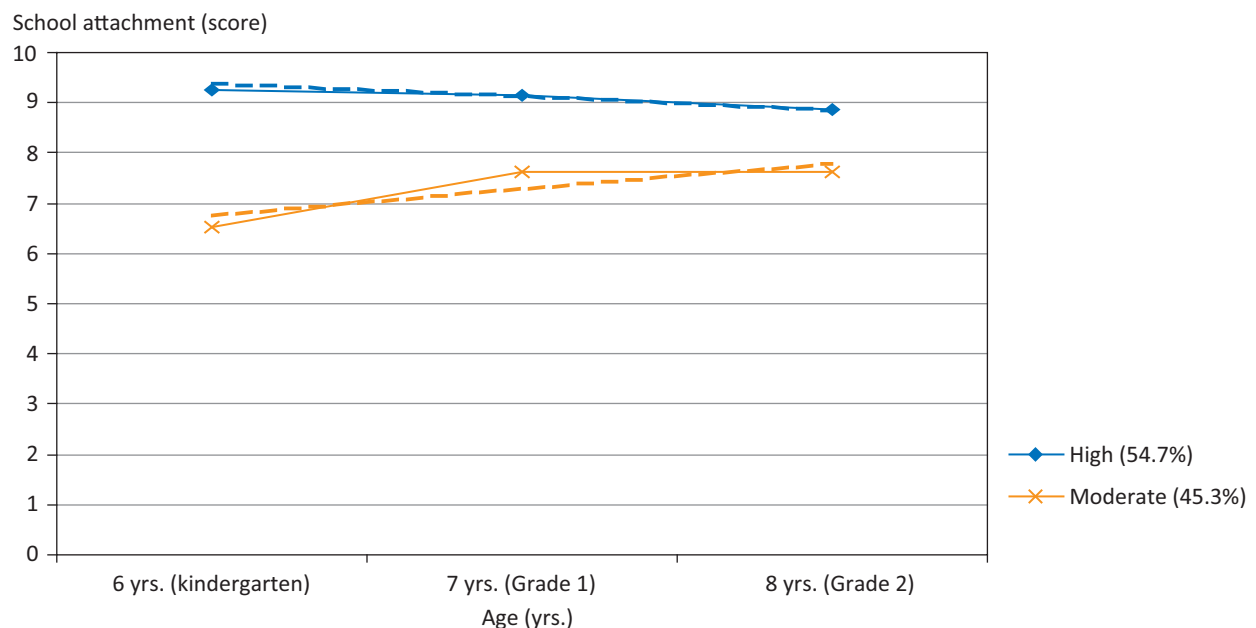
Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Associations between school attachment and victimization

To analyze associations between victimization and school attachment, we produced school attachment trajectories, as was done for victimization. The analysis revealed that children generally presented moderate to high attachment to school in the first few years of schooling (Figure 5). The two groups obtained were the following: children more likely

to be in a moderate trajectory of school attachment (45%; scores of around 7 or 8 out of 10), and children more likely to be in a high trajectory of school attachment (55%; scores around 9 out of 10). There was indeed a small proportion of children who reported low attachment to school in the period under study (2%; data not shown). However, these children did not follow a trajectory significantly different from the aforementioned two groups of children.

Figure 5
School attachment trajectories in children from 6 to 8 years of age,¹ Québec, 2004 to 2006



1. Children born in Québec, 1997-1998.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Joint trajectory analyses were then conducted to examine associations between victimization and school attachment over time. Joint trajectory modeling provides a means of obtaining an easily comprehensible summary of the combined trajectories of these two types of behaviour.

Figure 6 shows associations between victimization and school attachment in three different ways. The first (A) illustrates the probability of being in one or another victimization trajectory conditional on belonging to each of the two school attachment trajectories. Upon examining the results we can see that 40% of children assigned to the high school attachment trajectory found themselves in the low victimization trajectory, while this was the case for 30% of those manifesting moderate school attachment. In contrast, only 7% of children the most attached to school were in the high victimization trajectory, compared to 15% of those who manifested moderate school attachment.

