Assessing the strength of secondary school tobacco policies of schools in the COMPASS study and the association to student smoking behaviours

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Abstract

Objectives The school environment is an ideal setting to introduce policies to prevent smoking behaviour. However, there may be variability in the strength of school board and secondary school tobacco policies, which may affect student smoking behaviours. This study assessed the strength of a sample of school board and secondary school tobacco policies and examined the association with student smoking behaviours.

Methods Tobacco policies from school boards ($n = 21/26$) and secondary schools ($n = 43/81$) that participated in the COMPASS study during 2015–2016 were obtained online. A standardized instrument was used to assess the strength of school board and secondary school tobacco policies on four domains. Using the sample of students from schools with identified policies ($n = 22,696$), separate multilevel regression models examined the association between school policy scores and a student's susceptibility to smoking, ever smoking, current smoking, and perceived support of the school environment.

Results The mean school board tobacco policy score was 13.7/40 and the mean secondary school tobacco policy score was 11.3/40. Students were significantly less likely to report current smoking (OR 0.95, 95% CI 0.91–0.99) and more likely to report a supportive school environment (OR 1.06, 95% CI 1.04–1.08) with each four-unit (i.e., 10%) increase in school tobacco policy score.

Conclusions The vast majority of school board and secondary school tobacco policies were missing components and therefore could not be considered comprehensive. Stronger school tobacco policies may help to reduce student current smoking behaviours.

Résumé

Objectifs Le milieu scolaire est l'endroit idéal où introduire des politiques de prévention du tabagisme. Les effets des politiques des conseils scolaires et des écoles secondaires sur le tabagisme des élèves peuvent toutefois varier selon la rigueur de ces politiques. Nous avons évalué la rigueur des politiques antitabac d'un échantillon de conseils scolaires et d'écoles secondaires et examiné son association avec le tabagisme des élèves.

Méthode Les politiques antitabac des conseils scolaires ($n = 21/26$) et des écoles secondaires ($n = 43/81$) ayant participé à l'étude COMPASS en 2015–2016 ont été obtenues en ligne. À l'aide d'un instrument standardisé, nous avons évalué la rigueur de ces politiques dans quatre domaines. Dans notre échantillon d'élèves fréquentant les écoles ayant des politiques antitabac ($n = 22,696$), nous avons utilisé des modèles distincts de régression multiniveau pour examiner l'association entre la note attribuée à la politique scolaire et la susceptibilité de fumer d'un élève, son tabagisme passé, son tabagisme actuel et le soutien perçu du milieu scolaire.

Résultats La note moyenne attribuée aux politiques antitabac des conseils scolaires était de 13,7/40, et la note moyenne attribuée aux politiques antitabac des écoles secondaires était de 11,3/40. Pour chaque hausse de quatre unités (c.-à-d. 10 %) de la note attribuée à une politique scolaire antitabac, les élèves étaient significativement moins susceptibles de dire fumer actuellement

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(RC 0,95, IC de 95% 0,91–0,99) et plus susceptibles de se dire soutenus par le milieu scolaire (RC 1,06, IC de 95% 1,04–1,08). **Conclusions** La très grande majorité des politiques antitabac des conseils scolaires et des écoles secondaires ont été jugées incomplètes; il leur manquait des éléments. Des politiques scolaires antitabac plus rigoureuses pourraient contribuer à réduire le tabagisme actuel des élèves.

Keywords School health promotion · Adolescent · Cigarette smoking · School tobacco policy

Mots-clés Santé scolaire · Adolescent · Consommation de cigarettes · Politiques scolaires antitabac

Introduction

Tobacco use is a significant cause of death and disability with in Canada (Cancer Care Ontario, Ontario Agency for Health Protection and Promotion (Public Health Ontario) 2012). Despite knowledge of the harmful effects of cigarette smoking, many adolescents continue to experiment with tobacco use; data from a nationally representative sample of Canadian youth aged 15–19 years indicate that 18.2% report having smoked a whole cigarette (Reid et al. 2017). Given that smoking patterns established during adolescence tend to persist into adulthood (Chassin et al. 1990), initiatives focused on deterring smoking uptake and progression among adolescents remain a public health priority.

