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Places to Avoid: Population-Based Study of Student Reports of Unsafe and High Bullying Areas at School

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Abstract

Students' perceptions of school safety and experiences with bullying were examined in a large Canadian cohort of 5,493 girls and 5,659 boys in Grades 4 to 12. Results indicate notable differences in when and where students felt safe based on their own perceptions of safety and their own experiences with bullying, particularly across elementary and secondary schools. For elementary students, especially those involved in bullying, the playground/school yard and outside recess/break time were particularly hazardous, whereas for secondary students involved in bullying, the hallways, school lunchroom/cafeteria, and outside recess/break were considered especially dangerous. The commonality across student-identified unsafe areas is that they tend to not be well supervised by school personnel. Accordingly, the present results underscore the need to increase adult supervision in areas in which an overwhelming majority of students report feeling unsafe.

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Résumé

Une analyse de la perception des élèves vis-à-vis de la sécurité à l'école et des expériences en rapport avec l'intimidation a été effectuée dans une cohorte d'étudiants canadiens de la 4e à la 12e année, qui comporte 5493 filles et 5659 garçons. Les résultats ont montré des différences remarquables en ce qui a trait aux lieux et aux moments où les étudiants se sentent en sécurité. Ces derniers se basent sur leurs propres perceptions de la sécurité ainsi que sur leurs expériences en rapport avec l'intimidation, principalement à travers les écoles élémentaires et secondaires. Selon les élèves qui fréquentent les niveaux élémentaires (en particulier ceux qui sont impliqués dans l'intimidation), la cour de récréation et les périodes de pause à l'extérieur du bâtiment scolaire sont particulièrement risquées. Les élèves impliqués dans l'intimidation et qui fréquentent les niveaux secondaires, quant à eux, considèrent que les couloirs, la salle de déjeuner/cafétéria à l'école et les périodes de pause à l'extérieur du bâtiment scolaire, sont dangereux. Le point commun entre tous les secteurs décrits par les élèves comme peu sécuritaires, est le manque de supervision par le personnel de l'école. En conséquence, les résultats actuels soulignent la nécessité d'augmenter la surveillance adulte dans les secteurs où une la grande majorité des élèves éprouvent le sentiment d'insécurité.

Keywords

bullying, locations, students, school safety

Bullying extends far beyond an occasional fight or disagreement between peers. Rather, bullying entails the *repeated*, *intentional* humiliation and oppression of a person who has *less power* than his or her aggressor(s) (Olweus, 1999). Bullying occurs at an alarming rate among students in elementary and secondary schools around the world. For example, using Canadian data ($N = 4{,}331$) from UNICEF's recent *Innocenti Report Card 7* (2007) for children aged 11, 13, and 15, the prevalence rate for victimization was 36.3% and for bullying others was 37.0%. In another recent population-based Canadian study of 16,879 children aged 8 to 18, Vaillancourt and colleagues (2009) reported similar prevalence rates—37.7% of students reported being bullied by others and 31.6% admitted to bullying others.

The fact that more than one third of Canadian students are involved in bullying is disconcerting because longitudinal studies have demonstrated that bullying *causes* a number of psychosocial problems including greater rates of depression, poorer self-image, and greater dependency on adults among those who fall victim to repeated humiliation and oppression by peers (e.g., Kim, Leventhal, Koh, Hubbard, & Boyce, 2006). Longitudinal evidence further indicates that the trajectory of those who bully others is also worrisome (see McDougall, Vaillancourt, & Hymel, 2008). For example, Olweus (1993) found that 60% of those who bullied others in Grades 6 and/or 9 had at least one criminal conviction by age 24 (see also Farrington, 1993).

