

**Gender differences in adolescents' exposure to stressful life events and differential links to
impaired school functioning**

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Abstract

Gender differences in exposure and reactivity to specific stressful life events (SLE) contribute to explaining adolescent boys' and girls' differential susceptibility to common adjustment difficulties like depression and behavioral problems. However, it is unclear whether these gender differences are also relevant to understanding another key marker of adolescent maladjustment: high school dropout. A state-of-the-art interview protocol was used to assess recent SLE in a sample of academically vulnerable Canadian adolescents (N = 545, 52% boys). The sample was comprised of three groups in approximately equal proportions: 1) students who had recently dropped out; 2) matched students at risk of dropping out but who persevered nevertheless; and 3) "normative" students with an average level of risk. When SLE of all types were considered together, overall exposure was similar for adolescent boys and girls, and the SLE-dropout association did not vary as a function of gender. However, gender differences emerged for specific events. Boys were especially exposed to SLE related to performance (e.g., school failure, suspension) and conflicts with authority figures (e.g., with teachers or the police), whereas girls were particularly exposed to SLE involving relationship problems with family members, peers, or romantic partners. In terms of specific SLE-dropout associations, one consistent result emerged, showing that performance/authority-related SLE were significantly associated with dropout only among boys. It therefore seems that considering gendered exposure and sensitivity to SLE is important for understanding the emergence of educational difficulties with long-ranging consequences for future health and well-being.

Key words: stressful life events, high school dropout, gender differences, educational attainment

Gender differences in adolescents' exposure to stressful life events and differential links to impaired school functioning

Stress can have corrosive effects on young people's life course trajectories, and both the stressors that they are exposed to and how they react to those stressors can differ by gender (Hammen, 2018; Hatch & Dohrenwend, 2007; Oldehinkel & Bouma, 2011). Thus, the gendered roles of stressful events in key dimensions of the life course such as major transitions that powerfully direct entry into adulthood need to be carefully studied. One such transition with dramatic long-term consequences is high school dropout (Maynard, Salas-Wright, & Vaughn, 2015). Dropout is related to stressful life events and is a highly gendered behavior: Its prevalence is generally high but typically more so among adolescent boys, who have been found to be up to 1.5 times more likely to drop out than girls, although the magnitude and direction of this gap vary with time and place (e.g., Dupéré, Dion, Leventhal, et al., 2018; Eurydice Network, 2010; McFarland, Stark, & Cui, 2016; OECD, 2012; Rumberger, 2011).

Prevalence gaps as a function of gender are not unique to dropout and have been noted for other common adjustment problems in adolescence, most notably depression, a problem somewhat more prevalent among girls than boys (Eaton et al., 2012; Salk, Hyde, & Abramson, 2017). However, whereas the factors underlying the gender gap in depression have been extensively studied (Hill & Needham, 2013; Nolen-Hoeksema, 2012), very little research has focused on potential differences in the circumstances leading to dropout as a function of gender, beyond citing teen births as a particularly potent factor for girls (see Rumberger, 2011; Shuger, 2012). The necessity to look beyond this one factor is underscored by the fact that teen births are considerably rarer than high school dropout and are involved in only a small share of dropout cases (Hynes, 2014; Sedgh, Finer, Bankole, Eilers, & Singh, 2015). Thus, much remains to be

clarified about the common and specific needs of adolescent boys and girls at risk of quitting school.

The goal of this study is to examine, in a sample of academically vulnerable adolescents, gender differences in terms of levels of exposure to different types of stressful life events (SLE) and in terms of associations between these SLE and dropout. The focus on SLE is informed by research (reviewed next) on gender differences in adjustment problems, suggesting a key role for differential exposure and reactivity to SLE.

Gender, level of exposure to SLE, and adjustment

For biological, psychological, interpersonal, and social reasons, adolescent boys and girls are likely, to some degree, to be exposed to different types of stressors; moreover, the meaning and consequences of such exposure are likely to vary as a function of gender (Dedovic, Wadiwalla, Engert, & Pruessner, 2009; Galambos, Berenbaum, & McHale, 2009; Hammen, 2018; Hyde, 2014; Rosenfield & Mouzon, 2013). According to the “high cost of caring” view (Kessler & McLeod, 1984), women and adolescent girls tend to be particularly involved in caring responsibilities and to feel highly responsible for the well-being of significant others in their network, which could both increase their exposure and amplify their response when exposed to family- or peer-related stressors. Conversely, for men and adolescent boys, strain theory suggests that stressors frustrating the attainment of achievement-oriented goals are likely to be especially relevant, as these goals loom particularly large in their self-concept and identity (Broidy & Agnew, 1997; see also Davis et al., 2011, Sigfusdottir and Silver, 2009). Relatedly, because boys are more physically aggressive and commit more offences and rule violations than girls, and because boys tend to be punished comparatively more frequently and severely for these breaches, stressors involving conflicts with, and punishment by, authority figures in or outside of

school could play a lopsided role for them (Doerner & Demuth, 2010; Kruttschnitt, 2013; Wallace, Goodkind, Wallace, & Bachman, 2008).