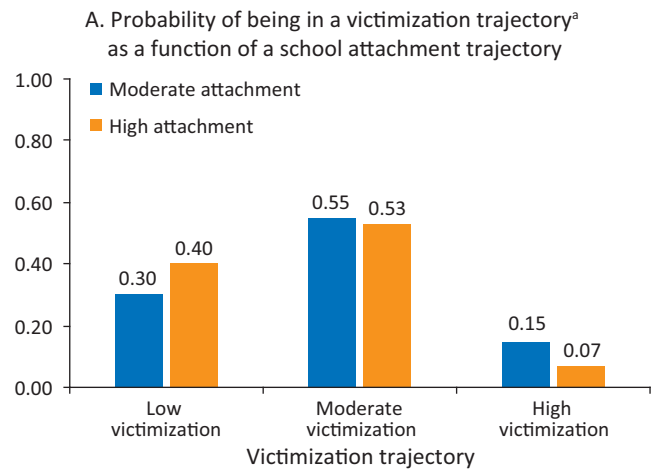
Figure 6B illustrates the inverse conditional probabilities, namely those of belonging to a school attachment trajectory as a function of belonging to one or another victimization trajectory. It shows that 63% of children in the low victimization trajectory had a high level of school attachment, while only 37% of children in the high victimization trajectory had a high level of school attachment.

Finally, Figure 6C presents the combined probabilities of belonging to a specific school attachment trajectory and a specific victimization trajectory. It illustrates all the possible dyadic associations between the two groups of trajectory. The sum of these probabilities are therefore 1. It seems that 53% of children followed both a high school attachment trajectory and a low or moderate victimization trajectory (namely $0.23 + 0.30$). In contrast, the probability of manifesting a high level of school attachment while belonging to the high victimization trajectory was only 4%.

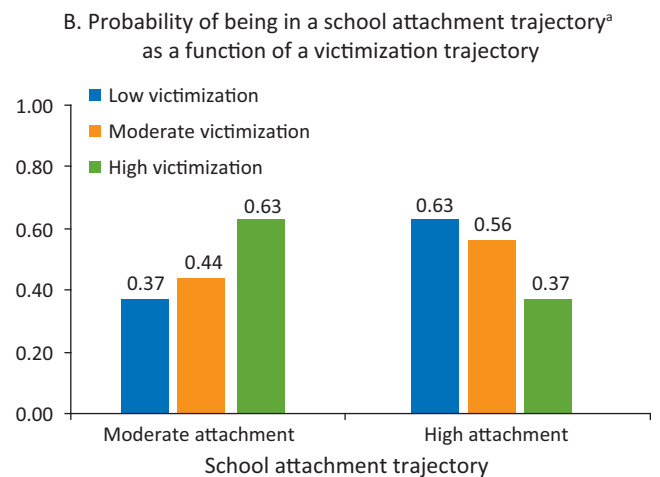
Therefore, although overall the children manifested a relatively high level of attachment to school, it appears that constantly victimized children were less likely to be in the group of children most attached to school in the early years of schooling.



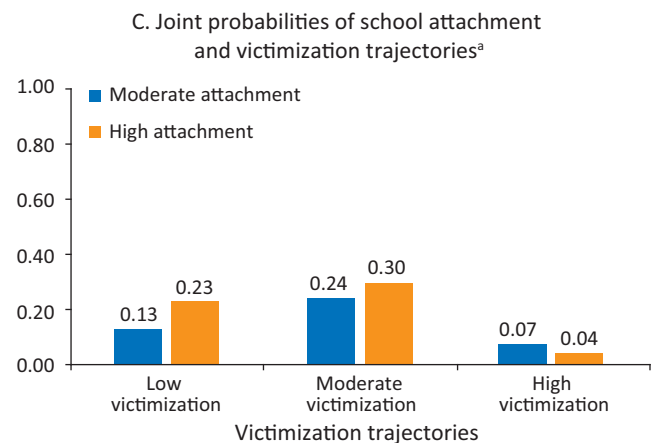
Figure 6
Associations between school attachment trajectories and victimization trajectories in children from 6 to 8 years of age,¹ Québec, 2004 to 2006



a. The sum of the probabilities of being in a victimization trajectory is 1 for each school attachment trajectory



a. The sum of the probabilities of being in a victimization trajectory is 1 for each school attachment trajectory.



a. The sum of these probabilities is 1.

1. Children born in Québec, 1997-1998.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Conclusion

The goals of this fascicle were to document the phenomenon of peer victimization in the first few years of schooling, identify victimization trajectories, and analyze whether these were associated with individual and socio-familial characteristics, and with school attachment trajectories. Based on data collected between kindergarten and Grade 2, three trends clearly emerged from the analyses.