Considering the pervasiveness of bullying, and that it is causally linked to poor adjustment among victims and poor outcomes among perpetrators, intervention is

critical. Because few children seek assistance from community health or mental health agencies for these types of issues, and because bullying is relational in nature, the school becomes the natural venue for intervention (Kaltiala-Heino, Rimpela, Marttunen, Rimpela, & Rantanen, 1999; Storch & Crisp, 2004; World Health Organization, 1994). Numerous bullying prevention and intervention programs have been developed and implemented in schools around the world, but the efficacy of such programs varies considerably, suggesting that much more needs to be done. For example, although positive effects of school-based programs have been reported by some (e.g., Olweus, 1993), a recent review of the effectiveness of 14 antibullying programs by Smith, Schneider, Smith, and Ananiadou (2004) found that many of the programs yielded little or no improvement and some, in fact, caused harm. Moreover, Smith et al. also found that only one of the programs reviewed produced meaningful positive results. In a more recent review of this literature, Vreeman and Carroll (2007) report similarly bleak findings—out of 26 programs reviewed, only three produced reliable reductions in bullying and victimization.

Although these reviews point to the need for better student-based programs aimed at reducing bullying in schools, one area of intervention that has been shown to be effective is increased adult supervision. Indeed, there is strong empirical support demonstrating the "inhibiting effect" of adult monitoring (Pellegrini, 2002). For example, Olweus (1993), Pellegrini and Bartini (2000), and Smith and Sharp (1994) have all shown an inverse relationship between bullying and adult supervision of students (see also Boulton, 1994). Given these results, there is no shortage of experts calling for increased adult supervision as a way of reducing bullying in schools (e.g., Craig, Pepler, & Atlas, 2000; Nansel et al., 2001). But where should schools increase their supervision? Logically, supervision should be increased in locations where students report that bullying most often takes place. The focus of the present investigation was to examine the next logical question: Where are Canadian students most often bullied and where do they feel most unsafe?

Most studies to date that have attempted to identify the locations where student bullying takes place are hampered by the same limitations. They tend to (a) ask students about only a limited number of places, (b) analyze responses in the absence of a consideration of students' experiences with bullying, (c) use a restricted age range, and (d) neglect students' general perceptions of safety thereby unnecessarily neglecting possible high-risk areas. For example, Baldry and Farrington (1999) asked 238 Italian middle school students (aged 11-14) about five locations in the school—the classroom, the corridors, the playground, the washrooms, and other places (gymnasium, lunch hall)—and found that students reported that bullying most often took place in the classroom (79.6% boys and 66.7% girls). Students' responses were not organized on the basis of their experiences with bullying (i.e., whether they bullied or were bullied). In a large study by Fekkes, Pijpers, and Verloove-Vanhorick (2005), 2,766 Dutch elementary school students (aged 9-11) were asked about six locations that included the option of "somewhere else." These researchers found that of those students *who were frequently bullied*, the most reported location of victimization was the playground (76.9%) followed by the classroom (40.5%). Wolke, Woods, Stanford,

and Schultz (2001) also reported on a large cohort ($N = 2,377$) of English and German children aged 6 and 8 and found that across four locations *victimized* students reported being bullied most frequently on the playground (93%). The locations where children who bully others reported abusing their peers were not presented.

Bradshaw, Sawyer, and O'Brennan (2007) reported on results of a districtwide bullying survey administered to 15,185 students from elementary school to high school. Six locations were included in the survey (classroom, hallway/lockers, cafeteria, gym, bathroom, and playground/recess) and data were analyzed by grade division (elementary, middle school, and high school). Results indicated grade differences in the locations where students reported being bullied. For example, middle school students (29%) reported being bullied in the hallway or lockers at a greater rate than students in elementary (15.4%) or secondary school (21.2%). Importantly, students in this study were also asked about their perceptions of safety. Most elementary students (82.5%) reported feeling safe at school compared to 64.2% of middle-school students and 71.6% of high school students. Once again, separate analyses were not conducted based on students' involvement with bullying. Quite possibly, students who are bullied and who bully others may report different locations that are unsafe and where bullying occurs than would students not involved with bullying. The present study addresses many of the aforementioned limitations of previous research by asking a large cohort of Canadian students in Grades 4 to 12 about 19 different locations, where students are bullied and 16 different locations were students feel unsafe, considering both the perceptions of those who are and are not involved in bullying and those who feel safe versus unsafe at school across elementary and secondary school.