According to the Theory of Triadic Influence (TTI), youth smoking behaviour may be determined by various levels of influence, including individual-level factors (e.g., gender), socio-environmental factors (e.g., family influences), and broader contextual factors (e.g., the school policy environment) (Flay and Petraitis 1994). Given that schools provide access to a large and diverse number of youth, the school setting represents an equitable context for the introduction of tobacco policies to prevent smoking behaviour. Schools have implemented a variety of tobacco control programs and policies that show potential in reducing smoking rates among youth populations. For example, clear restrictions regarding tobacco use at school and consistent enforcement of such policies are associated with reduced likelihood of smoking among students (Galanti et al. 2014). In addition, a comprehensive whole-school approach that includes multiple stakeholders (e.g., students, teachers, and community members) and avenues of intervention (e.g., curriculum, student engagement, and social and physical environments) is generally recommended. However, despite our knowledge of effective policies and programs (Coppo et al. 2014), there is a lack of guidance and support for schools to implement comprehensive, evidence-based tobacco-control policies within Canada (Leatherdale 2012). As efforts to adopt effective tobacco policies rise, the need for innovative and efficient tools to assess such policies also increases.

The School Tobacco Policy Index (STPI) is a standardized instrument that can be used to assess the comprehensiveness

of written tobacco policies (Boyce et al. 2009). The STPI was designed to assist evaluators, health educators, and community tobacco-control advocates in bolstering school tobacco policies (Boyce et al. 2009). The STPI consists of four comprehensive policy domains that cover the presence of smoke-free environments, enforcement of smoking policies, provision of prevention and cessation services, and communication of smoking policies. The use of this simple, easy-to-use rating form and checklist may act as a tool to help identify priority areas for busy school administrators and to identify the components of tobacco policies that are associated with reductions in smoking initiation and progression among youth populations. To our knowledge, the STPI has not been applied to school boards within a Canadian context. Additionally, this rating form has not been applied to individual school policies, and the association between school tobacco policy strength and student smoking behaviours has not been examined.

The purposes of this study were to (1) assess the strength of a sample of school board tobacco policies from Ontario and Alberta, Canada, using the validated STPI; (2) assess the strength of a sample of secondary school tobacco policies using the STPI; and (3) identify the association between school tobacco policy strength and student smoking behaviours.

Methods

Participants

The current analyses used data from the COMPASS study (2012–2021), a prospective cohort study designed to collect multilevel, longitudinal data from a convenience sample of Canadian students in grades 9 to 12 and the schools they attend (Leatherdale et al. 2014). We conducted an online search for school tobacco policy information for all schools that participated in the COMPASS study during the 2015–2016 data collection year (26 school boards and 81 secondary schools). For student-level analyses, we used data from the 2015–2016 data collection year because it was the most recent wave of data available. Student-level data were collected annually from students in class time using the COMPASS

questionnaire (Cq). A full description of the recruitment and data collection methods can be found online (www.compass.uwaterloo.ca) and in print (Leatherdale et al. 2014). The University of Waterloo Research Ethics Board along with all participating school boards approved all procedures, including the use of active information—passive consent permission protocols.

In 2015–2016, 40,436 students in grades 9 to 12 participated in the study from 72 secondary schools in Ontario and 9 secondary schools in Alberta (79.9% participation rate). Missing student data were primarily a result of student absenteeism during the data collection; few data were missing due to student or parent refusal. We identified tobacco policies for 21 school boards that participated in 2015–2016 and included 29,103 students. We also identified tobacco policies for 43 secondary schools that participated in 2015–2016 and included 22,696 students. Less than 7% of these students were excluded from the analyses due to missing outcome or control variables.

Instruments

School Tobacco Policy Index The STPI is a validated tobacco rating scale that assesses school board tobacco policies based on four domains (Boyce et al. 2009):

1. Tobacco-free environment (14 points): prohibiting tobacco use in school buildings, on school campus/grounds, and at school-sponsored events for students, staff, and visitors
2. Enforcement (12 points): identifying enforcement activities for students, staff, and visitors and particular individual(s) responsible for enforcement of policies
3. Prevention and treatment services (6 points): identifying prevention and cessation resources for students and staff
4. Policy organization (8 points): describing communication of the policy, rationale for the policy, and management of the policy

Each policy was reviewed according to the STPI instructions (available from <http://cphss.wustl.edu>). A point was given for each component that was explicitly stated within the policy.