The consequences of stress exposure for functioning are also likely to vary as a function of gender. It is thought that girls are more likely to respond to stressors with inwardly directed symptoms and distress, while boys are more likely to respond with outwardly directed anger and externalized problems such as substance abuse and behavioral problems, at least in part because of social roles and expectations (see Broidy & Agnew, 1997; Rosenfield & Mouzon, 2013). It is not clear where high school dropout should fit in this picture, as it is linked with both internalized and externalized symptoms (Brière et al., 2017; Dupéré, Dion, Nault-Brière, et al., 2018; Esch et al., 2014).

Empirical studies not focusing on school dropout generally concur with theoretical predictions. Whereas overall exposure to SLE is not necessarily different across gender, clear and consistent differences in exposure and reactivity emerge when focusing on specific types of events (Bai & Repetti, 2018; Carter & Garber, 2011; Davis et al., 2011; Hammen, 2005; Hatch & Dohrenwend, 2007; Kendler & Gardner, 2016; Michl, McLaughlin, Shepherd, & Nolen-Hoeksema, 2013; Oldehinkel & Bouma, 2011; Rosenfield & Mouzon, 2013; Stewart, Valeri, Esposito, & Auerbach, 2018; Stroud, Papandonatos, D'Angelo, Brush, & Lloyd-Richardson, 2017; Thoits, 2010; van Loo, Aggen, Gardner, & Kendler, 2017). Patterns observed in general population and high-risk samples (e.g., depressed individuals) point to a higher exposure and reactivity to relational SLE among women and to risk-taking, crime (e.g., arrest, assault), and performance-related (e.g., school failure) SLE among men. Differential exposure and reactivity to relational SLE apparently contribute to women's disadvantage when it comes to depression (Hammen, 2018), but it remains unclear whether men's reactivity to other types of stressors

underlies their comparatively high vulnerability for externalized problems (Esper & Furtado, 2013; Smith, Mouzon, & Elliott, 2016).

Scattered findings suggest that the gender differences in SLE observed in studies focusing on non-academic outcomes may be relevant for understanding the reasons underlying boys' and girls' departure from school. One survey, which asked dropout students participating in the Educational Longitudinal Study of 2002 about the reasons underlying their departure from school, indicates that dropout girls more often cite family-related stressors (e.g., becoming a parent), whereas school- and work-related ones (e.g., suspensions) are overrepresented among dropout boys (Dalton, Glennie, & Ingels, 2009; for other relevant findings based on the same sample, see Peguero, Zavala, Shekarkhar, & Walker-Pickett, 2018). One ethnographic study conducted in two alternative schools serving mostly Latino students similarly found that girls often left school because of domestic responsibilities or problems in close relationships, whereas boys' departures were more likely to happen in the context of disruptive or delinquent activities (Kelly, 1993). Moreover, because they were of a less confrontational nature than boys' problems, girls' difficulties often went unnoticed or were dismissed by school personnel, a finding underscoring the importance of understanding gender differences in the dropout process.

Limits of previous studies

The studies just reviewed comparing exposure to certain types of stressors among dropout boys and girls are limited in several ways. Importantly, these studies do not formally examine whether this exposure interacts with gender in models predicting dropout, and thus cannot determine whether different types of stressful life events are differentially associated with dropout among boys and girls, after holding other factors constant. Holding constant key background predictors of dropout such as grade retention, school engagement, or placement in

special education is important for understanding the unique role of triggering SLE (Dupéré et al., 2015). Studies focusing on boys' and girls' exposure to SLE and on SLE-dropout associations beyond these initial vulnerabilities are therefore needed, to examine both differential exposure and differential sensitivity as a function of gender.

More broadly, studies about gender differences in exposure to SLE and its association with adolescent outcomes (including but not limited to dropout) generally suffer from another important methodological shortcoming: their overwhelming reliance on flawed self-reported checklists (Dohrenwend, 2006; Hammen, 2018; Harkness & Monroe, 2016). A major drawback of such checklists is that they are prone to reflect participants' internal states, as opposed to their actual exposure to external stressors. For example, depressed individuals tend to perceive the world more negatively and thus endorse more items describing negative events, regardless of the nature or gravity of the events they experienced (Dohrenwend, 2006). This limitation threatens the validity of the results of many studies looking at gender differences in exposure to SLE; for instance, given that girls report more depressive symptoms, any gender difference in levels of exposure may reflect this vulnerability, rather than true differential exposure (Davis et al., 2011; Hammen, 2005; Hatch & Dohrenwend, 2007). Notably, for this reason, researchers have been strongly encouraged to move away from checklists and instead use interview-based measures in which blinded raters use pre-established rules to decide what counts as a significant SLE (Hammen, 2018; Harkness & Monroe, 2016).