Method

Participants

Participants included 11,152 (5,493 girls, 5,659 boys) predominately White students (71.4%; Asian Canadian, 6.7%; South Asian Canadian; 5.7%, Middle Eastern Canadian, 4.6%; African Canadian, 4.5%; Aboriginal, 1.2%; Other, 6%) in Grades 4 to 12 (age range: 8-18) from 65 schools nested in a large public school district in southern Ontario that services a socioeconomically diverse region with urban, suburban, and rural composition of students from junior kindergarten (age 3) to Grade 12 (age 18). The distribution of students by grade was as follows: Grade 4 (1,312), Grade 5 (1,504), Grade 6 (1,753), Grade 7 (1,859), Grade 8 (1,685), Grade 9 (782), Grade 10 (829), Grade 11 (715) and Grade 12 (713). For analytic purposes, students were grouped into elementary (Grades 4-8) and secondary school divisions (Grades 9-12) in accordance with how students proceed through the education system in Ontario.

Procedures

All students with parental permission (98% of sample) completed an online Safe School Survey, supervised by their classroom (elementary division) and homeroom

teachers (secondary division), in the computer labs of their respective schools in January (elementary) and February (secondary) of 2008. There were approximately 30 students per testing session and all data were collected within a 1-month period. Participants were informed of their right to decline or to withdraw from participation at any time. Less than 5% of students declined/withdrew from the study and less than 1% of the data were discarded because of suspicious response patterns that included inappropriate comments in the open response section.

Measures

Students were first asked to indicate the extent to which they have felt safe at school over the past 3 months on a 5-point scale that ranged from 5 (*never*) to 1 (*all of the time*). Next, all students were asked to indicate where and when they have felt unsafe. Sixteen[1] specific places and times were specified and for each one, students indicated whether or not they felt safe. The locations and time options were hallway, lunchroom/cafeteria, change room, washroom, parking lot, classroom, bus loading area, school bus, going to school, returning from school, during class, intramurals, recess/break outside, recess/break inside, at the front of school, and at the back of the school.

Following recommendations by Vaillancourt et al. (2008), students were then asked to read a standard bullying definition from Olweus (1986) that was adapted by Whitney and Smith (1993) before completing the questions pertaining to their experiences with bullying. Next, students were asked to report on the frequency of their own bullying experiences on a 5-point frequency scale ranging from 1 (*never*) to 5 (*several times a week*) using two self-report questions adapted from Olweus (1996); "How often have you bullied other students at school in the past 3 months?" and "How often have you been bullied in the past 3 months?"

Finally, students were provided with a list of places and times and asked when and where bullying happens most at their school with respect to 19 locations and times: hallway, lunchroom/cafeteria, change room, washroom, parking lot, gymnasium, classroom, playground/school yard, bus loading area, on the school bus, to school, from school, during class, intramurals, outside recess/break, inside recess/break, at the front of the school, at the back of the school, and in the coatroom/cubby area. For each, students were asked to indicate whether or not bullying occurred. Students were also given the option of listing other locations not mentioned in the survey.

Results

School Safety Prevalence

Based on recommended cutoff points for reporting prevalence by Solberg and Olweus (2003), we examined students' perceptions of safety by creating two groups—those who felt safe and those who felt unsafe at school. Students indicating that they felt safe "all of the time" or "most of the time" were classified as *feeling safe*, whereas those endorsing feeling safe only "some of the time," "rarely," or "never" were classified as

feeling unsafe. Using these cutoffs, 19.5% of students reported feeling unsafe at school and 80.5% reported feeling safe at school. Although reports of felt safety did not differ significantly as a function of sex, there were notable differences in reports of safety between students in elementary school and students in secondary school, $\chi^2 = (1, N = 111152) = 21.27, p < .0001$. Specifically, 20.5% of elementary school students indicated feeling unsafe compared to 16.7% of secondary school students, $z = 4.58$, $p < .0001$.