COMPASS questionnaire Cq items have demonstrated reliability and validity for smoking among youth (Wong et al. 2012). Consistent with previous research, smoking susceptibility among never-smoking students was derived by three previously validated measures (Pierce et al. 1996; Cole et al. 2017); never-smoking students who responded “definitely not” to all three questions were classified as “not susceptible” to future smoking, while all other response groupings were classified as “susceptible” to future

smoking. Experimentation with smoking was measured with a single question: “Have you ever tried cigarette smoking, even just a few puffs?” Current smoking was measured with a single question: “On how many of the last 30 days did you smoke one or more cigarettes?” Students who indicated smoking cigarettes on one or more days in the past 30 were identified as current smokers, while all other students (including those who had never smoked cigarettes) were non-current smokers. Perceived support of the school environment was measured with a single multi-item question: “How supportive is your school of the following? Giving students the support they need to resist or quit tobacco.” Students who indicated that their school was “supportive” or “very supportive” were grouped together, while those who indicated that their school was “unsupportive” or “very unsupportive” were grouped together.

Procedure

The most up-to-date school board and secondary school tobacco policies were obtained from online sources in June 2016. School board tobacco policies could be listed on the school board’s website, while school tobacco policies were either listed on the school’s website or could be found in electronic versions of the student handbook/code of conduct. Secondary schools in Ontario ($n = 72$) and Alberta ($n = 9$) and the applicable school boards (Ontario $n = 18$, Alberta $n = 8$) were selected because of previous participation in the COMPASS study.

Data analysis

Two graduate students independently rated each school policy using the STPI (intraclass correlation coefficient = 0.78) and discussed ratings that differed until they reached consensus. Differences in total policy score (maximum score, 40) and scores across rating scale domains were identified and explored across school boards and secondary schools through basic descriptive statistics. To explore contextual factors that may impact school tobacco policy score, differences in scores were also explored according to urbanicity (i.e., rural/small urban, medium urban, or large urban) and school-level prevalence of current smoking (low ($< 5.6\%$) or high ($\geq 5.6\%$)).

This secondary analysis involved conducting four multilevel regression models to examine how school-level factors (i.e., tobacco policy scores) influence student-level behaviours (i.e., smoking behaviours). Given clear evidence that schools influence smoking behaviour (Sabiston et al. 2009; Adams et al. 2009) and the multilevel design of the COMPASS study, this type of analysis provides more precise parameter estimates, standard errors,

confidence intervals, and significance tests by accounting for clustering within the data (Guo and Zhao 2000). The multilevel regression models examined the association between school policy scores and a student's susceptibility to future smoking (model 1), ever smoking (model 2), current smoking (model 3), and perceived support of the school environment (model 4). We hypothesized that school policy scores would have a more direct influence on student behaviour rather than school board policy scores since students would be directly exposed to school policies. All models controlled for student-level clustering within schools, urbanicity, and self-reported student gender, grade, ethnicity, and number of friends who smoke cigarettes. SAS version 9.4 was used for all analyses.

Results

School board tobacco policy rating scores

Tobacco policies for 80.8% of school boards within the COMPASS study sample were identified (21/26 school boards). Tobacco policies were identified for 72.2% of school boards in Ontario, Canada (13/18), and 100.0% of school boards in Alberta, Canada (8/8). Table 1 presents a summary of score values for each domain of the rating scale and the overall score. Overall, tobacco policy scores for school boards were low; the mean score was 13.7/40.

Secondary school tobacco policy rating scores

Tobacco policies for 53.1% of secondary schools within the COMPASS study sample were identified (43/81 secondary schools). Schools with identified tobacco policies had significantly lower ever smoking (24.3% versus 29.2%, $p < 0.001$) and current smoking rates (10.5% versus 13.3%, $p < 0.001$). Susceptibility (29.5% versus 30.4%) and perceived support for quitting tobacco (56.3% versus 55.9%) did not differ significantly between schools with or without a policy score. Tobacco policies were identified for 51.4% of schools in Ontario, Canada (37/72), and 66.7% of schools in Alberta, Canada (6/9). Of the school policies identified, 62.8% (27/43) of the effective policy dates were for the 2015–2016 school year. Table 1 presents a summary of score values for each domain of the rating scale and the overall score. Overall, tobacco policy scores for secondary schools were low and lower than those of school boards; the mean score was 11.3/40. Figure 1 presents an example of the written tobacco policy for a low score (4/40) and high score (23/40) secondary school based on the STPI.