First, from entry into kindergarten, negative behaviours resulting in victimization were rather common. More than a quarter of children reported having often been victims of behaviours such as being called names or being physically intimidated. Though some of these behaviours seemed to decrease as age and grade level increased, it remains that a certain number of children were targets of many of these behaviours in an ongoing fashion. Trajectory analyses revealed three victimization trajectories in the first few years of school, one of which was high and stable over time. This latter trajectory comprised a significant proportion of children (10%) who often seemed to be the targets of negative behaviours perpetrated by other children between kindergarten and Grade 2. This result confirms what has generally been reported in the literature (Boivin, 2010; Kochenderfer and Ladd, 1996; Rigby, 2002). The majority of children in our analysis, however, were in the moderate victimization trajectory (53%). Finally, approximately 40% of the children experienced little or no victimization on the part of their peers. The large proportion of children in the moderate trajectory bears witness to the strong prevalence of victimization episodes concentrated at the beginning of schooling. It therefore seems that, in general, victimization episodes are more the norm than the exception in the social arena, underlining their importance in terms of the social and emotional development of children.

Secondly, the trajectories observed from kindergarten to Grade 2 were clearly defined and rectilinear. The trends were therefore set at school entry and persisted over time. This early chronicity of interpersonal problems is in line with what previous studies have documented – the substantial stability of individual differences in this regard in the first few years of school (Boivin et al., 2010; Boulton and Smith, 1994; Boulton and Underwood, 1992). This stability can be explained by the set of factors proper to a child that conditions the response from peers, but also by the formation of social structures and a negative social standing that together make change difficult, once these behaviours and perceptions are well established.

Thirdly, our analyses confirm the results of previous research with regards to the predictive nature of externalized

behavioural problems in children and coercive parenting practices. A previous study on the emergence of these problems at preschool age also revealed the existence of a group of children heavily and chronically victimized. These children, in a smaller proportion than shown in our study, were more likely to have been physically aggressive and to have been exposed to coercive parenting behaviours in early childhood (Barker et al., 2008). It is likely that persistent externalized behaviours predispose certain children to negative responses on the part of their peers. These externalized behaviours also seem to predispose certain children to be the object of coercive parenting behaviours, which in turn, result in increased aggressivity in these children (Boivin et al., 2005; Tremblay et al., 2004). These behaviours on both sides are indicative of a cycle of negative family interactions that reinforce and strengthen aggressive and aversive conduct on the part of certain children (Bates et al., 1996; Patterson, Reid and Dishion, 1992). These processes and family-learned behaviours can later translate into an abrasive interpersonal style that elicits rejection and victimization by peers.

In addition, the negative results with regards to internalized behavioural problems are also in line with those of previous studies. These problems have been shown to be associated with victimization, but only at the end of childhood and during adolescence (Arsenault, 2006; Boivin et al., 2010). Therefore, positive associations with victimization could be observed in older children, namely during the period when interiorized behavioural problems become more salient and are negatively perceived by peers. Consequently, it would be important to be able to document this aspect in precise fashion as the QLSCD progresses.

Boys were more likely than girls to follow a moderate victimization trajectory, but no difference between the sexes was observed for children in the high victimization trajectory. Indeed, a number of studies have indicated that boys and girls have an equal probability of being chronically victimized (Charach, Pepler and Ziegler, 1995; Kochenderfer and Ladd, 1977; Perry et al., 1988). The greater prevalence of moderate victimization among boys in our analysis can be explained by the direct and obvious nature of the behaviours. Indeed, these behaviours are more characteristic of boys than girls, the latter being more likely to experience indirect and covert forms of victimization (Crick and Bigbee, 1998; Paquette and Underwood, 1999; Smith et al., 2002).

Finally, even though children's attachment to school was generally high in the early years of education, it seems that the level of school attachment was associated with the experience of victimization. It is possible that the socially negative experience of victimization had an impact on school attachment, but caution is recommended here because the nature and direction of the association cannot be confirmed at the present time. The association between school attachment

and victimization may be explained in part by the set of risk factors proper to a child and to a family. QLSCD longitudinal monitoring and more in-depth analyses will provide a means of clarifying this association.

The trajectory patterns observed and their correlates provide support for early screening of children at risk for purposes of prevention. This is in direct line with the goals of the *Plan d'action pour prévenir et traiter la violence à l'école 2008-2011* (2009) (Action Plan to Prevent and Deal With Violence in the Schools 2008-2011) produced by the MELS (Ministry of Education, Leisure and Sport). Indeed, one of the measures of this plan is to facilitate the implementation of effective interventions, mainly in preschool, kindergarten and elementary school. The aim is to act early, with victims or witnesses and with aggressors, through programs that have been proven to be effective. From this perspective, intervention with children at risk in kindergarten or earlier if possible, along with their parents, may contribute to improving the personal and interpersonal habits of all. Norms in the classroom with regards to victimization behaviours comprise another area meriting action and intervention.