Where and When Students Feel Unsafe

Hierarchical loglinear analyses, a statistical technique used to analyze multiway frequency data, was used to assess the differences between students who felt safe and students who felt unsafe. Results revealed notable differences between elementary and secondary school students for certain places and times (see Table 1; all analyses were statistically significant at $p < .01$). For example, z-tests used to compare independent proportion scores revealed that although students in both elementary and secondary school who reported feeling unsafe at school indicated feeling unsafe in the lunchroom/cafeteria, the washroom, and hallways, this security threat was particularly pronounced for students in secondary school (13.4% elementary vs. 26.3% secondary; $z = 8.52$, $p < .0001$ for lunchroom/cafeteria; 24.5% elementary vs. 44.3% secondary; $z = 8.52$, $p < .0001$ for hallway). More elementary students who felt unsafe at school felt most vulnerable during outside recess/break than did secondary students who felt unsafe (39.0% elementary vs. 23.5% secondary; $z = 6.33$, $p < .0001$). There were no statistically significant grade-division differences found between students who reported feeling unsafe at school and their perception of safety on the way to school, on the way home from school, on the bus, or at inside recess/break (see Table 1).

In the open response section, students (<1%) mentioned that they felt unsafe in the park, near their locker, and in the "smoking areas" of their school (secondary students only).

Bullying Prevalence

Again following the recommended cutoff points for identifying prevalence by Solberg and Olweus (2003), students reporting having been bullied or having bullied others "2 or 3 times a month" or more often were classified as victims of bullying (victims) or as students who bully others (bullies), respectively. Using this cutoff procedure, 78.4% of students were classified as noninvolved, 12.3% of students were identified as victims of bullying, 5.3% were identified as students who bully others, and 4.0% were identified as students who bully others and are bullied (bully-victims). Sex differences were found with respect to the proportion of students identified as non-involved, victims of bullying, students who bully others, and students who bully others and are bullied, $\chi^2 = (1, N = 111152) = 21.27, p < .0001$. Slightly more girls than boys were classified as noninvolved (79.4% vs. 77.4%; $z = 2.53$, $p < .01$) and as

Table 1. Percentage of Students Who Report Feeling Unsafe at School According to Various Locations and Times

	Elementary school		Secondary school	
Location[a]	Safe	Unsafe	Safe	Unsafe
Hallway	7.3	24.5	8.8	44.3
Lunchroom	2.8	13.4	4.1	26.3
Change room	3.9	12.7	2.5	20.2
Washroom	10.1	22.9	6.0	28.3
Parking lot	4.0	10.3	4.1	23.1
Classroom	4.9	21.9	2.4	24.3
Bus loading area	1.7	6.9	2.0	11.9
On the bus	4.1	9.8	2.8	12.3
To school	4.4	13.4	2.2	14.4
From school	11.4	23.3	5.8	23.7
During class	2.1	15.2	1.7	19.8
Intramurals	0.6	3.8	0.5	10.5
Recess/break outside	15.3	39.0	3.1	23.5
Recess/break inside	3.9	17.9	1.5	20.6
Front of school	2.0	8.6	3.2	24.7
Back of school	3.4	13.9	4.4	25.7

[a]Students could endorse more than one location.

victims of bullying (13.0% vs. 11.6%; $z = 2.18$, $p < .01$), whereas more boys than girls were classified as students who bully others (6.3% vs. 4.4%; $z = 4.40$, $p < .0001$) and as students who bully others and are bullied (4.8% vs. 3.3%; $z = 3.90$, $p < .0001$).

There were also notable differences in the proportion of students identified as being involved in bullying by grade division, $\chi^2 = (1, N = 111152) = 266.90$, $p < .0001$. Specifically, far more elementary school students were classified as victims of bullying than secondary school students (15.2% vs. 4.4%; $z = 15.45$, $p < .0001$), whereas more secondary school students were identified as noninvolved (76.1% vs. 84.3%; $z = 9.29$, $p < .0001$) and as students who bully others than elementary school students (7.5% vs. 4.5%; $z = 6.21$, $p < .0001$). There were no statistically significant differences in proportion scores by grade division for students who bully others and are bullied.