Objectives

The first objective of this study is to compare SLE exposure, as assessed by a state-of-the-art interviewer-based instrument, among academically vulnerable boys and girls. Boys and girls are compared in terms of overall exposure to any SLE, as well as in terms of exposure to

specific types of SLE previously shown to be differently prevalent or consequential as a function of gender (i.e., related to problems in school or with authority figures and in close relationships). The second objective is to determine whether recent exposure to SLE is differentially associated with dropout as a function of gender, beyond student initial vulnerabilities (i.e., low academic achievement, retention, school disengagement, placement in special education). In terms of hypothesis, it is expected that girls will be exposed to more relational events involving family members, romantic partners or peers (exposure) and that these events will be related more strongly to dropout for them (sensitivity); conversely, SLE related to performance in school or to conflicts with authority figures are expected to be both particularly frequent (exposure) and strongly related to dropout (sensitivity) among boys.

Method

Prior to data collection, appropriate ethical approval was obtained from the Université de Montréal Institutional Review Board. Informed consent was obtained from all participants. APA ethical standards were followed in the conduct of the study, as well as those described in Canada's Tri-Council Policy Statement: Ethical conduct for research involving humans.

Sample

The recruitment procedure is succinctly presented, as it has been described in detail elsewhere (Dupéré, Dion, Leventhal, et al., 2018). Twelve francophone public high schools with high dropout rates ($M = 36\%$) in and around the city of Montreal, Canada, participated between 2012 and 2015. In each school, students of at least 14 years of age were invited to participate in an initial screening phase, and the vast majority (97%) agreed ($N_{\text{screened}} = 6,773$). During this phase, students were administered, early in the school year, a short screening questionnaire measuring basic sociodemographics and initial dropout risk (see Measures).

In a second phase, a selected subset of students was invited to participate in face-to-face interviews. These interviews were conducted in the year following the initial screening, about six months later, on average. During the interviews, the participants were asked by trained graduate students about their exposure to SLE in the last 12 months ($N_{\text{interviewed}} = 545$). A participation rate of 70% was obtained (with rates of 65%, 70% and 77% among dropout students, matched at-risk schoolmates, and average, normative schoolmates respectively), which was high, given the overrepresentation of socioeconomically disadvantaged, academically vulnerable adolescents (Dupéré et al., 2015).

The interviewed participants fell into three categories. First, all students who dropped out of school in the year following the initial screening were invited. School staff informed the research team as soon as a student dropped out, and meetings were quickly arranged for those who consented to be interviewed. Second, following a matched case-control logic, after each completed interview with a recent dropout, a second interview was conducted with a persevering student from the same school and program, of the same gender, and with a similar individual risk for dropout, according to a risk index administered during the screening phase (see Measures). To the extent possible, matched students were also similar to dropout students in terms of family background. This matching procedure was generally successful: Compared to matched at-risk students, dropout students were not significantly different in a number of key background characteristics (gender; age; immigration and visible minority status; parental education; maternal employment; special education; grade retention; school engagement; and aspirations and grades), although they were significantly less likely to have employed fathers (69% vs. 80%) and more likely to have separated or divorced parents (70% vs. 54%; see Authors 2018 for details).

Third, schoolmates with scores on the risk index that were close to their school's average were invited to participate to form a second, not-at-risk or "average" comparison group. Not surprisingly, compared to the two other groups, this "average" not-at-risk group generally tended to be more advantaged, notably because these students had more educated parents, were less often placed in special education and retained, and presented higher school engagement and aspirations (see Authors 2018 for details).

Measures

Table 1 presents, for each continuous and dichotomous measure, respectively, means and percentages as a function of gender. Control variables measuring stable long-term risk factors for dropout are listed first in the upper panel (sociodemographics, individual risk profile, and chronic stress), followed, in the lower panel, by measures of recent exposure to SLE.

Sociodemographics. Background characteristics were self-reported in the initial screening phase. Basic sociodemographics measured included individual (gender, age, visible minority, and immigration status) and family (family structure and parental educational and work status) characteristics (see Table 1 for coding details). Late adolescents are reliable informants for these variables (Ensminger et al., 2000).

Individual risk profile. Individual vulnerability for school dropout was captured via 1) a variable indicating whether participants were in special education, and 2) an index with good predictive validity designed to assess dropout risk, based on seven questions about major determinants of dropout (e.g., grade retention, school engagement; Archambault & Janosz, 2009). In the present sample, this self-reported index was reliable ($\alpha = .76$) and showed good predictive validity, as it was more predictive of actual dropout than administrative data about related risk factors like truancy and imposition of disciplinary sanctions, with areas under the

ROC curve of 0.81 and 0.73 for the self-reported and administrative-based indices, respectively (Gagnon et al., 2015).

Exposure to SLE. Exposure to SLE was measured using a version of the Life Events and Difficulties Schedule (LEDS, Brown & Harris, 1978; Brown et al., 1992; Frank, Matty, & Anderson, 1997), adapted for academically vulnerable adolescents (Authors, 2017). The LEDS is considered the gold standard for measuring exposure to SLE in a reliable and valid manner (Harkness & Monroe, 2016). The adapted version used in this study was also found to be reliable and valid (detailed psychometric properties are available in Dupéré et al., 2017).