The fact that the majority of children reported occasional or frequent episodes of victimization should motivate personnel and stakeholders in the education system to systematically discourage such behaviours and clearly communicate to children that they are unacceptable. Other interventions can also be implemented (see Janosz et al., 2004; MELS, 2010b and PREVNet, 2010).

The results obtained here should be interpreted in light of the limitations of our study. Firstly, the data are based on self-assessment of victimization. This approach has limits in terms of validity, particularly in young children (Boivin et al., submitted for publication). It would be advisable to confirm self-reported data with sources other than the children themselves, such as their teachers, who also responded to questions on victimization in the QLSCD. Secondly, as previously indicated, though the QLSCD is longitudinal and therefore provides a means of verifying predictive hypotheses and suggesting explanations for certain processes and associations, it cannot formally identify cause-effect relationships. Thirdly, the construct of victimization should be qualified and put into context. It is possible that the results obtained reflect experiences that characterize conflict between young children rather than episodes of victimization. Fourthly, the results cover a particular period in child development and it is therefore questionable to generalize them to processes that will be encountered when the children are older. Only ongoing longitudinal monitoring of the QLSCD children will provide a means of verifying the predictions and correlates of victimization at the end of childhood and the beginning of adolescence.



Appendices

Appendix A.1

Description of individual and family characteristics examined for associations with victimization trajectories

Externalized behavioural problems

The scale of children's externalized behavioural problems was constructed from three scales, namely physical aggressivity, hyperactivity and inattention symptoms, and oppositional behaviours.

Each scale was based on responses to items in the Interviewer Completed Computerized Questionnaire (ICCCQ) administered to the parent when the child was 6 years of age (Kindergarten, 2004 round).

To assess physical aggressivity in the children, the Person Most Knowledgeable of the child (PMK), usually the mother, was asked how often in the previous 12 months the child *had got into fights; physically attacked people; hit, bitten or kicked other children; encouraged other children to pick on a particular child; tried to dominate other children; scared other children to get what he/she wanted; got angry and started a fight with someone who had accidentally hurt him/her; reacted aggressively when contradicted; reacted aggressively when teased; reacted aggressively when something was taken away from him/her.*

To assess hyperactivity and inattention symptoms, the PMK was asked how often in the previous 12 months the child *couldn't sit still, was agitated or hyperactive; couldn't stop fidgeting; was impulsive, acted without thinking; had difficulty waiting for his/her turn when playing a game; couldn't settle down to do anything for more than a few moments; was incapable of waiting when something had been promised to him/her; couldn't concentrate or focus his/her attention on something for a long period of time; was easily distracted, had difficulty sticking to any activity; was inattentive* (Cardin et al., 2011).

Finally, to assess oppositional behaviours, the PMK was asked how often in the previous 12 months the child *had been defiant, refused to obey; didn't seem to feel guilty after misbehaving; didn't change his/her behaviour after being punished; had temper tantrums or a hot temper.*

The response choices for items addressing the aforementioned three themes were: 1- "Never or not true," 2- "Sometimes or somewhat true," 3- "Often or very true."

Based on responses to the questions, three scales were calculated and then standardized to have scores with values between 0 and 10.

Externalized behavioural problems were measured by calculating an average based on the scores on these three scales. The final scale had satisfactory reliability, with a Cronbach alpha of 0.75.

Internalized behavioural problems

The scale of children's internalized behavioural problems was constructed from three other scales – symptoms of emotional problems, anxiety and separation anxiety.

Each scale was based on responses to items in the Interviewer Completed Computerized Questionnaire (ICCCQ) administered to the parent when the child was 6 years of age (Kindergarten, 2004 round). To assess emotional problems in the children, the PMK was asked how often, in the previous 12 months, the child *had seemed unhappy or sad; had not been as happy as other children; had difficulty enjoying him/herself; had lacked energy or felt tired.*

To assess symptoms of anxiety, the PMK was asked how often, in the previous 12 months, the child *had been too fearful or anxious; had been worried; had cried a lot; had been nervous or very tense.*

Finally, to assess symptoms of separation anxiety, the PMK was asked how often, in the previous 12 months, the child *had been too glued to adults or too dependent; did not want to sleep alone; reacted very badly when separated from his/her parents; was preoccupied with loss or the fact that something could happen to his/her parents; had felt physically ill when separated from his/her parents.*

The response choices for each of these items were: 1- "Never or not true," 2- "Sometimes or somewhat true," 3- "Often or very true."