Where and When Bullying Occurs by Status Group Across Elementary and Secondary School

Of additional interest in the present study was whether having experience with bullying would make a difference with respect to the identification of locations and times when bullying takes place in the school. Given that grade division was also an important consideration, interactions between the locations and times students reported bullying takes place at their school by bully-victim status (% within group) and by

grade division[2] were examined using hierarchical loglinear analysis. All analyses were statistically significant owing primarily to the large sample size (Kline, 2005) and to the large differences between noninvolved versus involved students that varied, at times, dramatically by grade division. Accordingly, only notable statistically significant distinctions (z score > 3.0, $p < .0001$, 2-tailed) for independent proportion scores are reported.

Victims of bullying, students who bully others, and students who bully others and are bullied in both elementary and secondary school reported invariably higher proportion scores across locations and times than students who were not involved in bullying (see Table 2). Moreover, across all groups of students, the proportion scores for students who bully others and are bullied were almost always higher than for victims of bullying, students who bully others, and noninvolved students, although not always statistically significantly higher.

Focusing on differences between victims of bulling and students who bully others by grade division (% within group) indicated large differences between elementary and secondary school students' reports of where and when bullying occurs (see Table 2). Elementary school victims, as compared to secondary school victims, reported bullying occurring at a far greater rate on the playground/school yard (71.6% vs. 27.6%; $z = 10.20$) and during recess/break outside (62.7% vs. 47.8%; $z = 3.28$), whereas secondary school victims reported that bullying occurred at a far greater rate in the hallways (67.9% vs. 39.0%; $z = 6.36$), gymnasium (32.8% vs. 17.7%; $z = 4.09$), lunchroom/cafeteria (48.5% vs. 29.3%; $z = 4.45$), change rooms (41.0% vs. 20.4%; $z = 5.32$), during class time (47.0% vs. 26.5%; $z = 4.89$), at the front of the school (42.5% vs. 13.7%; $z = 8.42$), at the back of the school (38.8% vs. 22.1%; $z = 4.20$), in the parking lot (33.6% vs. 8.8%; $z = 8.46$), and at the bus loading area (21.6% vs. 10.8%; $z = 3.55$).

Elementary school students who bully others also reported that bullying occurred at a far greater rate on the playground/school yard than did secondary school students who bully others (elementary = 68.3% vs. secondary = 30.3%; $z = 8.96$) who in turn reported that bullying most often took place in the hallways (secondary = 67.1% vs. elementary = 40.4%; $z = 6.24$), lunchroom/cafeteria (54.8% vs. 27.6%; $z = 6.56$), during class time (42.5% vs. 24.9%; $z = 4.41$), during inside recess/break (47.8% vs. 31.7%; $z = 3.85$), at the front of the school (38.6% vs. 20.5%; $z = 4.71$), at the back of the school (39.9% vs. 24.3%; $z = 3.93$), in the parking lot (38.2% vs. 10.9%; $z = 7.77$), the bus loading area (25.4% vs. 11.5%; $z = 4.31$), and the coatroom/cubby area (15.8% vs. 6.3%; $z = 3.36$).

In the open response section, less than 1% of students mentioned locations other than the ones provided. The most common locations mentioned were near their locker, in the "smoking areas" of their school (secondary students only), and at home.

Discussion

Knowing the "hot spots" of where and when students feel most unsafe and where and when bullying occurs is critical for intervention and prevention efforts. The present

Table 2. Percentage of Students Who Report Bullying in Various Locations and Times According to Their Role in Bullying