Trained interviewers used the semi-structured protocol of the adapted LEDS to ask participants about any significant event that had occurred in the past 12 months, in a variety of domains (relationships—family, peer, and romantic—, education, health, legal, finances, work, housing, and miscellaneous). After each interview, the interviewer wrote a detailed report containing an objective description of each of the events reported, leaving out the subjective reaction of the interviewee. Using these reports, two raters blinded to the status of the participants (dropout, matched at risk or average) coded each event along two dimensions, based on detailed rules and examples laid out in LEDS coding manuals.

The raters first attributed to each event a broad domain (e.g., romantic relationships) and a subdomain (e.g., break-up). Interrater reliability (kappas) for the domain and subdomain classifications was of .81 (see Dupéré et al., 2017). Second, raters chose for each event a contextual threat or severity, defined as the level of disruption that the event would typically bring, on average, in similar circumstances, regardless of the actual level of stressfulness perceived by the interviewee. Contextual threat was rated on a 5-point scale (1 = marked, 2 = moderate-high, 3 = moderate-low, 4 = some, 5 = little). Similar events could receive different

levels of contextual threat; to illustrate, the death of a grandparent would be rated as markedly threatening if the grandparent was the adolescent's main guardian but less so in cases in which contact and level of emotional engagement were very limited. Interrater reliability (intraclass correlations) for threat/severity ratings was .81 (Dupéré et al., 2017).

For the analyses, only moderate and severe SLE were retained, following previous findings showing that only such SLE are associated with dropout and other problems emerging in adolescence; Also, only events occurring in the most recent six months were retained, again based on previous findings underscoring the relevance of SLE exposure in the six-month window prior to onset (Dupéré, Dion, Leventhal, et al., 2018; Harkness et al., 2010). Moreover, for analytical purposes, the stressors were aggregated in three theoretically relevant categories, based on their attributed domain and subdomain. These categories were: 1) school problems (e.g., failure) or conflicts with authority figures (e.g., school principal, police); 2) problems or changes in close relationships, including in family, peer, or romantic relationships (e.g., instability, conflicts, neglect, break-ups); and 3) other/miscellaneous (e.g., money problems). For each of these categories (as well as for a fourth general exposure category to at least one event of any type), a dichotomous variable representing exposure to one or more stressors vs. no exposure (1/0) was created.

Exposure to chronic stressors. The LEDS also measures exposure to chronic stressors or difficulties unfolding over months and even years. LEDS-assessed chronic stressors capture long-term risk factors for dropout not already assessed by the dropout risk index such as conflictual family environments or chronic poverty. Previous findings obtained in the present sample indicate that LEDS-derived scores for chronic difficulties were reliable (with kappas and ICC ranging between .79 and .81 for classification and severity ratings, Dupéré et al., 2017) and

valid, as the risk for dropout was higher among youths exposed to at least two severe and ongoing difficulties (Authors, 2018), as compared to those exposed to one or less such difficulty. A dichotomous variable representing exposure to at least two severe chronic difficulties was thus computed and considered as an additional control variable.

High school dropout. Adolescents were considered to have dropped out when they met at least one of three conditions according to school records. First, they could have filed an official notice of schooling termination before obtaining a diploma. Second, they could have asked for a transfer to the adult sector (General Education Development [GED] credential equivalent). These students are typically considered non-graduates because GED graduates are more similar to dropout students than to high school graduates in a number of outcomes (Heckman, Humphries, & Kautz, 2014). Third, adolescents who had stopped attending school for at least one month without justification were counted as dropout students.

Results

Differential exposure to SLE. The first objective regarding differential exposure was examined through chi-square tests conducted in the full sample. These tests compared the percentage of adolescent boys and girls exposed to SLE (overall and to specific event types). Results presented in Table 1 (bottom panel) show that overall exposure to at least one moderate or severe SLE in the past six months was not significantly different among boys and girls. However, gender differences emerged when considering specific types of SLE, with boys being marginally more exposed than girls to SLE related to school and conflicts with authority figures (15.8% vs. 10.4%, respectively), and girls being significantly more exposed to relational SLE (28.1% vs. 18.2%). “Other” SLE not fitting in these two categories were equally prevalent for adolescent boys and girls.