Based on responses to the questions, three scales were calculated and then standardized to have scores with values between 0 and 10.

Internalized behavioural problems were measured by calculating an average based on the scores on these three scales. The final scale had satisfactory reliability, with a Cronbach alpha of 0.75.

Coercive parenting practices

Coercive parenting practices were measured using responses to questions in the Interviewer Completed Computerized Questionnaire (ICCCQ) administered to the parent when the children were 6 years of age (Kindergarten, 2004 round). The PMK was asked how often, in the previous 12 months, she/ he had *firmly grabbed or shaken the child when he/she was being difficult; got angry with the child for saying or doing something he/she was not supposed to; hit the child when he/she was being difficult; got angry when punishing the child; had to discipline the child repeatedly for the same thing; had raised her/his voice, scolded or yelled at the child; had physically punished the child.*

The response choices for the first three questions were: 1- "Never," 2- "About once a month or less," 3- "About once per 2 weeks" (sic) 4- "About once a week," 5- "A few times a week," 6- "One or two times a day," 7- "Many times each day" (sic). For the next two questions, the response choices were: 1- "Never," 2- "Less than half the time," 3- "About half the time," 5- "All the time." Finally, the response choices for the last two questions were: 1- "Never," 2- "Rarely" 3- "Sometimes," 4- "Often," 5- "All the time."

Based on responses to the questions, a score was calculated on a scale with a value between 0 and 10. The scale had satisfactory reliability, with a Cronbach alpha of 0.71. A high score indicated a high frequency of negative interactions with the child (raising one's voice, getting angry or using corporal punishment in response to difficult behaviours), while a low score indicated a more "rational" parenting style (e.g. calmly discussing problems with the child).

Socioeconomic status

For the purposes of this analysis, socioeconomic status was based on that observed when the children were 6 years of age (kindergarten, 2004 round). This variable was constructed from five sources: the educational level of the Person Most Knowledgeable of the child (PMK), the educational level of the spouse/partner, if applicable, the prestige of the occupation of the PMK and spouse/partner, if applicable, and household income. For more details on the construction of this index, see the technical documentation on the QLSCD website at: http://www.jesuisjeserai.stat.gouv.qc.ca/doc_tech.htm.

Appendix A.2

**Frequency of selected victimization incidents¹ reported by children and number of perpetrators involved, by age,
Québec, from 2004 to 2006**