Domain-specific policy scores

Common gaps in tobacco policies emerged when examining domain-specific score values from the STPI across school boards ($n = 21$). Within Domain 1: Tobacco-free environment, most school board policies were targeted to students and prohibited smoking on school property (90.0%); fewer school board policies explicitly included staff or visitors (62.0%). Additionally, many school board policies were not explicit in prohibiting smoking at all times (i.e., 24 h a day/365 days a year) (24.0%). Within Domain 2: Enforcement, few school board policies mentioned there would be consequences for students caught violating the policy (38.0%) and even fewer school board policies identified specific consequences for violations by grade level or number of offenses (14.0%). Few school board policies identified consequences for staff or visitors caught violating the policy (29.0%). Additionally, few school board policies identified a specific person responsible for enforcing the policy (29.0%). Within Domain 3: Prevention and treatment services, less than half of school board policies mentioned tobacco prevention curriculum (38.0%) or identified cessation services for students (19.0%) or staff (19.0%). Finally, within Domain 4: Policy organization, few school board policies explicitly prohibited the use of other tobacco products such as smokeless tobacco (24.0%).

Similar gaps within tobacco policies emerged when examining domain-specific score values from the STPI across secondary schools ($n = 43$). Within Domain 1: Tobacco-free environment, most secondary school tobacco policies were targeted to students and prohibited smoking on school property (91.0%); few secondary school policies explicitly included staff or visitors (35.0%). Additionally, many secondary school policies were not explicit in prohibiting smoking at all times (i.e., 24 h a day/365 days a year) (44.0%). Within Domain 2: Enforcement, most secondary school policies mentioned there would be consequences for students caught violating the policy (91.0%) but did not identify specific consequences for violations by grade level or number of offenses (58.0%). Few secondary school policies identified consequences for staff or visitors caught violating the policy (21.0%). Additionally, few secondary school policies identified a specific person responsible for enforcing the policy (30.0%). Within Domain 3: Prevention and treatment services, very few secondary school policies mentioned tobacco prevention curriculum (7.0%) or identified cessation services for students (14.0%) or staff (0.0%). Finally, within Domain 4: Policy organization, few secondary school policies provided a rationale for the development of the policy addressing health and/or environmental consequences of tobacco use (26.0%). Furthermore, many policies targeted cigarette use and did not explicitly include other tobacco products such as smokeless tobacco (51.0%). Interestingly, almost half of secondary school policies (47.0%), particularly more recent secondary

Table 1 Summary statistics for tobacco policy scores using the School Tobacco Policy Index (STPI) for school boards and secondary schools in Ontario and Alberta, Canada

	Domain 1: tobacco-free environment (/14)			Domain 2: enforcement (/12)			Domain 3: prevention and treatment services (/6)			Domain 4: policy organization (/8)			Overall (/40)		
	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max
School board tobacco policy scores ^a															
Overall	9	0	13	0	0	6	0	0	5	4	3	7	14	4	27
Secondary school tobacco policy scores ^b															
Overall	4	0	13	2	0	7	0	0	3	3	1	5	10	3	23
Urbanicity ^c															
Rural/small urban (<i>n</i> = 19)	3	1	9	2	0	7	0	0	2	2	2	4	7	3	20
Medium urban (<i>n</i> = 5)	4	3	8	2	1	6	0	0	0	3	2	3	9	7	17
Large urban (<i>n</i> = 19)	8	0	13	3	0	6	0	0	3	3	1	5	14	4	23
School-level prevalence of current smoking ^d															
High (<i>n</i> = 38)	4	0	13	2	0	7	0	0	2	3	1	4	9.5	3	23
Low (<i>n</i> = 5)	3	2	13	2	0	5	0	0	3	3	2	5	14	4	19

^a 21 school boards included; 8 school boards in Alberta, 13 school boards in Ontario

^b 43 secondary schools included; 6 secondary schools in Alberta, 37 secondary schools in Ontario

^c Urbanicity was determined based on school postal codes and Statistics Canada classifications of “rural” area and “small,” “medium,” and “large urban” population centres. “Rural” and “small” population-centre categories were combined due to the low frequency of rural schools

^d School-level prevalence of current smoking was based on the proportion of all students who reported smoking cigarettes in the last 30 days and 2014/2015 Canadian Student Tobacco, Alcohol and Drugs Survey estimates of past 30-day smoking for Ontario students. Schools were categorized as “low” if the school-level prevalence of smoking was < 5.6% and “high” if the school-level prevalence of smoking was ≥ 5.6%

Fig. 1 Example of a tobacco policy for (a) low score (overall = 4/40) and (b) high score (overall = 23/40) secondary schools in the COMPASS study based on the School Tobacco Policy Index (STPI)

a

SMOKING:

Smoking is not permitted on school property or in bus loading zones (as marked by signs). Smoking is only permitted on the sidewalk in front of the school.