To determine whether gender differences observed in the full sample would also apply to dropout participants specifically, a subgroup of particular interest, similar chi-square tests were conducted among students who had dropped out of high school, only. In that group, exposure to SLE related to school or authority conflicts was about twice as high among dropout boys than dropout girls (29.3% vs. 15.5%; Pearson's chi-square (1, N = 183) = 4.9; $p < .05$), whereas exposure to relational SLE was about 1.5 times higher among dropout girls than boys (40.5% vs. 26.3%; Pearson's chi-square (1, N = 183) = 4.2; $p < .05$). To probe in more detail these differences between dropout boys and girls in SLE exposure, further inspections of descriptive data were conducted, focusing on SLE subdomains within the broad SLE types (events related to problems in school or with authority figures and relational events). To do so, the percentage of events associated with specific subdomains encompassed in the broader types were calculated separately for dropout boys and girls; also, the short vignettes describing the events to which dropout boys and girls were exposed were consulted. The results indicated that events that were particularly frequent among boys tended to involve physical aggression, fights, and assaults. For instance, suspensions were not only overrepresented among dropout boys compared to girls (representing 41% vs. 20% of school-related events, respectively), they were also often imposed following boys' involvement in physical fights with other students or in aggressive behavior toward school personnel, whereas among girls, suspensions were typically the result of non-aggressive rule breaking (drug use at school, dress code violations, truancy). Conversely, for dropout girls, relational SLE were particularly susceptible to involving abusive behaviors toward them, with a general overrepresentation of events with sexual undertones. For example, whereas SLE involving physical fights with peers did not occur among girls but only among boys (0% vs. 36% of relational events, respectively), other forms of peer-related conflicts and victimization

(e.g., name calling) were more common among girls than boys (31% vs. 9%), especially those involving sexual content (e.g., slut-shaming).

Differential reactivity SLE. Differential reactivity to SLE was examined in two steps. In a first bivariate step, chi-square tests stratified by gender were conducted, comparing rates of SLE (overall and specific types) between the three groups of participants (dropout, matched at risk and average not at risk students). The results, presented in Table 2, show that when considering the overall presence of any severe or moderate SLE, dropout girls (Pearson's chi-square (1, N = 168) = 5.4, $p < .05$) and boys (Pearson's chi-square (1, N = 198) = 12.1, $p < .001$) both presented significantly more SLE than matched at-risk schoolmates. In contrast, when distinguishing between different types of SLE, the patterns of association were different for boys and girls. Among girls, significant differences between dropout and matched at-risk peers emerged only for relational SLE, whereas among dropout boys compared to matched peers, only one type of SLE, that related to school problems or conflicts with authority figures, was significantly overrepresented. For their part, average, not-at-risk students almost always presented less SLE than dropout participants, regardless of type.

In a second step, these bivariate associations were further probed in multivariate logistic regression models (conducted in SAS 9.4), predicting dropout while considering a range of potentially confounding control variables that are generally recognized as the strongest predictors of dropout (listed in Table 1, upper panel). In these models, potential differential associations as a function of gender were tested directly by incorporating main effects and interaction terms for exposure to SLE (overall and to specific types) and gender. Only dropout and matched at-risk students were included in the regression models, to obtain a credible comparison group of non-dropout peers and to ensure consistency with previous analyses of this

data set (Authors 2018a, Authors 2018b). Again, following previous analyses, the “cluster” command of the SAS surveylogistic procedure was applied to account for within-school clustering.

A preliminary series of logistic regressions focused on the overall presence of any severe or moderate SLE in the past six months. A first model incorporated a variable representing overall SLE, along with the full set of control variables (listed in Table 1, upper panel). Over and above this full set of controls, “overall SLE” was significantly associated with dropout (OR = 2.4; 95% CI = 1.2–4.6; full results available upon request). A second model added a variable representing the interaction between “overall SLE” and male gender. This interaction term was not significant (OR = 1.6; 95% CI = 0.7–4.2; full results available upon request). In other words, consistently with bivariate findings, overall exposure to SLE was significantly associated with dropout, and this association was similar among boys and girls.

The next series of models focused on SLE of specific types, with the goal of determining whether the differential results found in the gender-stratified bivariate analyses would be detectable in models formally testing for interactions by gender while controlling for other risk factors. Three models were tested, one for each type of SLE. These models incorporated the full set of control variables, along with variables representing male gender, exposure to the focal SLE type, and their male* SLE interaction. The results of the two models focusing on relational and “other” SLE were similar to those found for overall exposure, in the sense that no significant interaction with gender emerged (full results available upon request). However, for school/authority-related SLE, a significant interaction with gender was found, indicating that this type of SLE was more strongly associated with dropout among adolescent boys than girls (see Table 3). In a pattern echoing the descriptive findings, and in line with visual representations of

the findings (see Figure 1), the results suggest that, beyond initial vulnerabilities, this type of SLE is significantly associated with dropout only among boys.

Discussion

The goal of this study was to determine whether exposure or sensitivity to SLE may have contributed to high school dropout in gender-specific ways, among academically vulnerable adolescent boys and girls. In general, SLE were similarly present among girls and boys dropping out of school, and these stressors appeared to play a similar precipitating role in both groups, after accounting for other potentially confounding risk factors. Gender-specific findings emerged, however, when distinctions were made between types of stressors. In terms of *exposure*, compared with their male counterpart, girls who dropped out of school were less exposed to school problems and conflicts with formal authority figures but more exposed to relational SLE involving family members or peers (including romantic partners). In terms of *sensitivity*, boys consistently showed a particular vulnerability to SLE related to school problems or to conflicts with authority figures. Among girls, basic bivariate findings pointed to a particular sensitivity to relational SLE, but these findings were not supported in analyses formally investigating gender differences while controlling for other potentially confounding variables.