	Elementary school				Secondary school			
Location[a]	Noninvolved	Victims	Bullies	Bully-victims	Noninvolved	Victims	Bullies	Bully-victims
Hallway	23.2	39.0	40.4	47.0	52.7	67.9	67.1	69.6
Lunchroom/cafeteria	15.5	29.3	27.6	34.8	33.7	48.5	54.8	59.1
Change room	13.2	20.4	27.0	33.0	16.3	41.0	34.6	43.5
Washroom	14.4	26.9	26.5	33.9	16.4	34.3	30.3	43.5
Parking lot	4.6	8.8	10.9	16.1	19.8	33.6	38.2	43.5
Gymnasium	7.7	17.7	16.4	25.0	13.6	32.8	28.1	42.6
Classroom	16.5	34.1	35.5	47.0	21.6	45.5	43.9	53.9
Playground/school yard	65.2	71.6	68.3	69.9	14.7	27.6	30.3	36.5
Bus loading area	5.1	10.8	11.5	18.2	10.8	21.6	25.4	29.6
On the school bus	10.3	18.6	16.1	24.4	9.7	17.9	22.8	28.7
To school	9.8	18.9	20.8	29.2	11.5	18.7	24.6	34.8
From school	15.9	27.3	31.4	36.3	20.8	32.8	37.7	42.6
During class	11.1	26.5	24.9	35.4	19.7	47.0	42.5	50.4
Intramurals	3.3	7.5	7.9	14.3	6.3	14.9	21.1	27.0
Recess/break outside	46.1	62.7	57.1	66.1	31.9	47.8	53.9	53.9
Recess/break inside	19.0	37.1	31.7	44.9	24.4	42.5	47.8	51.3
Front of school	7.2	13.7	20.5	26.5	21.9	42.5	38.6	47.8
Back of school	12.4	22.1	24.3	33.9	23.8	38.8	39.9	49.6
Coatroom/cubby area	3.1	8.3	6.3	12.2	4.1	9.0	15.8	20.9

[a]Students could endorse more than one location.

study suggests important differences in times and locations based on the school context (elementary vs. secondary) as well as one's personal involvement in bullying and whether or not one felt safe in school. For example, 39% of students in elementary school who reported feeling unsafe at school reported that outside recess/break time was particularly hazardous for them compared to 15.3% of elementary students who felt safe at school. For students in secondary school who felt unsafe, 44.3% reported that the hallway was the most unsafe location at school as compared to 8.8% of secondary students who reported feeling safe at school.

Although most students reported that the playground/school yard was a high frequency location for bullying to take place, this area, as well as outside recess/break, was particularly problematic for students who were victimized by their peers. Consistent with victims of bullying, students who bully others reported that the playground/school yard and outside recess/break time were the places that bullying most often took place, along with hallways. For students who bully others and are bullied, inside and outside recess/break, the playground/school yard and the hallway were high frequency bullying locations, but interestingly, so was the classroom, a place where bullying would be presumably at its lowest given the inherent high degree of adult supervision. Whitney and Smith (1993), Bladry and Farrington (1999), Borg (1999), and Swearer and Cary (2007) all reported that a high degree of bullying took place in the classroom. Greater awareness and attention may be needed in some classrooms although more subtle forms of social and relational bullying will likely remain more difficult to detect. Also, although one might assume that the bullying occurred between peers, it is important to consider that teachers may have also been the source of bullying. Indeed, in a recent longitudinal study examining verbal abuse of elementary students by teachers, Brendgen, Wanner, and Vitaro (2006) reported that 15% of Canadian students were frequently berated by their teacher.

Examining differences between victims of bullying and students who bully others across elementary and secondary school indicated that although victims of bullying and students who bully others reported similar prevalence rates based on time and location, these rates varied markedly by school division. In elementary school, bullying took place at a disproportionate rate on the playground/school yard and during outside recess/break time. In secondary school, the hallways, the school lunchroom/cafeteria, and outside recess/break are places that students should avoid given the high rates of bullying that were reported to take place in these locations by those involved in bullying. Beyond these highly problematic locations, the results suggest few areas that are safe for students involved in bullying. In elementary school, the lowest endorsed locations (<10% of involved students) were the parking lot, the bus loading area, the coatroom, and intramurals. These locations were likely endorsed at a lower rate because not all students take the bus or participate in intramurals, and because the parking lot is typically off-limits to students in elementary school.

The implications for intervention and prevention are clear—students tend to report feeling unsafe in locations that are under the least amount of adult supervision, a finding that is highly consistent with other published studies (e.g., Astor, Meyer, & Behre,

1999; Boulton, 1994; Craig et al., 2000; Olweus, 1993; Pellegrini & Bartini, 2000; Pepler, Craig, Ziegler, & Charach, 1994; Smith & Sharp, 1994). Considering how unsafe students reported feeling, and how much they reported that bullying took place on the playground/school yard (elementary school) and in the hallways (secondary school), it seems logical for Canadian schools to, at a minimum, increase adult surveillance in these locations. The benefit of increasing school safety and reducing school bullying is an improved school climate, which has been shown to decrease behavioural problems and increase academic achievement (Lehr & Christenson, 2002).