b

SMOKING (TOBACCO ENFORCEMENT)

Provincial law (Tobacco Control Act) prohibits smoking anywhere on school property and/or while participating in any school-sanctioned event. Our school promotes a healthy lifestyle and actively discourages smoking due to its negative effects on the health of the smoker, and those in the vicinity that are exposed to second hand smoke. Any student found smoking on school property may be suspended from school and the Tobacco Enforcement Officer from the [REDACTED] Public Health may be contacted which may result in a minimum fine of \$305 for persons over the age of 16. Persons under the age of 16 must attend court with a parent or guardian. The selling, supplying or sharing of cigarettes with anyone under 19 can result in a fine up to \$365. This law applies to everyone (staff, students, parents, visitors) any time (“24 -7”) and anywhere on school property (including the parking lot, cars in the parking lot, sports fields, driveway, etc.).

Any student under the age of 16 smoking, or any other student 16 or over smoking between or during classes may be suspended. If you have any questions, contact the Tobacco Hotline 1-888-505-6074 or [REDACTED]. In addition, any cigarette facsimile, e cigarette or vaporizer, or chewing tobacco is prohibited.

school policies, explicitly included e-cigarettes in their tobacco policy.

Student-level findings

Table 2 presents the multilevel model findings of the association between school tobacco policy scores from the STPI and a student's likelihood of being susceptible to future smoking (model 1), ever trying smoking (model 2), current smoking (model 3), and perceiving the school to be a supportive environment (model 4). Only two significant findings were identified: for each four-unit (i.e., 10%) increase in school tobacco policy score (i.e., policy is stronger), students had lower odds of reporting current smoking (adjusted odds ratio [AOR] 0.95, 95% confidence interval [CI] 0.91–0.99, $p = 0.028$) and higher odds of reporting that their school provides the support they need to resist or quit tobacco (AOR 1.06, 95% CI 1.04–1.08, $p < 0.001$). Although this may seem like a small effect, there are important associations when examined in terms of real-world effect sizes. For example, students at a school with a tobacco policy score of 24 (a score just above the highest score identified) have approximately 23% lower odds of reporting current smoking relative to students at a school with a tobacco policy score of 4 (one of the lowest scores identified). Students at a school with a tobacco policy score of 40 (a perfect score) would have approximately 37% lower odds of reporting current smoking relative to students at a school with a tobacco policy score of 4.

Discussion

The School Tobacco Policy Index (STPI) was easily applied to school board and secondary school tobacco policies in Canada and quickly identified weak policy areas that could be improved. The STPI is an important knowledge translation

tool to help identify key priority areas for busy administrators. Although this tool has been used to evaluate school board policies in the United States (Boyce et al. 2009), it has not been applied to the Canadian context or to individual school policies. Despite it being common for schools to share information online, we found that many secondary schools did not have written tobacco policies that were easily accessible online. This may indicate a lack of communication of school tobacco policies to students, which may impact their effectiveness. Written school policies regarding tobacco use help to limit exposure to tobacco products and second-hand smoke at school, promote a smoke-free lifestyle for all students and staff, and support smoking reduction and cessation among students who smoke (Watts et al. 2010). Clear communication of school tobacco policies through student handbooks and signage is important to increase awareness of the policy, adoption, and compliance (Nykiiforuk, and University of Alberta, Centre for Health Promotion Studies 2010), and ultimately effectiveness as rules about smoking are clear and consistently enforced (Sabiston et al. 2009; Watts et al. 2010; Lovato et al. 2006). Considering this is relatively easy for schools to correct, researchers and stakeholders working within school settings should consistently ask schools whether their tobacco control policies are readily accessible and advise them to make them accessible if required.

Consistent with previous reviews of school board tobacco policies (Boyce et al. 2009; Stephens and English 2002), the vast majority of school board and secondary school policies were missing important components to be considered comprehensive. School tobacco policy scores in “rural/small urban” schools and schools with a high school-level prevalence of current smoking were generally lower than those of “medium urban” or “large urban” schools, or schools with a low school-level prevalence of current smoking. Additional research is needed to identify why these differences exist. Our results highlight that most policies were targeted to students and did

Table 2 Multilevel model results of the association between school tobacco policy scores using the School Tobacco Policy Index (STPI) and student smoking behaviours, 2015–2016 COMPASS study