	6 years of age (Kindergarten)		7 years of age (Grade 1)		8 years of age (Grade 1)	
	%	CI of 95%	%	CI of 95%	%	CI of 95%
Another child in your school has called you names or has said mean things to you?						
Never	36.5	33.2 ; 39.7	40.3	37.5 ; 43.0	36.1	33.4 ; 38.7
Once or twice	26.1	23.0 ; 29.2	26.1	23.7 ; 28.5	31.5	29.2 ; 33.9
More often	37.4	34.1 ; 40.8	33.6	31.2 ; 36.1	32.4	29.8 ; 35.0
Number of children						
One child only	52.2	48.1 ; 56.4	45.7	42.2 ; 49.2	38.5	35.2 ; 41.8
Many children	47.8	43.6 ; 51.9	54.3	50.8 ; 57.8	61.5	58.2 ; 64.8
Some children at school say bad things behind your back to other children?						
Never	56.4	52.9 ; 59.8	59.7	57.0 ; 62.4	51.8	49.1 ; 54.5
Once or twice	22.5	19.7 ; 25.3	24.3	22.0 ; 26.6	27.7	25.3 ; 30.2
More often	21.1	18.4 ; 23.9	16.0	14.1 ; 17.9	20.4	18.1 ; 22.8
Number of children						
Only one child	47.4	42.4 ; 52.5	41.7	37.3 ; 46.1	39.1	35.2 ; 43.0
Many children	52.6	47.5 ; 57.6	58.3	53.9 ; 62.7	60.9	57.0 ; 64.8
A child at school didn't let you play with his or her group?						
Never	45.3	41.9 ; 48.8	43.0	40.4 ; 45.7	40.2	37.5 ; 42.9
Once or twice	29.9	26.8 ; 33.1	35.2	32.5 ; 38.0	36.0	33.4 ; 38.6
More often	24.7	21.9 ; 27.5	21.8	19.5 ; 24.0	23.8	21.4 ; 26.2
Number of children						
Only one child	43.7	39.3 ; 48.2	39.7	36.1 ; 43.3	34.4	30.9 ; 37.9
Many children	56.3	51.8 ; 60.7	60.3	56.7 ; 63.9	65.6	62.1 ; 69.1
A child at school pushes, hits or kicks you?						
Never	35.7	32.5 ; 38.9	38.9	36.1 ; 41.6	43.6	40.8 ; 46.5
Once or twice	35.3	32.0 ; 38.6	34.2	31.5 ; 36.8	31.8	29.1 ; 34.5
More often	29.0	25.9 ; 32.1	27.0	24.5 ; 29.4	24.5	22.2 ; 26.9
Number of children						
Only one child	61.7	57.6 ; 65.9	58.5	55.1 ; 61.9	50.2	46.4 ; 54.0
Many children	38.3	34.1 ; 42.4	41.5	38.1 ; 44.9	49.8	46.0 ; 53.6
A child at school teases you in a mean way?						
Never	56.3	53.0 ; 59.6	47.8	44.9 ; 50.6	44.5	41.7 ; 47.3
Once or twice	15.7	13.3 ; 18.1	27.6	25.2 ; 30.1	30.9	28.2 ; 33.6
More often	28.0	25.0 ; 31.0	24.6	22.4 ; 26.9	24.6	22.2 ; 27.0
Number of children						
Only one child	56.9	51.8 ; 61.9	57.2	53.3 ; 61.2	52.8	49.0 ; 56.6
Many children	43.1	38.1 ; 48.2	42.8	38.8 ; 46.7	47.2	43.4 ; 51.0
A child at school took away things that belong to you without asking your permission and without giving them back to you?						
Never	52.6	49.2 ; 56.0	67.7	65.3 ; 70.2	66.8	64.1 ; 69.5
Once or twice	32.1	28.7 ; 35.5	23.0	20.8 ; 25.3	25.1	22.7 ; 27.5
More often	15.3	12.7 ; 17.8	9.2	7.6 ; 11.0	8.1	6.6 ; 9.8
Number of children						
Only one child	62.4	57.4 ; 67.5	73.8	69.4 ; 78.2	75.0	70.8 ; 79.2
Many children	37.6	32.5 ; 42.6	26.2	21.8 ; 30.6	25.0	20.8 ; 29.2
A child at your school breaks purposely something that is yours?						
Never	66.1	62.8 ; 69.4	77.9	75.6 ; 80.1	79.2	76.9 ; 81.5
Once or twice	22.6	19.7 ; 25.6	18.2	16.0 ; 20.3	17.7	15.5 ; 19.9
More often	11.3	9.1 ; 13.5	4.0	2.9 ; 5.3	3.1	2.2 ; 4.2
Number of children						
Only one child	61.8	55.8 ; 67.8	71.5	66.2 ; 76.7	76.2	71.3 ; 81.2
Many children	38.2	32.2 ; 44.2	28.5	23.3 ; 33.8	23.8	18.8 ; 28.7

* Coefficient of variation between 15% and 25%; interpret with caution.

1. Children born in Québec 1997-1998.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Notes

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2. It should be noted that 3% of the children were not in the same grade level as the rest of the cohort. Some children were in a higher grade, others in a lower one. In this fascicle, the analyses were conducted on the basis of survey rounds. Therefore, the comparisons made among grade levels include a small proportion of children who were not in the same grade level as their age group may suggest.
3. From a legal perspective, taxing is considered a crime against the person, namely robbery committed with the intention of extortion, intimidation and harassment under articles 343, 344, 346 and 465 of the Criminal Code of Canada.
4. A disability is defined as having a long-term physical or mental health condition or problem that limits activities or restricts participation in these.
5. Institut de la statistique du Québec, data processing of the *Fichier d'inscription des personnes assurées* (Register of Insured Persons) of the Régie de l'assurance maladie du Québec (Québec Health Insurance Board), 2006.
6. It should be noted that not all the children were the same age at the rounds of data collection. For example, in the 2004 round (kindergarten), some children were 5.8 years of age while others were 6.8 (median age 6.1 years).
7. Data collection was conducted in the second half of the school year.
8. High coefficient of variation; interpret with caution.

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