Links with previous findings and practical implications

Past studies have repeatedly shown that specific SLE are differently prevalent and related to the onset of contrasted mental health and behavior problems among adolescent boys and girls (e.g., see Rosenfield & Mouzon, 2013). The present study adds to this literature by showing that gendered patterns may apply to adolescents' premature departures from school, as well. The following paragraphs discuss the implications of these findings for boys, girls, and schools.

Boys and school/authority-related events. Relatively few studies have focused on males' exposure to SLE and its association with adjustment. Nevertheless, in accordance with strain theory, it is increasingly clear that compared with women, men tend to be more exposed to SLE signaling a failure to achieve external markers of success or involving crime or aggressive encounters with people outside one's close circle of significant others; when confronted with such SLE, men tend to respond with more externalized behaviors (e.g., angry outbursts, substance abuse; Broidy & Agnew, 1997; Davis et al., 2011; Laurent, Vergara-Lopez, & Stroud, 2016; Rosenfield & Mouzon, 2013; Sigfusdottir & Silver, 2009; Stroud et al., 2009; Stroud et al., 2017; Stroud, Salovey, & Epel, 2002). The results of the present study suggest that dropout may represent another type of response to failure or conflicts with authority figures expressed by adolescent boys in particular. Given the long-term consequence of high school dropout, considering this outcome appears crucial for understanding the full impact of SLE on men and boys.

In terms of practical implications, reducing conflicts with school personnel may be an important avenue of intervention for encouraging boys' school perseverance. To achieve this goal, programs and policies can be applied at both the individual and institutional levels. At the individual level, programs targeting anger and stress management among academically vulnerable students could prove useful (e.g., Malboeuf-Hurtubise, Lacourse, Taylor, Joussemet, & Ben Amor, 2017). At the institutional level, schools can improve their policies related to the management of misbehavior, for instance, by finding alternatives to practices such as out-of-school suspension and expulsion. These practices, recognized as generally detrimental, are known to be distinctively problematic for adolescent boys because of their swollen prevalence in this group (see American Academy of Pediatrics Council on School Health, 2013; Skiba et al.,

2014). Their special significance for boys is further underscored by the results of the present study, suggesting that suspensions may be particularly likely to lead to dropout for them. This later finding may reflect the fact that for boys more than for girls, suspensions are often triggered by aggressive conflicts with school personnel, a situation with the potential to lead to wider, harder to mend breaches, lingering angry feelings and longer suspensions. Regardless, replacing exclusionary disciplinary practices with alternatives such as coordinated behavioral modification plans or in-school suspensions (in which students excluded from the classroom spent a prescribed amount of time in a separate room within the school, see Morris & Howard, 2003) could certainly help to keep boys in school longer, while benefitting the student body, as a whole (American Academy of Pediatrics Council on School Health, 2013).

Beyond conflicts with authority figures, the results also suggest that recent school failure may bear a disproportionate impact on boys' perseverance, potentially because failure signals incompetence and a lower status in the school's hierarchy, representing areas of particular sensitivity among boys according to strain theory (Broidy & Agnew, 1997). This apparent negative impact could be countered by providing academically vulnerable boys with opportunities to exhibit skills and competence in school through curriculum improvements (e.g., see Dion et al., 2011) or by providing boys with alternative, non-academic ways to show competence. In this vein, extracurricular activities such as sports or music bands could be particularly important for keeping boys in school and for their mental health more broadly. This proposition is supported by findings suggesting that participation in extracurricular activities may yield more benefits for boys than for girls (see Vandell, Larson, Mahoney, & Watts, 2015). If so, widespread policies such as No pass/No play that exclude adolescents with failing grades

from extracurricular activities could be particularly insensitive to boys' needs and deleterious for their perseverance (Burnett, 2000).

Girls and relational events. In accordance with the “cost-of-caring” perspective (Kessler & McLeod, 1984), relational SLE involving significant others have been repeatedly found to be more prevalent among girls than boys and to have more impact on the former's mental health and adjustment, at least when indexed by measures of depression and internalized distress (e.g., Oldehinkel & Bouma, 2011; Rosenfield & Mouzon, 2013). The findings of the present study echo and expand this literature by showing that the overrepresentation of relational SLE among girls compared to boys exists not only among depressed or anxious adolescents but also among another vulnerable group: dropout adolescents (see also Dalton et al., 2009). The results also expand extant research by underscoring that SLE, and first and foremost relational events, have the potential to seriously disrupt girls' schooling trajectories. Overall exposure to SLE was significantly related to dropout, and this link that was as strong among girls as it was among boys. Among girls, this link seem to be underpinned by relational event in particular, given that for them most SLE were of that kind.