	Adjusted odds ratio ^a (95% CI)			
	Model 1: susceptibility to future smoking	Model 2: ever tried smoking	Model 3: current smoking	Model 4: perceived supportive environment
Four-unit increase in school board tobacco policy score on the STPI ^b	1.02 (1.00, 1.05)	1.00 (0.98, 1.03)	1.00 (0.97, 1.03)	1.01 (0.99, 1.03)
Four-unit increase in school tobacco policy score on the STPI	0.98 (0.96, 1.01)	1.00 (0.97, 1.03)	0.95 (0.91, 0.99)*	1.06 (1.04, 1.08)**

^a All models controlled for student-level clustering within schools, school location (urban/rural), and self-reported student gender, grade, ethnicity, and number of friends who smoke cigarettes

^b School board model included data from 15 school boards

* $p < 0.05$; ** $p < 0.001$

not include staff or visitors, did not explicitly prohibit tobacco use at all times, and did not explicitly address and prohibit the use of all tobacco products, including cigarillos, little cigars, roll-your-own cigarettes, and smokeless tobacco. Many policies were also missing clear consequences for violating tobacco policies, school-level prevention resources, and school- or community-level cessation services. These components are necessary for creating a supportive smoke-free environment for students, staff, and visitors (Pierce et al. 2012).

This study represents the first to explore the association between school board and secondary school tobacco policy strength and student smoking behaviours. Unsurprisingly, the strength of school board tobacco policies had no effect on student-level behaviours. Given that school board tobacco policies are more distal to students than school tobacco policies, we expected that school tobacco policies would have a more immediate impact. However, results from the current study indicate that the strength of school tobacco policies only significantly impacted current smoking behaviours and perceptions of support: students at schools with stronger school tobacco policies were less likely to report current smoking and more likely to report that they believed their school provides the support students need to resist or quit tobacco. These findings were apparent despite the fact that most school tobacco policy scores were quite low. Although a strong school tobacco policy does not equate to strong policy enforcement, strong and consistent policy enforcement is a part of the STPI calculation. It is well established that clear restrictions regarding tobacco use at school and consistent enforcement of such policies are associated with reduced likelihood of smoking among students (Galanti et al. 2014). Given that scores for these two domains (Domain 1: Tobacco-free environment and Domain 2: Enforcement) made up a large proportion of the overall policy score, it is likely that high scores in these domains are important for discouraging student smoking at school. Future studies should evaluate the impact of changes to school tobacco policies (and subsequent STPI scores) on student smoking behaviours and student perceptions of school support to resist or quit tobacco.

Limitations

The largest limitation of the current study was our inability to gather the relevant policy documents for all schools within the COMPASS sample. Despite extensive searching, we were only able to collect school tobacco policies for about half of the identified secondary schools. This also limited the sample available for the student-level analyses. However, we believe that our sample of schools is relatively robust given that we were interested in assessing whether this validated tool could guide the development of effective and comprehensive school-based tobacco policies within Canada. Additionally, the schools selected within the COMPASS study represent a

convenience sample and therefore do not represent all schools in Ontario, Alberta, or Canada. Additional data from other jurisdictions across Canada are necessary to evaluate whether these results are consistent. To our knowledge, this is the first study to explore the association between school tobacco policy rating scores and student smoking behaviours. There was limited variability in school tobacco policy scores, which may have limited our ability to identify an association between school tobacco policy score and student susceptibility to future smoking or ever smoking. Replicating the current study in jurisdictions with wider variability in school tobacco policies may identify stronger associations. The student-level analysis is subject to potential under-reporting of smoking behaviours that are common in population-based youth smoking studies. However, the smoking measures were valid and were consistent with national measures (Wong et al. 2012), and students were ensured that their responses were confidential. The analysis was cross-sectional and we are not able to identify the direction of association; schools may have implemented stronger policies in response to high student smoking rates and schools with low student smoking rates may not feel it is necessary to change their smoking policy. Future research should investigate the reasons why schools change their tobacco policy and evaluate any impact on student smoking behaviours.

Conclusions

The STPI quickly identified weak school tobacco policy areas that could be improved. The vast majority of school board and secondary school policies in our sample were missing important components and therefore could not be considered comprehensive. Specifically, most policies were targeted to students and did not include staff or visitors, did not explicitly prohibit tobacco use at all times, and did not explicitly address and prohibit the use of all tobacco products, including cigarillos, little cigars, roll-your-own cigarettes, and smokeless tobacco. Many policies were also missing clear consequences for violating tobacco policies, school-level prevention resources, and school- or community-level cessation services. Stronger school tobacco policies may help to reduce student current smoking behaviours.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

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