Although increased surveillance is an obvious, and critical, first step, it is important that school personnel think beyond simple teacher presence. All school personnel need to be especially vigilant in monitoring students' interactions, especially those of students who are likely the targets of peer abuse. As well, there is evidence that in elementary school, the use of peer mediators is associated with meaningful reductions in aggression on the school playground (Cunningham et al., 1998), a location in which students have reported in this study that a significant amount of bullying takes place. Another possibility may be to increase the presence of allies that children can turn to for assistance. These allies could be peer mediators, student mentors, or adult volunteers.

Bullying has been shown to cause physical and mental health issues among those who fall victim (e.g., Kim et al., 2006; Olweus, 1993; Vaillancourt et al., 2008). It, therefore, behooves (?) school personnel to do everything in their power to reduce school bullying; and the most important tool in this endeavour may be the knowledge of where this behaviour takes place. With this in mind, it is important to extend research in this area beyond examinations of prevalence rates toward an understanding of the potential solutions to the problem of unsafe areas. Specifically, a longitudinal examination of bullying and victimization in schools that install hallway monitoring systems, or even security cameras, would be novel. Considering the findings of the present study, along with those studies reiterating the importance of student monitoring, it can be predicted that a decrease in instances of bullying would be observed longitudinally after an increase in the monitoring of problematic areas. Results from the present population-based study offer important information as to which areas are most problematic for those involved in bullying and victimization across age groups that should not be ignored, as students who report feeling unsafe at school or are involved in bullying have indicated that unsupervised locations at school are particularly problematic.

Limitations and Future Directions

Although the type of bullying behaviour (physical vs. social) was not examined in the present study, future studies could benefit from an understanding of if and how the type of bullying that occurs takes place in different locations. Craig et al. (2000) found that bullying behaviour changed depending on the location; direct bullying was observed at a greater rate on the playground and indirect bullying in the classroom. It seems reasonable to suspect that in locations with high adult surveillance (e.g., the classroom) physical forms of bullying would be considerably lower than in locations

with low adult surveillance (e.g., playground, hallways)—presumably because of the serious repercussions to the aggressor for having been caught physically attacking another student. The extent to which social forms of bullying can persist in locations with high adult surveillance is not yet well understood. Social forms of bullying (e.g., sarcasm, teasing) are inherently more difficult to detect, rendering them more impervious to adult surveillance. Moreover, the extent to which an adult (e.g., teacher, lunch monitor) who bears witness to an act of social bullying (that does not explicitly violate any law or school policy) has the authority to reprimand the bully remains unclear. There is evidence to suggest that teachers' knowledge of social bullying is rather limited and that they tend to downplay the seriousness of social bullying as compared to physical bullying (Hazler, Miller, Carney, & Green, 2001; Mishna, Pepler, & Wiener, 2006; Mishna, Scarcello, Pepler, & Wiener, 2005). A sense of powerlessness among school personnel to effectively punish socially aggressive students may be a factor in deterring them from intervening during an episode of bullying between two students, thereby allowing social forms of bullying to continue despite high adult surveillance in a particular school location.

Finally, future research is needed to determine whether "hot spots" for bullying vary systematically as a function of age, gender, race, culture, school context, or even particular bully-victim dyads. Moreover, these locations could change over time and in response to increases in surveillance. One critical question for future research, however, is whether knowledge of where and when bullying occurs helps to enhance our understanding of the processes involved in bullying, and whether school-based efforts to address bullying can lead to decreased reports of bullying across locations or simply shifts in bullying to other locations and less readily observable forms of bullying.

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Notes

1. Three locations (playground, gymnasium, coatroom/cubby) were errantly omitted from the final survey.
2. The complexity of the analysis prohibited the inclusion of another grouping variable and thus sex differences were not examined in the present study.

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