It would be relevant, in future research, to examine in more details exposure and sensitivity to specific types or relational events, for instance involving peers, family members of romantic partners. Also, given that access to social support in some relationships might shield from the negative impacts of problems in other relationships (Pearlin & Bierman, 2013), the negative impact of relational SLE might be particularly visible when more than one close relationship is impacted, for instance, when girls experience SLE involving both their parents *and* their friends. This hypothesis seemed supported by exploratory findings showing that among

girls, the relational SLE-dropout link was particularly marked when considering exposure to *at least two* relational SLE.

Despite the apparent relevance of relational SLE among girls for whom such events are quite prevalent, researchers and service providers interested in preventing dropout have paid them little attention (Dupéré et al., 2015; Freeman & Simonsen, 2015). This neglect can be attributed to the fact that relational stressors are often hidden to those not directly involved, in contrast with the more conspicuous events often flaring among dropout boys, notably physical fights. The overrepresentation of concealed relational stressors among girls raises the possibility that girls' difficulties may go unnoticed or be trivialized (for a similar argument, see Kelly, 1993). To address this gap, school-based programs aimed at reducing abuse and violence in peer and romantic relationships as well as efforts to change gender-related double standards may provide a good starting point (e.g., Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Foshee et al., 2004; Olweus & Limber, 2010). Future research on such programs should thus attempt to assess impact, not only on mental health but also on school perseverance.

Strengths and limitations

This study has notable strengths. SLE were measured with a gold standard instrument (see Harkness and Monroe, 2016) at a critical point in time (i.e., with interviews conducted immediately when youth dropped out). SLE were also assessed among dropout participants and a carefully matched group of at-risk students selected from a pool of over 6,500 adolescents expressly screened to establish their individual vulnerability for dropout. We assessed, via a unique study design in which youth were interviewed just after dropping out and compared to a carefully matched control, the association between SLE and student dropout beyond their preexisting vulnerabilities.

However, the results must be interpreted in light of at least three limitations. First, even though the sample size could be considered large, given the intensive nature of the measurement strategy (Harkness & Monroe, 2016), a relatively limited ($N = 545$) number of adolescents were interviewed. As a result, SLE subdomains had to be grouped in larger theoretically relevant types, rather than considered separately. It could have been revealing, for instance, to consider school suspensions separately, rather than as part of the larger “school/authority-related SLE” category, or to consider problems with family members, peers, and romantic partners separately and cumulatively rather than as part of a larger “relational SLE” category.

Second, the sampling strategy focused on schools with high dropout rates in one region of Canada, and the findings could thus be idiosyncratic. This, however, is unlikely, since findings from this study echo those of other studies conducted in various countries with both nationally representative and clinical samples (e.g., see Rosenfield & Mouzon, 2013). Still, replications are required, especially since the link between SLE and dropout among adolescent boys and girls has rarely been examined (for a notable exception, see Kelly, 1993).

Third, key risk factors for dropout (i.e., placement in special education and dropout risk index) were measured only a few months before dropout occurred, and stressor exposure was assessed retrospectively. Longer-term prospective follow-ups starting earlier in students’ schooling careers would provide more information about past experiences; however, such designs present their own limitations, since youth who ultimately drop out of high school disproportionately drop out of longitudinal studies, as well (see Authors, 2015).

Conclusion

The present study shows that boys’ and girls’ differential exposure to certain SLE may be consequential, not only for mental health problems such as depression or substance abuse but

also for adolescents' educational attainment. Considering adolescent functioning globally, including internalized and externalized problems, as well as school maladjustment, thus appears necessary to better understand the consequences of SLE exposure during this period of the life course characterized by heightened sensitivity to stress (Romeo, 2017). In terms of practical implications, the results suggest that to reduce dropout among both boys and girls, schools and other institutions should try to curb adolescents' exposure to a range of SLE and to protect them from the negative effects of these stressors.

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Table 1 *Sample Characteristics (N = 545)*

	Girls (n = 260)		Boys (n = 285)	
	%	<i>M</i> (<i>SD</i>)	%	<i>M</i> (<i>SD</i>)
Control variables				
Sociodemographics				
Age		16.26 (0.92)		16.38 (0.92)
Immigrant status	33.1		36.1	
Visible minority	21.2		25.3	
Parental education ¹		2.55 (0.93)		2.67 (0.97)
Maternal employment	70.0		69.8	
Paternal employment	74.2		77.5	
Separated/divorced parents	61.2		55.4	
Individual risk profile				
Special education	25.8**		36.1	
Dropout risk index ²		0.29*** (1.92)		0.89 (1.78)
Long-term exposure to chronic stressors				
Exposed to a least two chronic difficulties	18.1†		12.6	
Stressful life events (SLE) exposure				
Recent stressful life events (past 6 months)				
Exposed to any moderate or severe SLE	38.8		33.7	
School/authority-related SLE	10.4†		15.8	
Relationship-related SLE (family/peers/romantic)	28.1**		18.2	
Other SLE	11.9		12.3	

Note. Means and percentages were compared through ANOVAs and chi-square tests, respectively. ¹ Maximum level of education attained by one parent; 1 = primary to 4 = university. ² This index was calculated based on seven questions: 1) Number of retentions 1 = none to 4 = three times or more; 2) Attitude toward school 1 = I do not like school at all to 4 = I like school a lot; 3) Importance of grades 1 = Not important at all to 4 = Very important; 4) Aspirations 1 = No particular aspirations to 6 = University aspirations; 5) Perceptions of grades 1 = Among the worst students to 5 = Among the best students; 6) Language arts and 7) math grades 1 = 0–35% to 14 = 96–100%. These questions were combined to generate an index of risk centered at 0 with a *SD* of 1 in the general population of high school students (Archambault & Janosz, 2009).

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2 *Percentage of Boys and Girls Exposed to Moderate/Severe SLE of Different Types in the Past Six Months, as a Function of Risk*

Type of SLE		Girls (n = 260)			Boys (n = 285)		
		Dropout (n = 84)	Matched (n = 84)	Average (n = 92)	Dropout (n = 99)	Matched (n = 99)	Average (n = 87)
Overall exposure (Any SLE)	%	56.3 _{a,b}	35.7 _a	28.3 _b	46.5 _{a,b}	22.2 _a	32.2 _b
School/authority	%	15.5 _a	10.7	5.3 _a	29.3 _{a,b}	6.1 _a	11.5 _b
Relationships (family/peers/romantic)	%	40.5 _{a,b}	26.2 _a	18.5 _b	26.3 _a	15.2	12.6 _a
Other	%	16.7 _a	13.1	6.5 _a	14.1	8.1	14.9

Note. SLE: Stressful life events. Percentage sharing subscripts within gender groups differ significantly at the $p < .05$ level, based on Pearson Chi-square tests.

Table 3 *Multiple Logistic Regression Regressing Dropout on School/Authority-Related Stressful Life Events (SLE) Exposure and Including Moderation by Gender (n = 366, Dropout and Matched Students Only)*

	B	SE	Wald	OR	95% CI
Sociodemographics					
Male	-0.13	0.13	1.03	0.88	[0.69-1.13]
Age	0.29**	0.10	8.60	1.34	[1.10-1.63]
Immigrant status	0.15	0.25	0.38	1.16	[0.72-1.89]
Visible minority	-0.44	0.29	2.37	0.64	[0.36-1.13]
Parental education	-0.02	0.12	0.04	0.98	[0.78-1.23]
Maternal employment	-0.02	0.22	0.01	1.02	[0.66-1.57]
Paternal employment	-0.45†	0.26	3.13	1.57	[0.95-2.59]
Separated/divorced parents	0.68***	0.18	14.18	1.97	[1.38-2.80]
Individual risk profile					
Special education	0.03	0.22	0.01	1.03	[0.66-1.59]
Dropout risk index	-0.12*	0.05	5.34	0.89	[0.80-0.98]
Exposure to chronic stressors					
≥ 2 severe chronic difficulty	1.31***	0.27	23.55	3.70	[2.18-6.27]
Recent (≤ 6 months) SLE					
School/authority-related SLE	0.28	0.46	0.36	1.32	[0.53-3.28]
Interaction with gender					
School/authority-related SLE X Male	1.54*	0.70	4.90	4.67	[1.19-18.3]

Note. B = Beta. SE = Standard Error. OR = Odds Ratio. CI = Confidence Interval. The “cluster” command in the SAS surveylogistic procedure was used to account for within school clustering.
 † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

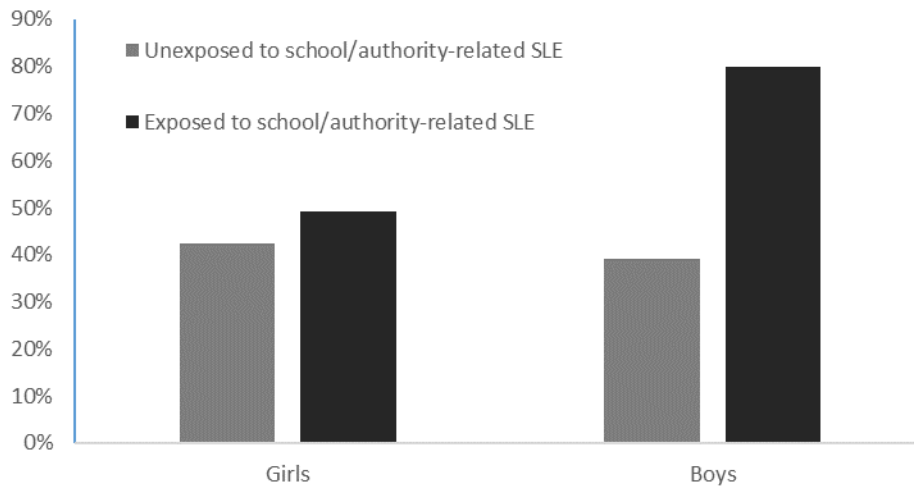


Figure 1. Predicted proportions (based on the model presented in Table 3) of dropout cases among girls and boys, as a function of exposure to school/authority-related SLE, while holding other control variables constant at their average level (of the dropout and matched at-risk groups, $n = 366$).